Academic Calendar



The University of Western Ontario

London, Canada

1973

Notice

1. The Senate and the Board of Governors of the University of Western Ontario reserve the right to make changes in this calendar without prior notice.

2. Information and faculty listings herein are effective January 1, 1973. For up-to-date information, see the Faculty or Department concerned.

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See outside back cover Flip Index for Faculties, Schools and Colleges. Departments are arranged alphabetically within faculties.

Published by the Senate Secretariat, Stevenson-Lawson Building, under the supervision of the Senate Committee on Publications.

UNDERGRADUATE ACADEMIC CALENDAR

1973

April 2, Monday	Last day for receiving admission applications for the Faculty of Law.
April 6, Friday	Last day for receiving admission applications for Evening Summer Session and Summer Intersession from students applying for the first time. All supporting documentation must be submitted within seven days of this date.
April 23, Monday	Last day for receiving registration forms for Summer Evening and Summer Intersession.
May 9, Wednesday	Summer Evening classes begin at 5:15 p.m.
May 11, Friday	All documentation must be complete for Spring Convocation.
May 14, Monday	First day of classes for Summer Intersession.
May 17, Thursday	Last day for adding or dropping a course without penalty in the Intersession and Evening Summer Session.
June 1, Friday	Last day for receiving admission applications for Summer Day Session from students applying for the first time. All supporting documentation must be submitted within seven days of this date.
June 4, Monday — June 8, Friday	Convocation
June 15, Friday	Last day for receiving registration forms for Summer Day Session.
June 22, Friday	Last day of classes for Summer Intersession.
June 25, Monday — June 29, Friday	Examinations - Intersession.
June 29, Friday	Last day for receiving admission applications from new students for Winter Session 1973/74 (full and part-time intramural) from students applying for the first time.

APRIL

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JUNE

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ACADEMIC CALENDAR

July 2, Monday	Summer Day Session begins.
July 4, Wednesday	Last day for adding or dropping a course without penalty in the Summer Day Session.
August 1, Wednesday	*Last day for application for graduation at Autumn* Convocation.
August 10, Friday	Summer School lectures end.
August 11, Friday — August 16, Thursday	Summer School examinations.
August 31, Friday	Last date for return of Mail Registration in Professional Programs.
September 4, Tuesday	*Last day for receiving admission applications for* Winter Extension and Correspondence Courses 1973/74 Session from students applying for the first time. All supporting documentation must be submitted within seven days of this date.
September 10, Monday — September 12, Wednesday	Registration - undergraduate, intramural students.
September 14, Friday	Last day for receiving registration forms for Extension and Correspondence Courses.
September 17, Monday	Regular day and extension classes begin.
September 22, Saturday	Extension Classes begin in out-of-town Centres.
September 28, Friday	Last day for adding or dropping a full course, first term half course or a full year half course without penalty. Last day for late registration of full-time students.
October 8, Monday	Thanksgiving Holiday
October 26, Friday	Autumn Convocation
December 16, Saturday	Classes end, First Term ends for all Faculties except Dentistry, Medicine and Law.

JULY

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1974

January 7, Monday	Classes resume.
January 18, Friday	Last day for adding or dropping a second term half course without penalty.
February 1, Friday	Last day for receiving admission applications for the Faculty of Medicine.
February 25, Monday — March 2, Saturday	Conference Week.
March 1, Friday	Last day for receiving admission applications for the Faculty of Dentistry. Last day for receiving applications for graduation at Spring Convocation.

JANUARY

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ACADEMIC CALENDAR

April 1, Monday	Last day for receiving admission applications for Program in Occupational Therapy.
April 5, Friday	Last day for receiving admission applications for Evening Summer School and Summer Intersession from students applying for the first time. All supporting documentation must be submitted within seven days of this date.
April 11, Thursday	Last day of classes; Second Term ends for all Faculties except Dentistry, Medicine and Law.
April 12, Friday	Good Friday.
April 15, Monday — May 7, Tuesday	Examinations.
April 22, Monday	Last day for receiving registration forms for Summer Evening Session and Summer Intersession.
April 30, Tuesday	Last day for receiving admission applications for Program in Physical Therapy.
May 8, Wednesday	Summer Evening Classes begin.
May 10, Friday	All documentation must be complete for Spring Convocation.
May 13, Monday	First day of classes Summer Intersession.
May 31, Friday	Last day for receiving admission applications for Program in Communication Disorders.
	Last day for receiving admission applications for Day Summer Session from students applying for the first time. All supporting documentation must be submitted within seven days of this date.
June 3, Monday — June 7, Friday	Spring Convocation.
June 14, Friday	Last day for receiving registration forms for Day Summer Session.
June 21, Friday	Last day of classes Summer Intersession
June 24, Monday — June 28, Friday	Examinations, Intersession.

APRIL

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President and Vice-Chancellor: D. Carlton Williams, BA, MA, PhD, LLD

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Vice-President (Health Sciences): (acting) D. Bocking, M.D., DTM, FRCP(C) FACP

Vice-President (Administration and Finance): A.K. Adlington, BA

Executive Assistant to the President: R.N. Shervill, BA, MA, PhD

Assistant to the Vice-President (Academic): W.S. Turner, BA, LLD

Assistant to the Vice-President (Administration and Finance): O.A. Greiner, BScChE

Registrar and Secretary of the Senate: J.K. Watson, MA, PhD

Chief Librarian: R.E. Lee, BA, BSLS, MFA, PhD

Comptroller: R.R. Glover, BA

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Associate Registrar (Systems): I.P. Suttie, BASc, MSc

Associate Registrar (Admissions): J.W.T. Wilgar, BA, MA

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Secondary School Liaison Officer: W.A. Barill, BA

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Director, French/English Summer School at Trois-Pistoles: Gilles Gagnon, BA, LesL, MA CREDIT

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Dean of Men: A.D. MacKenzie, MA (Acting Dean)

Dean of Women: Leola E. Neal, MA, PhD

Executive Director, University Community Centre: Philip Ranke, MA

Foreign Student Advisor: R.W. McGraw, BA

Director, Office of International Education: D.G. Simpson, MA, PhD

Director, Student Financial Aid: E.J. McLeod, BA

Director, Food Services: G.A. Bullas

Manager, Bookstore: D.R. Mason, BA

Director, Information Analysis and Systems: B.G. Hartwick, BComm

Director, Computing Centre: G.T. Lake, BSc

Director, Physical Plant: R.M. Yeo, BSc, PEng

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Director, Health Services: H.J. Thurlow, MA, MD

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Director of Housing: A.K. Knill

Manager, Residence Admissions and Off-Campus Housing: E.M. Laing

Business Manager, Residences: R.K. Gauld

Conference Coordinator: R.A. Virtue, PSC

Wardens: Men's: W.C. Henry, PhD

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Assistant Director of Libraries/Processing: R.E. Stierwalt, BA, MLS

Assistant Director of Libraries/Collections Development: J.D. Hoover, BA, MA, BLS

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Business Administration, School of: J.J. Wettlaufer, MBA, LLD
Dentistry, Faculty of: W.J. Dunn, DDS, FACD
Education, College of: E. Stabler, BA, MA, EdD
Engineering Science, Faculty of: A.I. Johnson, BASc, MChe
Graduate Studies, Faculty of: H.B. Stewart, MD, PhD
Law, Faculty of: R.S. Mackay, QC, BA, LLM
Library and Information Science, School of: W.J. Cameron, MA, PhD
Medicine, Faculty of: D. Bocking, MD, DTM, FRCP(C), FACP
Music, Faculty of: H.J. McLean, BA, MusB, MA
Nursing, Faculty of: M.J. Flaherty, BScN, BA, MA, PhD
Physical Education, Faculty of: E.F. Zeigler, BA, MA, PhD
Science, Faculty of: A.E. Scott, DSc, PhD
Social Science, Faculty of: G.L. Reuber, BA, AM, PhD

AFFILIATED COLLEGES

Brescia College,
Western Road,
London 72, Ontario.

Principal:
Sister Arleene Walker, BA, MA

Huron College,
1349 Western Road,
London 72, Ontario.

Principal:
J.G. Morden, BA, LTh, DD, STM, DTh

King's College,
266 Epworth Avenue,
London 11, Ontario.

Principal:
A.F. McKee, BA, MA, MSc, PUP

[redacted]

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DEGREES AND DIPLOMAS

1.0 DEGREES OFFERED

The University of Western Ontario offers Programs leading to the following degrees:

Undergraduate degrees:
- Bachelor of Arts (BA)
- Bachelor of Science (BSc)
- Bachelor of Engineering Science (BESc)
- Bachelor of Laws (LLB)
- Bachelor of Music (MusB)
- Bachelor of Musical Arts (AMusB)
- Bachelor of Science (Communication Disorders) BSc(CD)
- Bachelor of Science (Occupational Therapy) BSc(OT)
- Bachelor of Science (Physical Therapy) BSc(PT)
- Bachelor of Science in Nursing (BScN)
- Bachelor of Social Welfare (BSW)
- Doctor of Dental Surgery (DDS)
- Doctor of Medicine (MD)

Graduate degrees:
- Master of Arts (MA)
- Master of Science (MSc)
- Master of Business Administration (MBA)
- Master of Clinical Science (MClSc)
- Master of Engineering (MEng)
- Master of Engineering Science (MESc)
- Master of Library Science (MLS)
- Master of Music (MusM)
- Master of Science in Nursing (MScN)
- Doctor of Philosophy (PhD)

NOTE: For information regarding Programs in Theology, consult the Affiliated Colleges Section.

2.0 DIPLOMAS OFFERED

The University of Western Ontario offers Programs leading to the following diplomas:

Faculty of Social Science: Diploma in Journalism
School of Business Administration: Diploma in Business Administration
Althouse College of Education: Diploma in Education
(Post-Baccalaureate Program)
: Diploma in Education
(Technical Program)

ADMISSION TO THE UNIVERSITY OF WESTERN ONTARIO

Admission to The University of Western Ontario is based on demonstrated ability to succeed in University level work and competition existing at the time of application. The following admission requirements approved by the Senate, are minimum requirements and their possession does not guarantee admission to the University. The University reserves the right to accept or reject any applicant, regardless of the applicant's academic record.

The implementation of admission regulations rests with the Senate Subcommittee on Admissions which rules on the admissibility, advanced standing and re-admissibility of applicants to various undergraduate programs in the Constituent University. The Senate Subcommittee on Admissions is also charged with the responsibility of formulating and recommending policy concerning admissions to the Faculties, Schools and Affiliated Colleges of the University.

Admission to professional Faculties in Dentistry, Law, Medicine, (and related programs in Communication Disorders, Occupational Therapy, and Physical Therapy), and Nursing; the School of Business Administration and the Affiliated Colleges is through their individual Admissions Committees.

Canadidates for admission to the first year of an undergraduate program who wish full-time registration must submit their application through the Ontario Universities Application Centre (OUAC). Applicants to programs other than first year will use The University of Western Ontario application form and will apply directly to the University. For details consult the section of this calendar entitled "How to Apply For Specific Programs"

For information pertinent to Admission and course offerings prospective candidates are cordially invited to phone or write the Office of the Registrar at the Constituent University or the Affiliated Colleges.

Constituent University:

Office of the Registrar - Admissions
The University of Western Ontario
London N6A 3K7, Canada
519-679-2315

Affiliated Colleges:

Office of the Registrar
Brescia College
1285 Western Road
London N6G 1H2 Canada
519-432-8353

Office of the Registrar
Huron College
1349 Western Road
London N6G 1H3, Canada
519-438-7224

Office of the Registrar
King's College
266 Epworth Avenue
London N6A 2M3, Canada
519-433-3491

1.0 PRELIMINARY YEAR - BRESCIA COLLEGE (COEDUCATIONAL)

(Qualifying Year for entry to First Year University)

The Preliminary Year offered at Brescia College is designed for students who have completed Grade 12 (Ontario) or who have the equivalent standing. Minimum standards of admission as set by the College are based on percentage, or rank-in-class, and on principal's reports.

The Preliminary Year will consist of the following program:

FOR ADMISSION TO FIRST YEAR GENERAL PROGRAM (Arts, Music, Science (including Home Economics); or Social Science (including Secretarial Science):

English 10
Four other courses to be chosen from:
Geography 10; History 14; Mathematics 10;
Religious Studies 10; a second language 2 or 10.
(Languages available are: French 2 or 10; German 2 or 10; Italian 2; Latin 2 or 10; Russian 2 or 10; Spanish 2).

A language at the "2" level is an intensive beginners course, at the "10" level it presupposes Grade 12 or its equivalent.

All applications, enquiries and correspondence should be addressed to the Registrar, Brescia College, London N6G 1H2, Ontario.

2.0 ADMISSION AND REGISTRATION OF GRADE 13 STUDENTS FOR PART-TIME INTRAMURAL STUDIES

Selected Grade 13 students attending secondary schools within comuting distance of the University may be permitted to take one intramural University course (at either the Constituent University or the Affiliated Colleges), concurrently with their Grade 13 studies under the conditions below:

2.1 Eligibility:

Completion of four years of studies in a secondary school. Completion of one or more Year Five Level credits in a traditional academic area.
Achievement of 80% average in subjects undertaken in the third and fourth secondary school years.
Registration in sufficient Grade 13 subjects to fulfill the admission requirements of the University.
Nominated by the Principal of the secondary school attended.

2.2 Admission Procedure:

The University Admissions Committee is authorized to select the students, up to a quota of 24 students per year; full documentation concerning eligibility and a statement, signed by the applicant indicating course selection, is to be forwarded by the applicant's principal to the Admission Officer for submission to the Admissions Committee. An application form may be obtained by writing to the Office of the appropriate Registrar.

2.3 Prerequisites for Courses

A student may only register in a course for which he has the prerequisite. A student may not register in a first year course at the University where an equivalent course in the subject is available to him in the High School system.

2.4 University Credit

Credit for a course towards meeting the requirements for a degree shall be based on two conditions:

(a) satisfactory achievement in the work of the course;

(b) evidence at the end of the Grade 13 year that all the admission requirements of the University have been fulfilled.

2.5 Tuition Fees

Tuition fees are waived for Grade 13 students enrolled in one University course.

3.0 POLICY ON ADMISSION TO FIRST YEAR

THE RECOMMENDATIONS OF SECONDARY SCHOOL PRINCIPALS OR GUIDANCE OFFICERS, SCORES IN APTITUDE AND ACHIEVEMENT TESTS, AND FORMAL ACADEMIC RECORDS ARE CONSIDERED CAREFULLY IN THE FINAL SELECTION OF APPLICANTS FOR ADMISSION.

The University reserves the right to limit the number of applicants admitted to the first year of a particular program. This means that on the basis of their academic records some applicants may be admitted to the first year of a program other than their first choice of program, while others who are technically eligible may be excluded because of enrollment pressures.

Candidates may apply for admission to one of nine first year programs.

(1) First Year Arts

(2) First Year Engineering Science

(3) First Year Home Economics (Faculty of Science)

(4) First Year Music

(5) First Year Nursing

(7) First Year Occupational Therapy

(8) First Year Secretarial Science (Faculty of Social Science)

(9) First Year Social Science

3.1 Requirements of Specific University Programs

The courses indicated below must be taken at the Grade 13 level (or equivalent).

FIRST YEAR PROGRAM	REQUIREMENTS
ARTS	Students are strongly urged to take English to the Grade 13 level.
ENGINEERING SCIENCE	Calculus and Functions with at least one other Science credit. The recommended preparation would consist of Calculus, Functions, Algebra, Physics, and other credits totaling six.
HOME ECONOMICS	Chemistry and Biology, English and Mathematics recommended.
MUSIC	A satisfactory audition and General Musicianship Test, together with standing in five Grade 13 credits other than Music.
NURSING	Chemistry and Biology (Grade 12 Mathematics will be required beginning September, 1974).
SECRETARIAL SCIENCE	English
OCCUPATIONAL THERAPY	Biology strongly recommended.
SCIENCE	None, although progression in a Natural Science program will be severely restricted without Calculus and one other credit in Mathematics.
SOCIAL SCIENCE	All Departments encourage students to have acquired skill in the use of English. Training in a language in addition to English will also prove valuable in several subject areas. Students are strongly urged by the Departments of Economics Geography, Psychology and Sociology to complete Calculus, and/or Functions and/or Algebra and also to explore Computer Science where this avenue is available.

For information concerning individual programs see appropriate sections of this Calendar.

4.0 ADMISSION REQUIREMENTS AND REGULATIONS

4.1 Admission with Ontario Grade 13

4.11 Policy

Entrance to First Year undergraduate studies at The University of Western Ontario will be offered to selected Ontario Grade 13 students whose academic record, based on the following factors, indicates potential of success in their studies:

(a) Completion of secondary school studies, including a full year of successful study at the Grade 13 (or fifth year) level;

(b) A recommendation made by the principal (or designate) of the school in which the student completes his education at the secondary level, attesting to his ability;

(c) An academic record for the work traditionally recognized as at the leve of Grades 11, 12 and 13;

(d) The results of the tests offered by the Service for Admission to College and University (SACU) or the appropriate tests of the College Entrance Examination Board (CEEB) will be considered where applicable. See Section on "Standardized Tests".

The work associated with the Grade 13 program will normally be considered to include at least six (6) approved credits. Grade IX certificate from the Western Ontario Conservatory of Music (or equivalent) may be used as a subject in lieu of Grade 13 Music.

Notes

1. Because of requirements within many university programs, and because of the requirements of various Faculties of Graduate Studies, all students are most strongly urged to carry at least two of English, a language other than English, and Mathematics throughout their secondary school years.

2. A minimum academic average is not specified, since possession of a 60% average no longer guarantees admission to The University of Western Ontario. It is most unlikely, however, that students whose average is less than 60% will be successful in the selection process.

3. Students who are unsucessful in obtaining competitive standing after one year and who, therefore, repeat Grade 13 may be expected to submit a level of achievement higher than that normally required.

4. Schools may request the consideration of the Admissions Committee of the application of any student who is considered by the school to be worthy of such interest, where the student's academic qualifications do not meet these described above.

4.12 Early Admission

Students enrolled in Ontario Grade 13 who apply through the Ontario Universities Application Centre (OUAC) will be eligible for "Early Admission", if they have achieved satisfactory standing on their mid-year marks and have demonstrated a potential for success in university studies according to the factors indicated above. Decisions will be mailed by the University on the 18th of May, 1973. The University reserves the right to withdraw an offer of admission if an applicant fails to complete his/her year satisfactorily.

Applicants who do not receive an offer of Early Admission will be reconsidered for admission on the basis of their final Grade 13 marks. It is the applicants responsibility to submit final marks directly to the University as soon as they are available.

4.2 Admission of Students from Canadian Provinces other than Ontario

Students from other provinces in Canada are eligible to apply for admission to first year at this University on the basis of Senior Matriculation, if their academic records meet in subject matter and standing obtained, both the requirements for admission to this University and the requirements for admission to a recognized university in their own province.

Provided that the subjects are acceptable for admission, the following certificates and/or academic standings are considered as Senior Matriculation:

Alberta	Grade 12;
British Columbia	Grade 12;
Manitoba	Grade 12;
New Brunswick	Grade 12;
Saskatchewan	Grade 12;
Nova Scotia	Grade 12 OR First Year at Nova Scotia Universities after Junior Matriculation;
Prince Edward Island	First Year at the University of Prince Edward Island;
Newfoundland	First Year at Memorial University;
Quebec	Grade 12 or its equivalent, i.e. completion of first year C.E.G.E.P. (General Program) or Collegial Program at Bishop's, McGill or Sir George Williams, with appropriate standing. (Note: Applicants who present the Diplome d'etude Collegiale with at least second class standing may be eligible for advanced standing in certain first year subjects).

Notes

1. Where Grade 12 is being presented as Senior Matriculation a higher academic average may be required than the minimum 60% normally acceptable for applicants from Ontario Grade 13.

2. Students intending to register in one of the first year programs indicated in section 3.0 should note the requirements of that program.

3. Upgrading in certain subject areas may be required in order to satisfy the progression requirements of specific university programs. All students are therefore well advised to make arrangements for academic counselling with the Dean of their Faculty as soon as possible following admission to the University.

4.3 Applicants from U.S.A.

Students graduating from Grade 12 of an accredited High School in the U.S.A. with high standing (an A average) are eligible to apply for admission to first year at this University. The subjects of Grade 12 should be selected in accordance with the first year program requirements.

Upgrading in certain subject areas may be required for progression in a specific university program after first year. Students in good standing in a university year beyond the Grade 12 level are eligible to apply for admission with advanced standing in accordance with University regulations. Advanced standing for students applying from the first year of a four year general university program subsequent to completion of Grade 12 will be determined by the Dean of the Faculty to which application is made in conjunction with the Senate Subcommittee on Admissions.

4.4 Applicants from Foreign Countries

A separate handbook, entitled **Information for Foreign Students**, is available upon request from the Admissions Office, the Dean of the Faculty of Graduate Studies, or the Foreign Student Adviser of the University.

Prospective students should also contact the Department of Immigration of the Canadian Government, Ottawa, Ontario or the nearest Canadian Embassy or Consulate for visa information.

4.41 Admission Requirements

Applicants seeking admission to a first year program at The University of Western Ontario or one of its Affiliated Colleges must present the equivalent of Ontario Grade 13 standing (see chart of equivalencies). The academic record of the applicant must meet in subject matter and in standing obtained, both the requirements for admission to this University and the requirements for admission to the applicant's own national university.

Students in good standing in a university year above the Grade 13 level are eligible to apply for admission with advanced standing.

Students already in possession of a university degree who wish to take undergraduate courses for the purpose of upgrading are eligible to apply for admission as special students. Courses taken as a special student normally do not count towards a degree.

All foreign students applying for admission to an undergraduate degree program must write tests offered by the College Entrance Examination Board (C.E.E.B.) and for those whose first language is not English, the Test of English as a Foreign Language (TOEFL) or the proficiency test of the English Language Institute (E.L.I.) must be written.

4.42 Academic Record

All foreign students will be required to submit a complete academic record of all work taken beyond the primary school level. The applicant's academic record may include the following documentation:

(a) Original high school and/or university diploma or matriculation certificate, such as G.C.E. certificates.

(b) Official transcripts of high school and/or university studies, showing subjects studied and marks (or standing) obtained.

(c) Official translations of all original documents. Translations must be notarized, or certified by a government agency.

(d) Test scores, where required, for such examinations as the T.O.E.F.L. or (E.L.I.) and C.E.E.B. tests.

(e) Syllabus of high school or post-secondary training.

Where "original" or "official" documents are required, photocopies are not acceptable. "original" documents such as diplomas and certificates are promptly returned to the applicant by Registered Air Mail. Certified documents bearing the official seal of a government agency or examining body are acceptable in lieu of original certificates.

Transcripts or statements of standing should be sent directly to the Office of the Registrar,—Admissions. The University of Western Ontario or to the Registrars at Brescia, Huron, or King's College, by the issuing institution (high school or university) except when translations are also required. In the latter case, applicants should obtain the official translations and send them, along with the original (untranslated) document to the Registrar's Office,—Admissions.

4.43 Certificates Accepted in Lieu of Standing in Ontario Grade 13

Australia	Matriculation certificate of an Australian university.
Argentina	Certificate of standing in two years of university study in Argentina.
Belgium	Certificate d'Humanit és.
France	La deuzieme-Baccalaureat de l'Enseignment Secondaire—Part II.
Germany	Abitur-Universitatsreifezeugnis.
Ghana	General Certificate of Education (Advanced)*
Greece	Gymnasium Certificate
Hong Kong	General Certificate of Education (Advanced)*; or matriculation of the University of Hong Kong if gained since 1965.
India	General Certificate of Education (Advanced)*; other qualifications may be considered.
Iran	Graduation certificate from 1st year of a university.
Israel	Graduation certificate from 1st year of a university.
Italy	Graduation certificate from 1st year of a university.
Jamaica	General Certificate of Education (Advanced)*.
Latin America	Bachillerato Universitario and completion of 1st year at a university.
Lebanon	Graduation certificate from 1st year of a university.
Ma laysia	General Certificate of Education (Advanced)*.
The Netherlands	Hogerburgerschool or Gymnasium Certificate.
Nigeria	General Certificate of Education (Advanced)*.
Norway	Examen Artium.
Pakistan	Completion of university work to the satisfaction of the Admissions Committee.
Singapore	General Certificate of Education (Advanced)*.
United Arab Republic	Graduation Certificate from 1st year of a university.
United Kingdom	General Certificate of Education (Advanced)*.
West Indies	General Certificate of Education (Advanced)*.

*Students applying on the basis of the General Certificate of Education (G.C.) must present passes in five acceptable subjects of which two must be at the Advanced Level, or passes in four acceptable subjects of which three must be the Advanced Level. To be eligible for admission consideration, the applicant must have obtained at least a "D" average on two Advanced Level papers appropriate to the program to which he is seeking admission.

Certificates other than those listed above may be considered on an individual basis providing that they are equivalent to the standing required for admission to the first year level at this University. For eaxample, the International Baccalaureate Diploma would qualify an applicant for admission consideration to a first year program.

Advanced standing may be granted to applicants for admission to 3-year and 4-year Baccalaureate programs who have graduated from Institutes of Education of the United Kingdom or Eire. Such advanced standing shall be defined as credit for up to five courses of the first and second years, providing that the applicant's qualifications for admission to his Institute of Education fulfilled the normal admission requirements of the Institute. This may be increased, by credit up to an additional three courses, upon representation of Departments on behalf of a particular student to the Senate Subcommittee on Admissions.

4.5 Mature and Teacher Applicants*

Admission to the first year of University studies may be granted to Mature and Teacher applicants who lack full Grade 13 standing (or its equivalent).

4.51 Mature Applicants are those who:

(a) will be at least twenty-three years of age in the calendar year in which admission is sought;

(b) are residents of Ontario at the time of application;

(c) have not obtained unsatisfactory standing in an educational setting within the three calendar years preceding application to the University;

(d) have not previously attended a university at a level equivalent to Year One at The University of Western Ontario.

4.52 Teacher Applicants are those who:

(a) have completed successfully the one year program at an Ontario Teachers' College; (official certificates must be submitted);

(b) have completed at least two years of full-time employment as teachers;

(c) are residents of Ontario at the time of application;

(d) have not obtained unsatisfactory standing in an educational setting within the three calendar years preceding application to the University;

(e) have not previously attended a university at a level equivalent to Year One at The University of Western Ontario.

* Policy under review.

4.6 Registered Nurses

Candidates holding a Registered Nurses Certificate from the Province of Ontario who lack full Grade 13 standing (or its equivalent), and who have not previously attended a university at a level equivalent to Year I at The University of Western Ontario, are eligible to apply for admission to first year undergraduate studies.

Note: Registered Nurses wishing to proceed to a Bachelor of Science in Nursing (BScN) may be considered for admission to the three year Post R.N. Program in Nursing. Inquiries should be directed to: The Faculty of Nursing, The University of Western Ontario, London N6A 3K7, Ontario, Canada.

4.7 Applicants from Althouse College of Education

Students who have attended Althouse College of Education and who have not previously registered at the Constitutent University should contact the Office of the Registrar—Admissions with reference to the procedures to be followed.

4.8 Admission Based on Standing Obtained at a Recognized University or College

4.81 *Admission to First Year Without Advanced Standing*

Students registered in a preliminary year or freshman year at a recognized University or Junior College to which students are admitted after Junior Matriculation (Ontario Grade 12 level) are eligible to apply for admission to first year at this University provided that their first or preliminary year program includes subjects equivalent to those required for admission to each program.

4.82 Admission from Special University Programs in Ontario

Students applying to transfer from universities in Ontario to which they were admitted without having satisfied the normal admission requirements must present satisfactory standing in at least five (5) university courses in order to be eligible for admission to this University. Upon gaining admission such students will be considered for advanced standing in university courses successfully completed in accordance with the Senate regulations indicated below.

4.83 Admission with Advanced Standing

Students in good standing in a university year beyond the Senior Matriculation level are eligible to apply for admission with advanced standing in accordance with the regulations set forth below, except that, advanced standing for students applying from the first year of a four-year general university program subsequent to completion of Grade 12 (Senior Matriculation), will be determined by the Dean of the Faculty to which application is made in conjunction with the appropriate Admissions Committee. Depending on the Faculty concerned, the award of advanced standing in such cases may be reduced as a result of overlapping in course content with subjects offered in Ontario Grade 13, i.e. advanced standing may be denied for a course(s) which is normally taken in Secondary School as part of the Grade 13 program in Ontario. Refer to the specific program(s) outlined in this calendar for course requirements.

4.84 Eligibility:

(a) Applicants for admission must have completed the normal requirements for admission to The University of Western Ontario prior to the commencement of the academic session for which application is made.

(b) Applicants for admission to The University of Western Ontario transferring from an accredited University of College must be eligible for re-admission and registration on a full-time intramural basis at the last University or College attended in the academic session for which application is made.

4.85 Conditions for Admission:

(a) Admission of students transferring from another University or College is not automatic; all such applicants will be assessed in competition with other new applicants in the light of academic requirements and enrolment limitations which are pertinent at the time of application.

(b) Applicants with at least a "C" (60%) average, and no failures in all previous work at the university level, will be eligible to apply for admission to the University.

(c) Applicants who have failed to obtain pass standing in one or more courses but who have an overall average of at least a "C" (60%) in all courses completed successfully will be considered by the appropriate Admissions Committee.

(d) Admission to a specific program of study is subject to the minimum requirements for admission and progression in that program.

4.86 Conditions for Advanced Standing:

(a) The granting of advanced standing in a degree program of The University of Western Ontario is subject to the following general limitations:

—completion of the minimum of five full senior academic courses, or their equivalent, offered by the University. This regulation may be waived on written recommendation of the Dean on the advice of his Educational Policy Committee.

—completion of all specific requirements for graduation in the particular program to which admitted.

(b) Advanced standing may be granted for all courses completed successfully at another University or College provided that these courses, even though not offered at this University, are recognized as reaching acceptable University standards and may be appropriately included in the program of studies at The University of Western Ontario. The granting of such credit shall be subject to the following additional provisions:

—credit will not be allowed for any courses completed at another University in fulfillment of the basic requirements for University Admission (Preliminary Year); credit may be allowed for any additional courses completed concurrently.

—a First Year Program of study at another University may be granted credit up to a number of courses constituting the First Year of the Program in The University of Western Ontario to which admitted. Where more courses than the normal load prescribed at the other University were completed concurrently additional credit may be allowed.

—Advanced standing may be granted for a half course(s) successfully completed at another University. If a full course in the same subject with overlapping course content at the same level is taken at the University of Western Ontario, credit for only one full course will be allowed towards the fulfillment of the requirements for graduation in a degree program.

(c) The determination of prerequisites and course equivalency shall be at the discretion of the Departments concerned.

(d) In any event, the overall average in those courses allowed for credit must be at least 60%.

Notes:

Where necessary, the grades from other Universities or Colleges whose marking schemes differ from that of this University shall be translated into the equivalent grades of The University of Western Ontario and admissibility assessed in those terms.

Applicants for transfer for whom English is a second language must submit with their applications evidence acceptable to this University of proficiency in English.

4.9 Applicants from Colleges of Applied Arts and Technology and Ryerson Polytechnical Institute*

Students who graduate from a three-year program at Ryerson Polytechnical Institute or from Ontario Colleges of Applied Arts and Technology with first class standing throughout their final year (or their last two semesters), together with at least second class standing throughout the program, will be admitted to studies at The University of Western Ontario at the Second Year level. The subjects for which they have been given credit will not be specified but progression and possession of prerequisites will be determined by the Department in which they wish to work in association with the Registrar or his designate, according to Senate regulation.

Students graduating from a three year program with second class standing may be recommended by a Department for First Year exemption in individual courses that the Department feels have been covered by the work at the College and their program reduced by the amount of exemption granted. In no case may exemption be granted for a subject passed with less than second class standing.

Students graduating from a three year program with less than second class standing will be eligible for admission consideration but will not be eligible for consideration for exemption.

Students graduating from a two year program, similarly, will receive no consideration for exemption, but may, with satisfactory standing, be admitted to first year.

*Policy for Ryerson Polytechnical Institute and C.A.A.T.S. under review.

4.10 Special Students - University Graduates

Special Students are those students already in possession of a university degree who wish to take further university courses.

Graduates of other universities who wish to enroll at The University of Western Ontario as Special Students must file an application form with the Admissions Office prior to the application deadline of the session for which admission is sought. Application forms may be obtained from the Admissions Office, Stevenson Hall, The University of Western Ontario, London N6A 3K7 Ontario.

Special students are allowed to register in such courses as the Department(s) concerned may approve. Such students are not registered in a degree program. It is the responsibility of the applicant to contact the Department(s) in which he wishes to study and to obtain written permission for specific course registration. The written recommendation of the Department(s) must be forwarded to the Admissions Office in support of the application for admission.

Such applicants are also required to supply official transcripts of all university work completed, showing degree(s) earned. This documentation must be sent directly to the Admissions Office by the Registrar of the universities concerned.

Admission as a Special Student carries no implications with respect to acceptance to a Graduate Program. The Admission of Special Students will be granted in accordance with the regulations detailed below.

(a) Eligibility for Admission:

—Applicants for admission as Special Students must have completed a university degree prior to the commencement of the academic session for which application is made.

—The university degree of such applicants must be equivalent to at least a three year Bachelor's degree at The University of Western Ontario.

(b) Conditions of Admission:

—Admission of Special Students will be based on degree equivalency in terms of total number of years studied, level of study and standing obtained.

—Academic standing (performance) on work completed within the program for which the degree was conferred must be equivalent to a minimum overall average of "C" or 60% within the context of this university's grading system.

—Applicants for whom English is a second language must submit with their applications evidence acceptable to this University of proficiency in English.

—The Senate Subcommittee on Admissions shall have full jurisdiction and discretion in adjudicating the admissibility of Special Students.

(c) Conditions for Continued Registration:

A grade point total of eight (8) must be accumulated in the first five (5) full (or equivalent) courses attempted at the University of Western Ontario. Students registered in fewer than 5 courses or in a subsequent session following 5 course attempts must accumulate a grade point total of twice the number of courses attempted, e.g. a student registered in 3 courses must accumulate a grade point total of at least 6. The progression of students who fail to meet this latter condition shall be at the discretion of the Dean of the Faculty in which the student is registered. The Dean will notify the Registrar's Office in writing of the decision to allow progression where this condition has not been met. Failure to meet the minimum requirement of 8 grade points shall result in automatic withdrawal from the University.

4.11 Letters of Permission

(a) For Transfer of Credit To Another University

Students registered at other universities may wish to take courses at The University of Western Ontario for transfer of credit toward their degree program at their home university. Such students must file an "application for undergraduate admission" form which may be obtained from the Registrar's Office, Stevenson Hall, The University of Western Ontario, London N6A 3K7, Ontario.

In support of the application for admission, the applicant must obtain from the Registrar of his home university, a Letter of Permission. The Letter of Permission must name the specific course(s) which the student will be allowed to take at The University of Western Ontario for transfer of credit to his home university.

On completion of studies at this University, it is the responsibility of the student to arrange to have an official transcript of his course work sent to the Registrar of his university. Request for transcript should be submitted with cheque to the Registrar's Office, Stevenson Hall, The University of Western Ontario, London N6A 3K7, Ontario. (One copy $1.00, two copies $2.00, three copies $2.25—25¢ each for additional copies of the same order).

(b) For Transfer of Credit to The University of Western Ontario

A Letter of Permission is a document enabling a University of Western Ontario undergraduate student to be enrolled in a specific course(s) at another university without being formally registered as a student of that institution. The courses, when successfully completed at the host university are accepted for credit toward the student's program at this university.

Eligibility:

A Letter of Permission may be issued to any student in good standing (i.e. eligible for further registration) at this University.

Application for Approval

Application will be made through the Office of the Dean of the student. Approval must be gained from the Dean of the Faculty and/or the Department Chairman where appropriate. Authorization for the issuance of a Letter of Permission will be forwarded by the Dean to the Office of the Registrar.

Conditions:

(a) Course(s) taken on a Letter of Permission must be appropriate to the student's program.

(b) When a Letter of Permission is granted to a student still in progress it must be provisional pending successful completion of the progression requirements for that session.

(c) When a Letter of Permission is granted for the final course of a student's program to be taken during a Winter Session, graduation may not be prior to the next Fall Convocation.

(d) Courses taken at another University on a Letter of Permission during a Summer Session shall be included within the maximum permissible academic load for the summer period, May to August.

(e) An official transcript must be submitted by the student for any course attempted on a Letter of Permission; the course(s) thus attempted shall be counted within the maximum allowable course attempts and the grade/mark assigned or its equivalent shall be counted in the assessment of academic averages and grade point totals.

5.0 RE-ADMISSION

Re-admission to the University or to an Affiliated College (Brescia, Huron, or King's) following withdrawal for unsatisfactory academic standing is subject to the following conditions:

5.1 Submission of a formal application for re-admission to the appropriate Registrar prior to the deadline of the session in which registration is desired.

5.2 Eligibility for re-admission shall not commence until the lapse of at least one calendar year (12 months) from the time of withdrawal (i.e. the closing date of the academic session in which unsatisfactory standing was obtained).

5.3 Re-admission is not automatic. All such applicants will be assessed in competition with new applicants in the light of academic requirements, enrolment limitations, etc. which are pertinent at the time of reapplication.

5.4 All applications for re-admission shall be considered and approved or denied by the appropriate Admissions Committee, whose decision is final. Appeals against a ruling may only be considered on presentation of additional evidence.

(Note: Applicants must submit in support of their application for re-admission a type-written statement outlining the causes of their previous academic difficulties. The statement should also include the intentions of the applicant and a personal assessment of his chances for success. Applicants are explicitly instructed as to their responsibility for supporting their applications by appropriate documentation of all material which may be relevant to assessment.

5.5 Students who fail to maintain satisfactory academic standing following re-admission either in the immediately subsequent year or in any succeeding year shall not normally be readmissible to the University unless their record over a period of several years indicates significantly enhanced probability of success in academic work.

6.0 STANDARDIZED TESTS

6.1 Proficiency in English

Lectures, seminars, and examinations in this University are for the most part conducted in English and it is essential that all students have an adequate knowledge of written and of spoken English. An applicant for admission for whom English is a second language must submit with his application evidence acceptable to this University of his proficiency in English.

Applicants whose first language is not English are required to write one of the following tests:

6.11 Test of English as a Foreign Language (T.O.E.F.L.), administered by the College Entrance Examination Board. The T.O.E.F.L. is offered on several dates each year in a number of centres in Canada, the United States and many other countries. Applicants are required to make their own arrangements to write the T.O.E.F.L. and to have the results sent directly to the Admissions Office by the testing agency.

The T.O.E.F.L. **Bulletin of Information** and Registration Form can be obtained by writing well in advance for them to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A.

6.12 English Proficiency Test of the English Language Institute (E.L.I., University of Michigan.)

Applicants are required to make their own arrangements to write the English Proficiency Test by writing to: The English Language Institute, University of Michigan, Ann Arbor, Michigan, U.S.A. This test is offered in Canada, the United States, and several other countries.

The Michigan Test can be written at this University on the second Saturday of each month, from 10:00 a.m.—12:00 noon, beginning in February, 1973. Arrangements to write this test can be made by contacting: The Admissions Office, Stevenson Hall, The University of Western Ontario, London 72, Ontario.

The University reserves the right to deny admission to applicants who do not demonstrate satisfactory knowledge of English, by means of one of the tests mentioned above, regardless of academic qualifications.

6.2 Undergraduate Admission (SACU AND CEEB)

6.21 Ontario Grade 13 students applying for admission to The University of Western Ontario for the academic year 1973-74 are strongly advised to write the SACU aptitude tests, particularly if they fall within the following categories:

(i) Scholarship candidates;
(ii) candidates for limited enrollment programs;
(iii) candidates for general admission who might be classified as "borderline applicants."

Note: All students from Ontario Secondary Schools who write SACU in the 1972-73 academic year and who register at this University in the Fall of 1973 will be reimbursed the $7.00 fee charged by SACU for the Canadian Scholastic Aptitude Test (CSAT).

6.22 Candidates from provinces in Canada other than Ontario are strongly urged to write the SACU aptitude tests or the College Entrance Examination Board (CEEB) tests if applying to first year.

6.23 Applicants from Foreign Countries must write either the tests administered by the Service for Admission to College and University (SACU) or the College Entrance Examination Board (CEEB) tests. An application will not be considered complete until the University has received the results of two aptitude and three achievement tests.

Complete information regarding the SACU and CEEB tests can be obtained by writing to:

SACU (Service for Admission to College and University)
151 Slater Street
Ottawa 4, Ontario, Canada.

CEEB (College Entrance Examination Board)
P.O. Box 589
Princeton, New Jersey 08540, U.S.A.

OR

P.O. Box 1025
Berkeley, California 94701, U.S.A.

6.3 Professional and Graduate Admission

First Year Dentistry

Test Required: Dental Aptitude Test (D.A.T.)
Agency: Canadian Dental Association
234 St. George Street
Toronto 5, Ontario, Canada

First Year Law

Test Required: Law School Admission Test (L.S.A.T.)

Agency: Educational Testing Service
P.O. Box 944
Princeton, New Jersey 08450, U.S.A.

First Year Medicine

Test Required: Medical College Admission Test (M.C.A.T.)

Agency: The Psychological Corporation
304 East 45th Street
New York, New York 10017, U.S.A.

First Year M.B.A.

Test Required: Admission Test for Graduate Studies in Business

Agency: Educational Testing Service
P.O. Box 944
Princeton, New Jersey 08450, U.S.A.

Graduate Studies

Test Required: Graduate Record Examination (G.R.E.): Miller Analogies Test (M.A.T.)

Note: The requirement for these tests varies according to the Department to which admission is being sought. For further details, consult the Faculty of Graduate Studies Section of this Calendar.

Agencies: Educational Testing Service
P.O. Box 944
Princeton, New Jersey 08550. U.S.A.

The Psychological Corporation
304 East 45th Street
New York, New York 10017, U.S.A.

7.0 HOW TO APPLY FOR SPECIFIC PROGRAMS

All applicants who have not previously attended The University of Western Ontario **must** submit a completed application form with the required supporting documentation before the application deadline date as indicated in the Academic Calendar. Students are urged to forward applications and supporting documentation well in advance of the deadline date.

Candidates for admission may apply for enrollment in the following sessions: Full-time intramural, Part-time intramural (offered by the Constituent University and the Affiliated Colleges: Brescia, Huron and Kings), Intersession, Summer School (Day and Evening), Extension and Correspondence (offered by the Constituent University only). Further information with respect to course offerings and admission may be obtained from:

Constituent University:

Office of the Registrar - Admissions
The University of Western Ontario
London N6A 3K7, Canada
519-679-2315

Affiliated Colleges:

Office of the Registrar
Brescia College
1285 Western Road
London N6G 1H2 Canada
519-432-8353

Office of the Registrar
Huron College
1349 Western Road
London N6G 1H3, Canada
519-438-7224

Office of the Registrar
King's College
266 Epworth Avenue
London N6A 2M3, Canada
519-433-3491

7.1 Undergraduate Application Procedures

The University of Western Ontario, through its membership on the Council of Ontario Universities, is now directly involved with the *Ontario Universities' Application Centre* located in Guelph, Ontario. The Application Centre will be processing and coordinating the applications of candidates who wish to enroll as **Full-time** students at the **First Year** level. Such applicants are divided into two streams:

Grade 13 Stream includes applicants presently enrolled in Ontario Grade 13 at an institution recognized by the Ontario Ministry of Education. These students are supplied with an application form by the High School in which they are enrolled. The application form is sent by the High School to the Application Centre, where it is processed and then sent to the University.

Regular Stream includes applicants who are **not** presently enrolled in Grade 13. This stream will include Mature applicants, applicants from other provinces in Canada and foreign applicants. Candidates for admission in this stream may obtain the appropriate application form from the University. The completed application form is mailed to the Application Centre where it is processed and then sent back to the University.

All Candidates applying through the Application Centre will receive a brochure containing detailed instructions with their application form.

Applicants who wish to enroll in: Intersession, Summer School (Day and Evening), Extension, Correspondence, Part-time intramural; or who request admission with **advanced standing** in three or more courses (to Full-time or Part-time studies); or who are applying for re-admission will complete **The University of Western Ontario Application** form and will submit it directly to the University.

It is the responsibility of all applicants to ensure that the following information (if applicable) is forwarded to the appropriate Registrar's Office in support of any application made:

(1) All Pertinent Academic Documentation
Such documentation must be forwarded to the Admissions Office directly from the previously attended institutions e.g. Secondary Schools, Colleges and Universities.

(2) Letters of Reference (if applicable)
Such letters must be sent from the referee directly to the Admissions Office. The use of University supplied forms is preferable.

(3) Marriage Certificate(s)
(For Women Only—Requested by Statistics Canada) Official Certificate(s) of Marriage must be submitted for confirmation of name change(s).

(4) Birth Certificate (for Mature Applicants)
An official Certificate of Birth must be submitted if proof of age is required.

(5) Employment Resume (if applicable)
An applicant must present a resume of employment for the period of time during which he has not been in attendance at an academic institution.

(6) Test of English Proficiency
A test of English Proficiency (if applicable) must be arranged well in advance

(7) Letter of Permission
A Letter of Permission must be sent directly from the applicant's University.

7.2 Application to Professional and Graduate Programs

For information on the Faculties and Programs listed below, consult the appropriate sections of the Academic Calendar.

Professional Programs

Dentistry, Law, Medicine, Communication Disorders, Occupational Therapy, Physical Therapy, Nursing and Engineering Science. Appropriate application forms should be obtained from:

Office of the Registrar—Admissions
Stevenson Hall
The University of Western Ontario
London N6A 3K7, Ontario, Canada.

Graduate Programs in Business Administration

Students who wish application forms or additional information should write to:

The Dean
School of Business Administration
The University of Western Ontario
London N6A 3K7, Ontario, Canada.

Programs in Education

Students who wish application forms or additional information should write to:

The Registrar
Althouse College of Education
Western Road
London N6A 3K7, Ontario, Canada.

Faculty of Graduate Studies

Students who wish application forms or additional information should write to:

The Dean
Faculty of Graduate Studies
The University of Western Ontario
London N6A 3K7, Ontario, Canada.

8.0 APPLICATION DEADLINES

FINAL APPLICATION DATES - **1973**

February 1	Faculty of Medicine
March 1	Faculty of Dentistry
March 31	Program in Occupational Therapy
April 2	Faculty of Law
April 6*	Evening Summer Session; Summer Intersession
April 30	Program in Physical Therapy
May 31	Program in Communication Disorders
June 1*	Day Summer Session
June 29	Winter Session Intramural, full-time and part-time
September 4*	Winter Extension and Correspondence

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February 1	Faculty of Medicine
March 1	Faculty of Dentistry
March 31	Program in Occupational Therapy
April 5*	Evening Summer Session; Summer Intersession
April 30	Program in Physical Therapy
May 31	Program in Communication Disorders;
May 31*	Day Summer Session
July 1	Winter Session Intramural, full-time and part-time
September 3rd*	Winter Extension and Correspondence

* All supporting documentation **must** be received in the Office of the Registrar - Admissions within seven days following the appropriate application deadline date.

C. Registration and Changes in Registration

1.0 REGISTRATION

Every student attending the University must have been granted Admission in accordance with the prescribed policies of the University (see Section A and must:

(i) register with the Office of the Registrar for the courses taken in any academic session at the designated time for that session (see Academic Calendar for sessional dates).

(ii) pay all prescribed fees or make satisfactory arrangements for payment with the Office of the Comptroller.

Students who do not register at the times designated for the academic session attended will be charged a late registration fee. (see Section E.) A student's registration shall not be considered to be complete until he has made arrangements for the discharge of his financial responsibilities to the University in accordance with the University policies.

No Student will be permitted to register until all outstanding accounts due to the University have been paid.

1.1 Registration Status

Each undergraduate student will be classified as Regular or Special and Full-time or Part-time.

A student's registration status is determined as follows:

1.11 Regular Undergraduate Student:—a student who registers in the regular course requirement for a Program and is proceeding toward a degree in that Program.

1.12 Special Undergraduate Student:—a student who has received a degree from this or another University and who registers to take further courses but who is not a candidate for a degree.

1.13 Full-time Undergraduate Student:—a student who registers in any session for 3½ or more courses (see also Section D, Course Load and Section E, Fees.

1.14 Part-time Undergraduate Student:—a student who registers for 3 or fewer courses in any session.

1.15 Graduate Student:—any student registered in the Faculty of Graduate Studies (see appropriate calendar Section).

1.2 Course Selection

A student proceeding to a degree must select his courses in accordance with any prescribed requirements for the Program in which he is registered.

Many courses have specified prerequisites or co-requisites or require the approval of the Department. These requirements and any enrolment limitations should be noted carefully prior to registration.

A student may substitute for a prescribed courses only with the consent of the Chairman of the Department of his Honours program or area of concentration, and the written approval of the Dean of his Faculty of registration. All substitutions must conform to the basic requirements as laid down by the Senate.

Special Students must obtain Departmental approval for each course selected, prior to registration.

A student registering in the regular Winter Session and intending to take Second Term Half Courses shall register for these courses in the September registration period.

Each student is responsible for ensuring that his course registration is accurate and complete!

2.0 PRIORITY COURSE SELECTIONS

Registration of full or part-time students at the University of Western Ontario and its Affiliated Colleges (Brescia, Huron, King's) is based upon priority course selections which the applicant, on the basis of his academic plans and academic counselling, has submitted as being appropriate for him. This format has been adopted in order to optimize the course registrations for each student.

For upper class students, the procedures described below require the payment of a $50.00 non-refundable tuition deposit (see fees section of this calendar). This tuition deposit confirms the student's intention to register and permits his course selections to be timetabled. If the degree program for which the student has applied is not available to him the $50.00 tuition deposit will be refunded. Students wishing to transfer their registration from the Constituent University to an Affiliated College (Brescia, Huron, King's) or from an Affiliated College to the Constituent University should normally apply for such transfer prior to paying the $50.00 tuition deposit. After such payment the tuition deposit will be transferable from one academic unit to another only on special appeal.

2.1 Registration Procedures

Undergraduate students registering for the first time; re-admissions; and special students: (See admission deadlines set forth at the front of this Calendar). Students in good standing returning to the University or to an Affiliated College (Brescia, Huron, King's) after being out for one academic year are considered to be readmissions.

Failure of any student to meet the admission or registration deadlines may limit the availability of courses open to him.

Each student who accepts an offer of admission to the University or an Affiliated College will be given a course selection form. Students should specify the courses in which they wish to register on this form and return it, by the date specified.

Students selecting their courses must observe the regulations set forth in this calendar including course prerequisites and program requirements.

Academic counselling is available to all students in order to assist them in selecting courses and programs of study appropriate to their academic goals.

Students who wish to enter courses that require the permission of a Department or of an instructor, must submit a statement giving him such permission with his course selection form.

Special students should note that they are required to submit a statement of permission from the Department concerned for each course that they wish to enter.

It is the responsibility of each student to ensure the completness and accuracy of his registration.

2.2 Continuing Undergraduate Students

A priority course selection period will be scheduled in March, 1973. Students will be requested at this time to make their course selections for the academic year 1973-74. Academic Counselling will be available during this scheduled period and students will be urged to use this service when making their course selections.

A course revision and registration form will be mailed to each student with his examination report. Students may revise their earlier course selections and return it by the date specified on the form.

All students will be scheduled into their courses as their registration forms are received, a timetable will be prepared for them, and they will be informed of the time and place for the completion of their registration in September.

3.0 COMPLETION OF REGISTRATION (SEPTEMBER)

Students who have submitted priority course selection forms will complete their registration in September by paying their tuition fees, at which time they will be given their completed timetables.

Students registering in the Faculties or Schools of Business Administration, Dentistry, Law and Medicine will do so by mail during the summer. Details of the procedures to be followed will be forwarded to them with their spring examinations reports.

4.0 INTERSESSION SUMMER SCHOOL

Students registering in Intersession Summer School (Evening and Day), Extension or Correspondence courses may do so by mail. For details concerning the courses to be offered and the procedures to be followed, the calendars, covering Summer School and Extension and Correspondence or the Office of the Registrar should be consulted.

5.0 LATE REGISTRATION

The last date for late registration is Friday, October 5, 1973. While every effort will be made to accommodate late registrants, students must be advised that a number of courses at this date may be filled and that their course selections may, therefore, be limited.

6.0 CHANGES IN REGISTRATION

6.1 Adding and Dropping Courses

6.11 Intramural Sessions

The last day for a change in registration, in an academic program, without academic penalty, by adding or dropping a full course, or a first term half course is 3 weeks after the commencement of first term lectures. (Friday, October 5, 1973).

The last day for a change of registration in an academic program without academic penalty, by adding or dropping a second term half course, is three weeks after the commencement of second term lectures. (Friday, January 25, 1974) under the following conditions:

(i) a second term half course may be replaced by another second term half course.

(ii) a second term half course may be added if a full course has been dropped prior to the penalty date for first term.

(iii) a second term half course may be added as an extra half course with the permission of the Dean of the Faculty of registration.

6.12 Procedure

A course may be added or dropped only with the joint approval of the Dean of the Faculty in which the student is registered (or his designate) and the Chairman (or his designate) of the Department concerned. Adding a course:

Evening Summer Session (12 weeks): two weeks after commencement of lectures

Intersession and Summer School (6 weeks each): third day of lectures.

Dropping a course without academic penalty:

Evening Summer Session (12 weeks): two weeks after commencement of lectures.

Intersession and Summer School (6 weeks each): third day of lectures.

6.2 Program Changes

Program changes may only be authorized when submitted on a **Change of Status Form** available at the Dean's Office.

(a) Changes from Full-time to Part-time

(b) Changes from Honors to General

(c) Changes in Faculty Affiliation

(d) Withdrawal from University

Following failure to achieve the minimum requirements for progression, or following the accumulation of six or more failed attempts, withdrawal from the University is mandatory for a minimum period of twelve months, except as follows:

The Dean of the Faculty in which the student is registered may waive this regulation, in which case it shall be the Dean's responsibility to Specify in writing the requirements that the student must meet in order for him to maintain his registration.

A student who wishes to withdraw from the University must consult the Dean of his Faculty or School and complete the Change of Status Form. A student who withdraws without providing official notice to the Registrar will not be eligible for any refund of fees nor for exemption from unpaid fees. Fee refunds will be made on a pro rata basis. No refund of tuition fees will be made for registrations cancelled after March 15.

7.0 COURSE REGISTRATIONS: CONSTITUENT UNIVERSITY AND AFFILIATED COLLEGES

(Brescia, Huron, King's)

A student who is registered at the Constituent University or at an affiliated college (Brescia, Huron, King's) should note that if a course, appropriate to his program is offered in an Academic Unit other than his own he may register in it providing that his Academic Unit does not offer the course. A student must, however, have the written permission of the Dean of the Faculty, School or Affiliated College in which he is registered prior to registering in a course in another Academic Unit which is also offered in his own Academic Unit.

ACADEMIC PROGRAMS AND POLICY

1.0 PROGRAMS IN THE FACULTIES OF ARTS, SCIENCE AND SOCIAL SCIENCE

For other programs, see the appropriate Faculty or Department in this Calendar. Programs in Arts and Social Science are also offered in the Affiliated Colleges (Huron, Brescia and King's Colleges). For programs in Home Economics and Secretarial Science, see Brescia College; for the Program in Social Welfare, see King's College.

1.1 First Year Program

The purpose of the First Year Program is to offer one year of general education, and to prepare the student for his selection of a specific program. Thus the student can make a decision as to his future program on the basis of university work which may include subjects not available in secondary school. On the successful completion of the First Year General Program, the student is eligible to register in the second year of one of the Three-Year Programs or the second year of one of the Honors Programs.

Completion of first year Arts, Science, or Social Science may also be the first step in proceeding to programs in the following Faculties or Schools:

—SCHOOL OF BUSINESS ADMINISTRATION: admission into Year III of the Honors BA Program follows two years of a three or four year program in Arts, Science or Social Science.

—FACULTY OF DENTISTRY: admission to Year I of the four year program leading to the DDS degree follows two years of university study. A student who intends to study Dentistry will normally apply for admission to First Year Science.

—FACULTY OF LAW: admission to Year I of the three year program leading to the LLB degree follows two years of university study. A student who intends to study Law will normally apply for admission to First Year Arts or First Year Social Science.

—FACULTY OF MEDICINE: admission to Year I of the four year program in the Faculty of Medicine normally follows two years of university study. A student who intends to study Medicine will normally apply for admission to First Year Natural Science.

—PROGRAM IN COMMUNICATION DISORDERS: admission to Year II of the program leading to the B.Sc. (CD) degree follows First Year Science or First Year Social Science.

—FACULTY OF PHYSICAL EDUCATION: admission to Year II of the program leading to the BA degree in Physical Education follows First Year Arts Science or Social Science.

—PROGRAM IN PHYSICAL THERAPY: admission to Year II of the program leading to the B.Sc. (PT) degree follows First Year Arts, Science or Social Science.

First Year students should note carefully the prerequisites for the Program in which they may wish to proceed in subsequent years.

1.2 Course Requirements

The Faculties of Arts, Science and Social Science offer programs leading to the BA or Bsc Degree. A student can proceed from the Common First Year in one of the following programs:

1.21 Fifteen Course Program - Degree of Bachelor of Arts

Five full (or equivalent) courses selected from those numbered 1 to 29 must normally be attempted before progression to senior courses (numbered 30 or above) can be authorized. Five courses from 1 to 29 and including courses from at least two of the faculties of Arts, Science or Social Science, with no more than one course from each subject, must be selected.

With the permission of the Dean of the Faculty in which the student is registered, one course may be selected numbered 30 or higher in the first five attempts; if a course numbered 30 or higher is selected with the permission of a Dean in the first five full (or equivalent) courses attempted, a fifth course numbered 1 to 29 must be successfully completed subsequently.

The fifteen courses of the program must include a minimum of seven full (or equivalent) senior courses, and may not include more than eight full (or equivalent) courses from any one subject.

Ten of the fifteen courses must be from the Faculties of Arts, Science and Social Science.

An area of concentration may be selected after prerequisites have been completed. The Department of the subject selected will specify the four senior courses required to fulfill the area of concentration.

1.22 Fifteen Course Program - Degree of Bachelor of Science

Five full (or equivalent) courses selected from those numbered 1 to 29 must normally be undertaken before progression to senior courses (numbered 30 or above) can be authorized. At least two of the five courses must be selected from those offered by at least two of the Faculties of Arts, Science and Social Science. No more than one course may be selected from any one subject in the first five attempts.

With the permission of the Dean of the Faculty of Science, one course may be selected numbered 30 or higher in the first five attempts; if a course numbered 30 or higher is selected with the permission of the Dean in the first five full (or equivalent) courses attempted, a fifth course numbered 1 to 29 must be completed successfully subsequently.

The fifteen courses of the program must include a minimum of eight full (or equivalent) senior courses, at least ten full (or equivalent) courses offered by the Faculty of Science, and a minimum of two courses from outside the Faculty of Science.

An area of concentration approved by the Dean of Science and including at least four senior courses must be elected after prerequisites have been completed. The Department of the subject or the Departments of the area of concentration should be consulted prior to the selection of courses.

1.23 Four-Year Honors Programs for the Degrees of BA or BSc in the Faculties of Arts, Science, Social Science and Physical Education

Students in the Arts, Science and Social Science Programs are not registered in specific honors programs during their first year at this University.

First Year

Students in the Common First Year are not registered in specific honors programs. There are specific requirements for admission to the second year of all four-year Honors Programs based upon the courses selected and the standing obtained in the first year.

The Ministry of Education accepts a degree in an Honors Program as the academic qualifications for a High School Assistant's Certificate, Type A, for teaching in the elementary and secondary schools of Ontario.

A student expecting to enter an Honors Program should carefully consider the requirements of that program before selecting his first year courses.

In all years of all Honors Programs, options must be approved by all departments concerned.

1.24 Academic Electives Program

Ontario Scholars and other students demonstrating outstanding academic potential, who are applying for full-time admission to First Year in the Faculties of Arts, Science or Social Science, are eligible to enter the Academic Electives Program.

The program allows these students, with the Dean's approval in consultation with the departments concerned, to elect their own program of studies.

Admission to the Program shall be granted by the Dean of the Faculty designated by the applicant. The Dean shall appoint an advisor from among his faculty members for each student registered in his Faculty.

Selection of each course in the Program shall require the approval of the Chairmen of the Undergraduate or Curriculum Committee of the appropriate departments.

Achievement of an "A" average in a minimum of five courses per session is necessary for progression in the Program. The privileges of the Program shall be withdrawn upon transfer to another undergraduate program.

Degree Requirements:

(i) BA (General, without designation) with a minimum of fifteen courses of which no more than five are 20 level courses.

(ii) BA or BSc (General, with designations in an area or areas of concentration) with a minimum of fifteen courses, of which no more than five are 20 level courses.

(iii) BA or BSc (Honors, without designation) with a minimum of twenty courses of which fifteen must be honors courses.

(iv) BA or BSc (Honors, with designation in one or more areas of concentration) with a minimum of twenty courses of which fifteen must be honors courses.

Each Affiliated College may offer an Undergraduate Academic Electives Program leading to a BA degree under the same conditions. Admission to the Program shall be granted by the Dean or Principal of the Affiliated College in consultation with the Dean of the appropriate University Faculty.

2.0 ACADEMIC STANDING

2.1 Attempts:

An attempt is a course registration. Failure to cancel a course registration formally with the Office of the Registrar prior to the final Add/Drop date of the session will constitute an attempt.

2.2 Grade Point Scale:

Grade Points are assigned for achievement in courses as follows:

Mark Range	Grade Range	Grade Points	
		Full Courses	Half Courses
90 - 100	A+	5	2.5
80 - 89	A	4	2.0
70 - 79	B	3	1.5
60 - 69	C	2	1.0
50 - 59	D	1	0.5
Below 50	F	0	0

2.3 Explanation of Examination Report Comments:

DNW Did not write final examination.
DRP Dropped after final date for dropping a course without penalty.
FTW Failed term work.
INC Grade not received.

3.0 EXAMINATIONS

Performance in the work of all courses is evaluated by written or oral examination, or by term or other work. The form of evaluation is at the discretion of the Department (or Faculty) offering the courses.

The regular periods for written examinations are April/May for courses offered in the Fall/Winter Session and mid-August for courses offered in Summer Session.

The privilege of examination in the work of a course may be withdrawn for unsatisfactory lecture (or laboratory) attendance or for continued poor term work.

Comprehensive examinations may be required for some Honors Programs at the end of the final year. They may be written or oral, or a combination, and are in addition to examinations in the courses of the Programs.

3.1 Deferred Examination

The Dean of a Faculty may grant the privilege of writing a deferred examination to a student unable to write an examination in the regular period. A deferred examination is normally written in an examination period, and may be written only at the University or an Affiliated College.

3.2 Special Examinations

A special Examination is any examination other than the regular examination, and it may only be offered with the consent of the Department concerned and with permission of the Dean.

Special examinations may be written only at the University or an Affiliated College. The examination fee is $15.

3.3 Supplemental Examinations

Supplemental Examination privileges are offered only in the Preliminary Program at Brescia College, or in Undergraduate Courses offered by the Faculties of Engineering Science, Dentistry, Law, Medicine, and then only in exceptional circumstances.

3.4 Failure to Appear at Examinations

A student who fails to appear for an examination at the time set in the timetable will not be allowed to write the examination thus missed. He may, with the approval of the Chairman of the Department concerned, petition his Dean for standing, or permission to write a special examination. Petitions will be entertained only when they are submitted on compassionate grounds with supporting documents.

3.5 Aegrotat Standing

Aegrotat standing is the granting of credit for a course where the required examination was not taken. The credit shall be a mark/grade based on evaluation of achievement in the term work of the course.

Aegrotat Standing may be granted only for a student who has been unable to take the required final examination for medical or compassionate reasons.

A request for Aegrotat Standing must be submitted to the Dean of the Faculty/School of registration, normally before the end of the regular examination period. The application must be accompanied by documents supporting the request. The Dean may grant Aegrotat Standing on the recommendation of the Instructor or Department concerned. It shall be denied if, in the opinion of the Dean and the Instructor or Department concerned, there is insufficient evidence on which to base a mark/grade. The Dean shall inform the student in writing, and the Registrar, of his decision as soon as possible.

If Aegrotat Standing is awarded, the student's record shall show the mark/grade assigned only.

If Aegrotat Standing is not granted, a student may petition his Dean for the privilege of writing a Deferred Examination.

4.0 REQUIREMENTS FOR PROGRESSION: ELIGIBILITY FOR FURTHER REGISTRATION:

4.1 Three Year BA and BSc Programs:

Grade points and Attempts are used to determine eligibility for progression.

A Grade Point Total of at least six must be accumulated in the first five full (or equivalent) courses attempted.

A Grade Point Total of at least fourteen must be accumulated in the first ten full (or equivalent) courses attempted.

In any event, a student must complete the requirements for graduation in the General BA or BSc Program within the first 20 full or equivalent courses attempted (including repeated courses).

When a student has attempted four courses, and the Grade Point Total is five or less, registration in an ensuing session for more than three courses (on a full-time intramural basis) must be authorized by the Dean of the Faculty in which he proposes to register.

When the number of courses attempted in the current academic session; plus the total number of prior attempts, exceeds five but does not reach ten, the Grade Point Total for determining eligibility for further registration shall be calculated on the basis of the courses previously attempted, plus the course(s) of the current session, in a manner most advantageous to the student to reach five attempts with a minimum of six grade points.

When the number of courses attempted in the current academic session, plus the total number of prior attempts, exceeds ten, the Grade Point Total for determining eligibility for further registration shall be calculated on the basis of the courses previously attempted, plus the course(s) of the current session, in a manner most advantageous to the student to reach a total of 10 attempts with a minimum of 14 gradepoints.

No student may register for more than a total of 20 course attempts prior to fulfilling the basic requirements for graduation (15 passes, with an average of 60%). In exceptional circumstances, further attempts may be authorized by the Dean of the Faculty concerned, but only if the cumulative average on successful attempts is at least 60 percent.

4.2 Honors Programs - Admission to Second and Subsequent Years

A student will be automatically accepted if he has an average of at least 70 percent with no grade of less than 60 percent in the courses listed as principal courses by the Department(s) of the subject(s) in which he is specializing. He must also have a passing grade in each of the courses listed as subsidiary courses by the Department(s) concerned.

A student with an average of 60 to 69 per cent in the principal courses of his Honors Program, and a passing grade in each of the subsidiary courses, may be accepted by special permission of the Department(s) concerned.

A student who passes all courses in the Fourth Year of an Honors Program for the degree of Bachelor of Arts or Bachelor of Science and satisfies all other requirements for graduation, but fails to qualify for an Honors degree, shall be awarded a BA or BSc degree without designation. Such a student may write a subsequent examination in order to qualify for an Honors degree.

If a student fails to progress in an Honors Program, he may transfer to, and must meet the requirements of the General Program.

4.3 Other Categories of Progression

4.31 Progression on Readmission (following withdrawal for unsatisfactory standing):

In fifteen-course programs offered by the Faculties of Arts, Science, Social Science and the Affiliated Colleges

(a) The total number of "course attempts" permitted shall not exceed:

(i) 23 attempts, where the total number of courses still to be completed at the time of readmission is 10 to 15.

(ii) 22 attempts, where the total number of courses still to be completed at the time of readmission is 5 to 9.

(iii) 21 attempts, where the total number of courses still to be completed at the time of readmission is 1 to 4.

(b) a Grade Point Total of eight (8) must be accumulated in the first five full courses or equivalent, that are attempted following readmission.

4.32 Progression following Admission with Advanced Standing

(a) In addition to courses passed, all courses attempted at another University in which pass standing was not obtained will be counted in determining the total number of attempts allowed on admission to complete the minimum requirements for graduation.

(b) A Grade Point Total of eight must be accumulated in the first five full (or equivalent) courses attempted at The University of Western Ontario.

Note: A student granted advanced standing, to be eligible for graduation, must obtain an average of 60 percent or higher on the work completed at this University.

5.0 GENERAL ACADEMIC REGULATIONS

5.1 Term Work

Term work in a course will not be credited to a student beyond the academic session in which the course is taken.

5.2 Courses and Credits

5.21 Full and Half Courses

Two half courses are the equivalent of one full course in undergraduate programs, whether or not they have been taken in the same subject.

Half courses identified as "a" shall be offered in the intramural first term, and those identified as "b" shall be offered in the intramural second term. Intramural registration in half courses (both "a" and "b") must be made at the Fall Registration.

Prerequisites for half courses, where specified, shall be observed in the same manner as for full courses.

5.22 Course Load

The normal full-time course load in any year of the Fifteen-course BA or BSc Program is five. One additional course may be undertaken with the consent of the Dean of the Faculty in which the student is registered.

The number of half courses, in relation to a normal course load, is limited to five in each of the Fall and Winter terms, except with the permission of the Dean of the Faculty of registration.

5.23 Extra Courses

The normal course load in any year of the 15 course B.A. and B.Sc. Programs if FIVE full (or equivalent) courses but one additional full (or equivalent) course may be included in any academic year with the consent of the Dean of the Faculty in which the student is registered.

The number of half courses in relation to a normal course load, shall be limited to five in each of the Fall and Winter Terms, except with the permission of the Dean of the Faculty of registration.

5.24 Prerequisite for Senior Courses

A First Year student who has successfully completed an introductory course at the University of Western Ontario, or its equivalent elsewhere, will be permitted to enroll in a senior course upon the written recommendation of the Department concerned, and with the written approval of the student's dean.

5.25 Duration of Retention of Course Credit

Where a department recognizes a course as fulfilling prerequisite requirements for progression, course credit may be granted regardless of the year in which prior study was completed, unless a department requires the repetition of a course prior to granting permission to progress in a subject. In that case, no credit is granted for the course earlier completed.

5.26 Substitutions

A student may substitute for a prescribed course only with the consent of the Chairman of the Department of his Honors program or area of concentration, and the written approval of the Dean of his Faculty of registration. All substitutions must conform to the basic requirements as laid down by the Senate.

5.3 Residence Requirements

At least ten of the full (or equivalent) courses must be completed from those offered by The University of Western Ontario. This requirement does not apply to students admitted with advanced standing.

5.4 English Language Proficiency

Any student who shows an inadequate command of spoken and written English must improve his style until his work satisfies his instructor.

6.0 REQUIREMENTS FOR GRADUATION:

6.1 15 Course BA Program:

A minimum average of 60 percent is required in the fifteen full (or equivalent) courses completed for graduation.

6.2 15 Course BSc Program:

A minimum average of 60 percent is required in the fifteen full (or equivalent) courses completed for graduation.

A minimum average of 60 percent is required in the full (or equivalent) courses completed for the area of concentration.

6.3 Honors Programs:

A student will automatically graduate if he has a grade average of at least 60 percent in the principal courses of the Fourth Year, and a passing grade in all subsidiary courses.

A student who has a graduating average of at least 60 percent and a passing grade in all subsidiary courses, but whose grade average in the principal courses of the Fourth Year falls below 60 percent may graduate with an Honors degree only on the recommendation of the department(s) concerned.

6.4 Graduation Following Admission With Advanced Standing:

Achievement of a minimum overall average of 60 percent is required in the courses undertaken at this University.

Students admitted with advanced standing must complete a minimum of five full (or equivalent) senior courses (numbered 30 or higher) to graduate, as well as completing specific requirements in their particular program of registration.

This regulation may be waived by the Dean, on the recommendation of the Educational Policy Committee of the Council of his Faculty.

6.5 All Programs:

Each student expecting to graduate is required to file an Application to Graduate with the Office of the Registrar in the year they expect to graduate.

Applications by students who expect to graduate at the Spring Convocation must be filed by March 1st of each year, and by those who expect to graduate at the Autumn Convocation, by August 1st of each year.

7.0 ACADEMIC RIGHTS OF STUDENTS: PETITIONS AND APPEALS

7.1 Definitions

A petition is "a request that a regulation be waived on compassionate grounds or because of extenuating circumstances".

An appeal is "a request that a grade on a particular piece of work, or a final standing in a course or program, be changed, on grounds provided by the individual appealing".

7.2 Procedure

Each step of the petition and appeal procedure shall be completed within a reasonable time. (An appeal must be filed with the department concerned within six (6) weeks following the date of issuance of an examination report).

A petitioner or appellant should have completed all stages of the Appeal process prior to applying to the Senate Review Board (Academic). This means that in the case of an appeal, the individual must have appealed to and been unsatisfied by the relevant instructor, the Chairman of the Department, and the Dean of the Faculty in which the course is offered. In the case of a petition, the petitioner must have requested relief from and been unsatisfied with the response of the Dean of the Faculty. Normally, the Dean of the Faculty in which the petitioner is registered will be the relevant Dean; however, if the petition refers to a regulation related to a specific course, the relevant Dean will be the Dean of the Faculty which offers that course.

In summary, the stages of the appeal or petition processes are:

Appeal Process	Petition Process
1. Instructor	1. Dean
2. Department	2. Senate Review Board (Academic)
3. Dean	
4. Senate Review Board (Academic)	

The Senate Review Board (Academic) is the ultimate body to which students may appeal academic decisions affecting them. It hears the application of students appealing to the Senate against prior rulings of Deans and Faculty Councils relating to petitions and appeals. Further appeals of a procedural nature may be considered directly by the Chairman of Senate.

The petitioner or appellant may appear before the SRBA with or without counsel or by agent. The right to counsel is accorded only at the level of the SRBA. Cost of legal counsel shall be borne by the party concerned unless the final tribunal makes an order as to costs.

E FEES

1.0 A NOTE ON FEES

Fees paid by students, commonly referred to as "tuition fees", consist of

(a) the basic tuition fee, covering admission, instruction, use of library facilities, examinations, diploma and (unless specified) laboratory fees; this fee is tax deductible;

(b) Supplementary fees, assessed in certain courses or programs requiring specific apparatus, supplies or instructional aids, or assessed to recover costs to the university of certain services or procedures of registration or admission; these fees are not tax deductible;

(c) activity fee, covering specific extra-curricular activities or services such as athletics, student government, health services, the University Community Centre, etc.; these fees are not tax deductible.

2.0 UNDERGRADUATE FEES

Faculties of Arts, Science, Social Science, Physical Education and the School of Business Administration		$648.50
Faculty of Engineering Science	1st year	$648.50
	2nd, 3rd and 4th years	$708.50
Faculty of Dentistry	not including instruments fee	$833.50
Faculty of Medicine		$833.50
Faculty of Nursing; Physical Therapy, Occupational Therapy and Communication Disorders Programs in the Faculty of Medicine		$623.50
Faculties of Music and Law		$658.50

(The above fees include a $60 non-academic charge for the University Community Centre, the University Students' Council, Athletics and Health Services. A tax certificate for the remainder will be available by the last day of February each year.

3.0 OTHER FEES (INCLUDING ACTIVITIES FEE)

Summer School and Extension	per full course $125.00
Correspondence	per full course $125.00
Non-Credit	per full course $ 60.00

4.0 PAYMENT OF FEES (SUBJECT TO CHANGE)

A student who registers for 3½ courses or more shall be considered a full-time student and will pay full fees.

1st term fees are due and payable on or before registration day. Fees can be paid in two installments. 2nd term fees are due and payable on or before the first day of the second term, without further notice from the University. The second installment includes a deferred charge of $5.00.

A student who fails to comply with the above regulations may have his registration cancelled as of the date on which the unpaid fees were due.

5.0 OTHER CHARGES

Late registration fee	$25.00
Withdrawal during registration week (including transfer to Affiliated College) (minimum penalty)	$50.00
Supplemental examination	$10.00
Supplemental examination at an outside centre	$15.00
Special examination	$15.00
Transcript of academic record	$1.00

Notes:

1) Other fees on request
2) The Board of Governors reserves the right to amend fees after the printing of this list.
3) Except by permission of the Dean of his Faculty and the Comptroller of the University, a student may not attend lectures or examinations, nor be recommended for any degree or diploma until tuition fees, fines and other accounts owed to the University are paid.

6.0 ACADEMIC SANCTIONS

In instances of non-payment of any portion of prescribed fees and of delinquency in the return or replacement of University property on loan, the University shall

(a) not issue a Grade Report

(b) not issue a Permit to Register

(c) not issue a transcript or degree diploma

(d) not permit further registration.

Moreover, the above prohibitions shall be in force until such time as indebtedness to the University has been cleared to the satisfaction of the University.

These same prohibitions shall apply for violation of Residence Understandings, provided that the Senate establish a Review Board.

7.0 TRANSCRIPTS

A transcript is a photocopy of your permanent academic record at this University, duly certified by the Registrar, and bearing the embossed seal of the University. It is considered to be "privileged information" and is available only upon the written request and payment of a fee by the student.

It is invariably required as one of the supporting documents for application to another University; Graduate School; Canada Council, etc., and commonly requested by prospective employers.

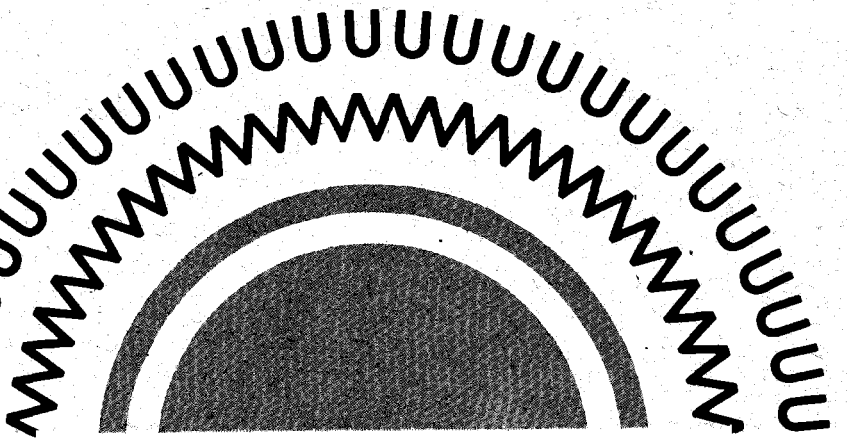
Request for Transcript forms are available from the Enquiry Desk, Office of the Registrar, (Room 112, Stevenson Hall). Since official transcripts must be mailed directly from the Registrar to the institutions designated by the student, you must provide their addresses. Unofficial transcripts are issued by mail to students, upon request, for their own use.

Rates:

One copy:	$1.00
Two copies:	$2.00
Three copies:	$2.25

(25¢ for additional copies on the same order)

Faculty of Arts



FACULTY OF ARTS

Dean
John Gordon Rowe, SB Harvard; BD Episcopal Theological School, Cambridge, Mass.; MA, PhD Toronto; DD Huron College
Assistant Dean
Graham Stewart Rose, BSc, PhD Birmingham
Academic Counsellor
Allen, R. L. BA, MA Mount Allison; LLD UWO

PROGRAMS

GENERAL PROGRAMS

The Faculty of Arts offers three year Programs leading to a BA degree with an area of concentration in Classical Studies, English, Fine Art, French, German, Greek, Italian, Latin, Philosophy, Russian and Spanish.

HONORS AND COMBINED HONORS PROGRAMS AND COMBINATIONS

The Faculty of Arts offers four year Programs leading to an Honors BA. Honors programs in a single subject are designed for students with a special interest in that subject, and provide them with the opportunity to concentrate their work in a particular field. Each program introduces students to the subject as a whole, and gives them some degree of mastery of it. A minimum of fifteen courses (including both principal courses and options) is required in the three senior years. Such programs prepare students for the Ontario High School Assistant's Certificate, Type A, in the principal subject, as well as for admission to graduate work in the subject.

Each honors program has a structure established by the Department concerned. Since there is often choice among the principal courses and since, in general, options are chosen by the student (in consultation with the Department), honors programs are flexible enough to permit a variety of patterns within the regulations outlined above. The following patterns are two examples:

(a) A program of courses which will lead to an Honors Degree in one subject supported by related courses in other subject. A student may, for instance, take an Honors Degree in English or in French, and in his options concentrate on, say, the modern period, by taking courses in Contemporary Literature, Modern Drama, Modern History, Modern Art, Contemporary Philosophy, Current Topics in Economics, Contemporary Science, and so on.

(b) A program of courses which will lead to an Honors Degree in one subject supported by courses in other subjects which may or may not be related to the honors subject but which are of interest to the student.

Within the Faculty of Arts, any two of the following subjects may be studied in a Combined Honors program: English, Fine Art, French, German, Greek, Latin, Philosophy, Russian, and Spanish. A Combined Honors Program consists of a maximum of seven courses in each of the two subjects (excluding prerequisites at the 20 level), plus enough options to make up fifteen courses in the three senior years. Combined Honors programs involving a subject within the Faculty of Arts and a subject in another Faculty are also available, and are listed separately with the Departments concerned.

Combined Honors Programs provide students with the opportunity to do concentrated work in two subjects. These programs are more than the combination of two halves of a single honors program but less than the combination of two single honors programs. As such, a combined program may not qualify a student for graduate work in either principal subject without further course work at the honors level. These programs, in general, are accepted by the Department of Education of Ontario as the academic qualification for the High School Assistant's Certificate Type A, in the two principal subjects, but students should consult the Registrar at Althouse College of Education for specific requirements.

A combination of Honors courses in two subjects is also available in some departments which will permit a student to study both of them for the first two years at the honors level and, at the end of that period, to decide, after consultation with both of the Departments involved, to take an Honors Degree in one subject and the equivalent of a General Area of Concentration in the other, during the third and fourth years. This combination is possible within the Faculty of Arts and in a number of instances with Departments outside the Faculty. *Interested students should consult their departmental advisers.*

The Faculty of Arts wishes to encourage every student to find the total program of study which will satisfy his individual needs, but it can help him to work out such a program only when he seeks individual counselling. Both the Dean's Office and the Departments are ready to provide such counselling: it is up to the student to seek it.

DEPARTMENT OF CLASSICAL STUDIES

Talbot College

Chairman of Department: D. E. Gerber, BA, MA UWO; PhD Toronto.
PROFESSOR EMERITUS: Ralph; PROFESSORS: Gerber, Raymond; ASSOCIATE PROFESSORS: Avotins, Littlewood, Murison, Timothy; ASSISTANT PROFESSORS: *Broege, Crowther, Stanley-Porter;* LECTURER: Carbone.

FIFTEEN COURSE (GENERAL) PROGRAM AND COURSES

CLASSICAL STUDIES

(ability to read Greek and Latin not required)

The requirements for a concentration in Classical Studies in the Three-year *program consist of* Classical Studies 27 (or permission of the Department) and any four senior Classical Studies courses.

27. Classical Literature in Translation. A study of the development of literary genres in the Greek and Roman world, including prescribed reading of specimens of each type in translation, plus lectures and discussions on general background.
3 hours (lecture), - full course.

30. The Art of Prose. A study of the development of classical rhetoric, its influence on higher education and poetry, and the beginnings of stylistic literary criticism.
2 hours (lecture), - full course.

32a. Women in Classical Antiquity. The status of and attitudes towards women in Greece and Rome.
2 hours (lecture), - half course, first term.

33b. Classics and the Contemporary Scene. A study of various issues of social relevance to the modern world in the light of what the ancient Greeks and Romans felt about them.
2 hours (lecture), - half course, second term.

35. Greco-Roman Political Theory and Institutions. A study of the theories of leading classical writers on politics and their relationship with the institutions of various states of the Greco-Roman world.
2 hours (lecture), - full course.

37. Classical Mythology. A study of Greek and Roman mythology, with some reference to its influence in modern European literature.
2 hours (lecture), - full course.

39. Greek and Roman Religion. Greek, Roman and Christian contributions to the religious life of the classical world.
2 hours (lecture), - full course.

40. Greek History. A survey of the history of Greece from the Minoan and Mycenaean period to Rome's ascendancy.
2 hours (lecture), - full course.

41. Roman History. A survey of the history of Rome from its beginnings to the fall of the Western Empire.
2 hours (lecture), - full course.

43. Roman Law. The origin and substance of Roman Law and its application in the everyday life of the Roman world.
2 hours (lecture), - full course.

47. Classical Civilization. Greece and Rome, with emphasis on cultural and social life rather than political history.
2 hours (lecture), - full course.

48. Byzantine Civilization and Art. An examination of the essence of Byzantine civilization, the bridge between the ancient and the modern world. Approximately a third of the course will be devoted to art, the most obvious expression of the Byzantine genius.
2 hours (lecture), - full course.

GREEK

The requirements for a concentration in Greek in the Three-year program consist of Greek 20 and four senior (i.e. honors) Greek courses chosen by students in consultation with the Department Chairman.

2. Elementary Greek. An accelerated preparatory course for those who wish to begin the study of Greek at the University, and to have the possibility of proceeding directly to Greek 20.
4 hours (lecture), - full course.

10. Intermediate Greek. Selections from Freeman and Lowe, Greek Reader; Plato, "Crito"; composition, sight translation.
Prerequisite: Grade 12 Greek or Greek 2.
3 hours (lecture), - full course.

20. Advanced Greek. Plato, "Apology"; a play of Euripides; composition, sight translation.
Prerequisite: Grade 13 Greek, or Greek 10, or Greek 2 with permission of the Department.
3 hours (lecture), - full course.

LATIN

The requirements for a concentration in Latin in the Three-year program consist of Latin 20 and four senior (i.e. honors) Latin courses chosen by students in consultation with the Department Chairman.

2. Elementary Latin. An accelerated preparatory course for those who wish to begin the study of Latin at the University, and to have the possibility of proceeding directly to Latin 20.
4 hours (lecture), - full course.

10. Intermediate Latin. Selections from prose and poetry; composition and sight translation (Normally offered only at Brescia College, in Summer School, or by Correspondence).
Prerequisite: Grade 12 Latin or Latin 2.
3 hours (lecture), - full course.

20. Advanced Latin. Vergil, "Aeneid" IV; Pliny, Selected Letters; composition and sight translation.
Prerequisite: Grade 13 Latin or Latin 10, or Latin 2 with permission of the Department.
3 hours (lecture), - full course.

HONORS PROGRAMS AND COURSES

CLASSICS

Requirements for Admission. First Year 20, Latin 20 and one other course as principal courses, English and another modern language as recommended options.

After the First Year the program consists of six honors Greek courses, seven honors Latin courses (Latin 200, 250, 300, and any four others), Classical Studies 275, the Comprehensive Examinations (Greek 495 and Latin 495), and one free option.

LATIN AND GREEK

Requirements for Admission. First Year 20, Greek 2 or 10 and one other course as principal courses, English and another modern language as recommended options. The requirements for admission to Greek 20 must be completed by the beginning of the second year.

After the First Year the program consists of seven honors Latin courses (Latin 200, 250, 300, and any four others), Greek 20, 200, 250, 300, 350, Classical Studies 275, the Comprehensive Examinations (Latin 495 and Greek 495), and two free options.

LATIN

Requirements for Admission. First Year 20, Greek 2 (if taken), and one or two other courses as principal courses, English and another modern language as recommended options. If Greek 2 is not taken until the Second Year, the requirements for admission to Greek 20 must be completed by the beginning of the Third Year.

After the First Year the program consists of eight honors Latin courses (Latin 200, 250, 300, and any five others), Greek 2 or 10, 20, 200 and 250, Classical Studies 275, the comprehensive Examination (Latin 495), and two free options.

COMBINED HONORS PROGRAMS

Latin or Greek may be combined with English, Fine Art, French, German, Philosophy, Russian or Spanish in a Combined Honors Program.

Requirements for Admission. First Year Program (Arts, Science or Social Science) with Latin 20 or Greek 20 and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program, as detailed under the listing of the department concerned.

After the First Year the program consists of a total of at least fifteen courses: a minimum of six Latin courses (Latin 200, 250, 300, and any three others) or six Greek courses (Greek 200, 250, 300, 350, 400, 450), Classical Studies 275, the Comprehensive Examination in Latin (Latin 495) or Greek (Greek 495), the required courses in the second subject, as listed by the department concerned, and enough options to complete the total.

HONORS COURSES

CLASSICAL STUDIES

275. Greek and Roman History. (Offered by this Department but counts for History students as History course). A survey course emphasizing the 5th century B.C., 1st century B.C. and A.D., with introductory lectures on historical methodology and the Ancient Near East. (Students may not count for credit both Classical Studies 275 and either Classical Studies 40 or 41).
3 hours (lecture), - full course.

GREEK

200. Greek Epic. Selections from Homer and Hesiod.
Prerequisite: Greek 20.
3 hours (lecture), - full course.

250. Greek Prose I. Selections from Lysias and Demosthenes; composition and sight translation.
Prerequisite: Greek 20.
3 hours (lecture), - full course.

300. Greek Drama. One play each of Aeschylus ("Persae" or "Prometheus Vinctus"), Sophocles ("Oedipus Tyrannus" or "Antigone"), Euripides ("Hippolytus" or "Bacchae"), Aristophanes ("Frogs" or "Clouds").
Lectures on the theatre and the drama.
Prerequisite: Greek 200 or 250.
3 hours (lecture), - full course.

350. Greek Prose II. Selections from Thucydides and Plato's "Republic" (one term on each).
Prerequisite: Greek 250.
3 hours (lecture), - full course.

400. Greek Lyric and Hellenistic Poetry. Selections.
(Not offered 1973-74)
Prerequisite: Greek 200 or 300.
3 hours (lecture), - full course.

450. Greek Prose III. Selections from Herodotus and Aristotle.
(Not offered 1973-74)
Prerequisite: Greek 250.
3 hours (lecture), - full course.

495. Comprehensive Examination. A three-hour paper in sight translation of Greek authors, to be written in the final year.
This is the equivalent of a full course.

LATIN

200. Roman Personal Poetry. Lyric and Elegy (Selections from Catullus, Horace, Tibullus, Propertius, Ovid).
Prerequisite: Latin 20.
3 hours (lecture), - full course.

250. Roman Prose. Cicero, composition and sight translation.
Prerequisite: Latin 20.
3 hours (lecture), - full course.

300. Vergil. Selections from "Eclogues", "Georgics" and "Aeneid".
Prerequisite: Latin 20.
3 hours (lecture), - full course.

350. Roman Drama. One play each of Plautus, Terence and Seneca, with supplementary readings in translation.
Prerequisite: Latin 20.
2 hours (lecture), - full course.

375. Roman Historiography. Selections from Livy, Tacitus and other representative authors.
Prerequisite: Latin 20, Classical Studies 275, or permission of the Department.
3 hours (lecture), - full course.

400a. Roman Satire. Selections from Horace, Persius, Juvenal and Seneca.
Prerequisite: any two honors Latin courses.
3 hours (lecture), - half course, first term.

401b. Silver Age Epic. An examination of the genre of epic with readings from Lucan and other representative authors.
Prerequisite: Latin 300.
3 hours (lecture), - half course, second term.

450a. Roman Philosophical Prose. Selections from Cicero and Seneca.
Prerequisite: Latin 250.
2 hours (lecture), - half course, first term.

451b. Roman Philosophical Poetry.
Selections from Lucretius.
Prerequisite: Latin 200 or 300.
2 hours (lecture), - half course, second term.

475a. Selected Topics in Ancient History.
Prerequisite: Latin 375.
2 hours (lecture), - half course, first term.

476b. Roman Literary History and Criticism.
Prerequisite: Any four honors Latin courses or permission of the Department.
2 hours (lecture), - half course, second term.

477y. Latin Composition.
Prerequisite: Latin 250.
1 hour (tutorial), - half course, whole year.

495. Comprehensive Examination.
A three-hour paper in sight translation of Latin authors, to be written in the final year.
This is the equivalent of a full course.

DEPARTMENT OF ENGLISH

University College

Chairman of the Department: P. D. Fleck, BA, MA UWO; PhD Belfast
PROFESSOR EMERITUS: Klinck; PROFESSORS: Atkinson, Barker, Bates, Conron, Fleck, Graham, A. K. Hieatt, C. B. Hieatt, Rajan, Rans, Reaney, Sanborn, Woodman; ASSOCIATE PROFESSORS: Bandeen, Bolgan, Buckley, Chapin, Collins, Devereux, Hair, Kaula, Parker, Somerset, Stingle, Wilson; ASSISTANT PROFESSORS: Arnold, Auksi, Bieman, Brown, Dragland, Garber, Gaudet, Good, Hensley, House, Lundgren, McKay, Mellamphy, Redekop, Smith, Straulman, Surette, Tausky, Woodruff, Young; LECTURERS: Baker, Fox, Gedalof, Shroyer, Stanko, Walsh, Willis, Zezulka

ENGLISH LANGUAGE AND LITERATURE

Requirements for Admission

First Year Program with English 20, or English 24, or English 26, and French or a foreign language 20, 21, or 22, and one other course as the principal courses. For grades required for admission and progression, see page . Students who fail to qualify for automatic admission but who complete

the first year with an average of at least 60% in their principal courses, and at least 60% in English 20, 24, or 26 SHOULD APPLY to the Department for consideration.

Five courses constitute a normal load in each of Second, Third, and Fourth Years. Students who wish to take extra courses may do so, after consultation with the Department. In each of Second, Third, and Fourth Years, a student must take at least two honors English courses.

After First Year, the program consists of a minimum of nine honors English courses and six options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least one of: 320, 321

at least one of: 330, 331

at least one of: 340, 341

at least one of: 350, 360

at least two of: 370, 381, 382, 383

at least one of: 302, 332, 333, 342, 371

any two honors English courses not already chosen.

Additional honors or general English courses may be chosen as options.

English 495 (Comprehensive Examination) is required in Fourth Year in addition to the normal five-course load. Students must obtain a grade of at least 60% in this Examination before they may be admitted to an honors degree in English. A student who fails the examination may repeat it once only.

The Examination is held on the first Saturday in April and on the Saturday which ends the first week of lectures in the Fall term (mid-September). Students in the Fourth Year of the Honors English Language and Literature program must write the Examination in April, and may write it in September only if they fail the April Examination. The reading list and any other material on which the examination is based may be obtained from the Department of English.

ENGLISH AND DRAMA

Requirements for Admission

First Year Program with English 20, or English 24, or English 26, and French or a foreign language 20, 21, or 22, and one other course as principal courses. For grades required for admission and progression, see page . Students who fail to qualify for automatic admission but who complete the first year with an average of at least 60% in their principal courses, and at least 60% in English 20, 24, or 26 SHOULD APPLY to the Department for consideration.

Five courses constitute a normal load in each of Second, Third, and Fourth Years. Students who wish to take extra courses may do so, after consultation with the Department. In each of Second, Third, and Fourth Years, a student must take at least two honors English courses.

After First Year, the program consists of a minimum of twelve honors English courses and three options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of: 320 or 321; 330 or 331; 340 or 341

at least one of: 350, 360, 370

at least one of: 381, 382, 383

at least two of: 302, 332, 333

at least two of 402, 342, 371

Dramatics 303

any three honors English courses not previously chosen.

Additional honors or general English courses may be chosen as options.

English 495 (Comprehensive Examination) is required in Fourth Year in addition to the normal five-course load. Students must obtain a grade of at least 60% in this

Examination before they may be admitted to an honors degree in English. A student who fails the Examination may repeat it once only.

The Examination is held on the first Saturday in April and on the Saturday which ends the first week of lectures in the Fall term (mid-September). Students in the Fourth Year of the Honors English and Drama program must write the Examination in April, and may write it in September only if they fail the April Examination. The reading list and any other material on which the Examination is based may be obtained from the Department of English.

COMBINED HONORS PROGRAMS

Within the Faculty of Arts, English may be studied with Fine Art, French, German, Greek, Latin, Philosophy, Russian or Spanish in a Combined Honors Program.

Requirements for Admission

First Year Program (Arts, Science or Social Science) with English 20, or English 24, or English 26 and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program, as detailed under the listing of the department concerned. For grades required for admission and progression, see page . Students who fail to qualify for automatic admission but who complete the first year with an average of at least 60% in English 20, 24 or 26 SHOULD APPLY to the Departments for consideration.

After the First Year, a combined Honors Program consists of a total of at least fifteen courses: a minimum of six honors English courses, six or seven courses in the other principal subject, and two or three options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 320 or 321; 330 or 331; 340 or 341;

at least one of English 350, 360, 370;

at least one of English 381, 382, 383;

at least one of English 332, 333, 342, 371;

any honors English course not previously chosen.

For courses required in the other principal subject see the listing of the Department concerned.

Five courses constitute a normal load in each of Second, Third, and Fourth years. Students who wish to take extra courses may do so, after consultation with the Department. In each of these years, a student must take at least two honors English courses. Additional honors or general English courses and additional honors courses in the other principal subject may be chosen as options. Options are to be chosen in consultation with the Departments concerned.

ENGLISH AND HISTORY

Requirements for Admission

First Year Program with English 20, or English 24, or English 26 and any course in History 20 series and one other course as principal courses. For grades required for admission and progression, see page Students who fail to qualify for automatic admission but who complete the first year with an average of at least 60% in their principal courses, and at least 60% in English 20, 24 or 26 SHOULD apply to the Departments for consideration.

After the First Year, the program consists of a total of at least fifteen courses: a minimum of six honors English courses, six honors History courses, and three

options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 320 or 321; 330 or 331; 340 or 341;

at least one of English 350, 360, 370;

at least one of English 381, 382, 383;

at least one of English 332, 333, 342, 371;

any honors English course not previously chosen.

Second Year: The Department of History recommends the following courses: History 236; 231 or 234. Students are free to choose others from the 200 or 300 series.

Third Year: Recommended: History 335; one other course in the Honors History 300 series or, with the permission of the instructor, from the Honors History 300 or 400 series.

Fourth Year: two courses chosen from the Honors History 300 or 400 series.

Five Courses constitute a normal load in each of Second, Third, and Fourth Years. Students who wish to take extra courses may do so, after consultation with the Department. In each of these years, a student must take at least two honors English courses and two honors History courses. Additional honors or general English courses and additional honors History courses may be chosen as options. Options are to be chosen in consultation with the Department concerned.

COURSES

Detailed descriptions of the following courses may be obtained from the Department of English, University College, Room 173.

All courses in English scheduled for two hours may meet for additional hours at the discretion of the instructor.

20. General Literature and Composition. An introduction to the romance, ironic (or satiric), tragic and comic modes of literature.
3 hours, full course.

24. Forms of Fiction. An introduction to the study of a) a selection of fiction ranging from the Greek epic to the modern novel, including both short and longer forms; b) a variety of fictional modes and narrative techniques.
3 hours, full course.

26. Forms of Drama. An introduction to the study of (a) the main principles of dramatic art; (b) selected aspects of dramatic and theatrical history; (c) the major dramatic genres.
3 hours, full course.

GENERAL COURSES

These courses are for upperclassmen who wish to take English courses as options, but do not have English 20, or English 24, or English 26; for students in the Three-year Program in English who want a wider variety of senior courses (such students will also have taken English 20, or English 24, or English 26, and can therefore also choose to take Honors courses, or a combination of General and Honors courses); and for students in the Honors English programs who want a greater selection of subsidiary courses.

30. Comparative Literature. A course of reading in English or in English translations of some of the great books of Western civilization from Homer to Joyce with particular emphasis on the growth of epic, drama and fiction.
3 hours, full course.

31. Contemporary Literature. An introduction to the poetry and prose of the contemporary scene.
3 hours, full course.

32. Introduction to Linguistics. An introduction to the chief types of scientific study of language, designed primarily for the student who is either a native speaker of English or whose major field of study is English language and literature. Examples of various language types and systems are studied, with English as a constant point of reference.
3 hours, full course.

33. Children's Literature. Readings from significant books written for children, selected primarily for literary quality. Some attention will be given to the historic evolution of "Children's Literature" as a separate class, but the principal aim of the course will be to consider the nature and development of the two major genres: nonsense verse and romance.
3 hours, full course.

34. Fantasy, Science Fiction, and Other Forms of Romance. A study of such forms as fantasy, utopian literature, the gothic novel, and science fiction.
3 hours, full course.

35. The Literature of the Bible. A study of extensive readings in the prose and poetry of the Bible, including the Apocrypha, with supplementary readings in later literature. Attention will be given to genres, styles, structural and symbolic patterns, and the use of Biblical materials in later literature.
3 hours, full course.

36. Contemporary Drama. An introduction to the drama of the contemporary scene.
3 hours, full course.

37. The English Language. A study of the history of the language, dealing with changes in sounds, spelling, and grammar, leading to a detailed study of modern English.
3 hours, full course.

38. Canadian Literature and Culture. An introduction to as many images of our civilization as possible: poetry, prose fiction, social documentaries, autobiographies as well as Eskimo, French and Indian texts in translation. This material is informally related to our painting, music and films through the use of slides and tapes.
3 hours, full course.

Film 40. Film, 1895-1970. A study of the evolution of the cinema from 1895 to the present day. This survey is designed to acquaint the student with both technological and aesthetic developments in the medium through an analysis of the work of the major film-directors in their h historical and social perspective. In addition to lectures and tutorials, there will be one viewing of a film each week.
3 hours, full course.

Film 41. Contemporary Film.
Prerequisite: Film 40, or permission of the Department.
A study of contemporary film through an examination of the works of the major film-makers and of the aesthetic and technological influences on their works. In addition to lectures and tutorials there will be at least one viewing of a film each week.
3 hours, full course.

Film 42. Problems.
Prerequisite: Film 40 or 41, or permission of the Department.
3 hours, full course.

Speech 43. The Major Forms of Oral Discourse. For effective communication of ideas: Public Address with basic purposes; Group Discussion; Debate; Voice and Diction; Interpretative Reading.
2 hours, full course.
NOTE: Film 40, Film 41, Film 42, and Speech 43 cannot be credited as part of an area of concentration in English in the three-year BA Program.

HONORS COURSES

The following courses are available to any student regardless of program who has at least a C standing in English 20, or English 24, or English 26, or the permission of the Department.

300. The Novel.
3 hours, full course.

301. Criticism. A survey of the major critics and problems in terminology and practical criticism.
3 hours, full course.

302. Greek and Roman Theatre and Drama.
3 hours, full course.

303. Dramatics. Studies in the principles and theories of directing, acting and design.
2 hours lectures, 2 hours laboratory, full course.

320. Old English Language and Literature. With special emphasis on Beowulf.
3 hours, full course.

321. Chaucer and His Age.
3 hours, full course.

330. Literature of the Sixteenth Century. Excluding drama.
3 hours, full course.

331. Literature of the Seventeenth Century. Excluding drama.
3 hours, full course.

332. Shakespeare.
3 hours, full course.

333. Medieval to Jacobean Drama (1300-1642). Excluding Shakespeare.
3 hours, full course.

340. Literature of the Restoration and Early Eighteenth Century (1660-1727).
3 hours, full course.

341. Literature of the Eighteenth Century (1727-1790).
3 hours, full course.

342. The Drama: Restoration to Romantic.
3 hours, full course.

350. Literature of the Romantic Revival (1798-1832).
3 hours, full course.

360. Literature of the Victorian Period (1832-1900).
3 hours, full course.

370. Modern Literature (1890-1945).
3 hours, full course.

371. Modern Drama.
3 hours, full course.

381. Canadian Literature.
3 hours, full course.

382. Literature of the United States to 1885.
3 hours, full course.

383. Literature of the United States from 1885.
3 hours, full course.

401. Problems Course.
Prerequisite: English 20, or English 24 or English 26, and permission of the Department.
3 hours, full course.

402. Problems Course: Drama.
Prerequisite: English 20, or English 24, or English 26, and permission of the Department.
3 hours, full course.

403. Advanced Dramatics. Advanced work in directing, acting, and design.
4 hours, full course.

490. Thesis. Individual instruction in the selection of a topic, the preparation of materials, and the writing of a thesis. Students who wish to take this course must apply to Professor C. E. Sanborn, Chairman, Committee on Undergraduate Studies, Department of English. This course is restricted to students in Year Four of an Honors English Program.

DEPARTMENT OF FINE ART

Fine Art Building

Chairman: W. S. A. Dale, BA, MA Toronto; PhD Harvard
PROFESSOR: Dale; ASSOCIATE PROFESSOR: Hart; ASSISTANT PROFESSORS: Becker, Bonario, Cameron, De Kergommeaux, Fenwick, Handy; LECTURER: Ewen; LECTURER (PART TIME): Stubbs

FIFTEEN COURSE (GENERAL) PROGRAM

FIRST YEAR

Five courses from 1 to 29, including Fine Art 20 and at least one from the Faculties of Science or Social Science, with no more than one course from each subject.

SECOND AND THIRD YEARS

Ten courses, including at least seven seniors. A minimum of four, and a maximum of seven may be from the Fine Art Senior course series. At least two must be from art history, and at least two from studio practice.

GENERAL COURSES

20. Introduction to the Study of Art. An introduction to the formal and historical analysis of the visual arts, with particular reference to contemporary forms; studio exercises in the basic elements of design. Limited registration, based on an interview and portfolio.
2 hours lecture, 4 hours studio, full course.

21. Art History Survey. A chronological survey of Western Art, including architecture, painting and sculpture.
No prerequisite.
3 hours lecture, full course.

47 Canadian Art. Painting, sculpture, and architecture in Canada from the Primitives of New France through the Group of Seven to the present, as related to developments in Europe, the United States, and Mexico.
No prerequisite.
3 hours lecture, full course.

HONORS PROGRAM

Requirements for Admission

First Year Program (Arts, Science or Social Science) with Fine Art 20 and two other courses as principal courses.

SECOND YEAR

Principal Courses

Four courses from the Fine Art 200 series with at least one from art history and one from studio practice.

Subsidiary Course

One option selected in consultation with the Fine Art Department.

THIRD YEAR

Principal Courses

Four courses from the Fine Art 300 series, with at least one from art history and one from studio practice.

Subsidiary Course

One option selected in consultation with the Fine Art Department.

FOURTH YEAR

Principal Courses

Four full courses from the Fine Art 400 series, with at least one from studio practice and the equivalent of one course from art history.

Subsidiary Course

One option selected in consultation with the Fine Art Department.

COMBINED HONORS PROGRAMS

Fine Art may be combined with English, French, German, Greek, Latin, Philosophy, Russian or Spanish in a Combined Honors Program.

Requirement for Admission. First Year Program (Arts, Science or Social Science) with Fine Art 20 and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program, as detailed under the listing of the department concerned.

After the First Year the program consists of a total of at least fifteen courses: a minimum of seven Fine Art courses including at least two from art history and two from studio practice, the required courses in the second subject, as listed by the department concerned, and enough options to complete the total.

FINE ART PORTION OF COMBINED HONORS PROGRAM

SECOND YEAR

Principal Courses

Fine Art 220, 230 and 232

THIRD YEAR

Principal Courses

Two courses from the Fine Art 300 series

FOURTH YEAR

Principal Courses

One course from the Fine Art 400 series. One course from either the Fine Art 300 or the Fine Art 400 series.

HONORS COURSES

NOTE: Students in other Honors programs may take Senior courses in art history with the permission of the Department

220. *Contemporary Expression* I. The exploration of basic modes of visual expression in two and three dimensions, and the acquisition of skills in various media.
Prerequisite: Fine Art 20 and permission of Department.
4 hours studio, full course.

222. Basic Ceramics. A studio course in the creative use of clay.
Prerequisite: Fine Art 20 and permission of Department.
4 hours studio, full course.
(Not offered 1973-74)

224. Drawing I. Drawing from the live model, still life, landscape, etc., as an exercise in the perception and control of contour, volume and mass.
Prerequisite: Fine Art 20 and permission of Department.
4 hours studio, full course.

230. Ancient through Mediaeval Art. Architecture, sculpture, painting and minor arts from prehistoric times to the end of the 14th century.
Prerequisite: Fine Art 20 or 21, and permission of Department.
3 hours lecture, full course.

232. Renaissance Through Modern Art. Architecture, painting and sculpture in Europe and North America from the 15th century to the present day.
Prerequisite: Fine Art 20 or 21, and permission of Department.
3 hours lecture, full course.

310. Art Theory. An introduction to art theory and criticism, with particular reference to present-day art.
Prerequisite: Fine Art 20 or 21, and permission of Department.
3 hours lecture, full course.
(Not offered 1973-74)

320. Contemporary Expression II. A continuation of the three-dimensional aspect of 220, with greater emphasis on originality and quality.
Prerequisite: Fine Art 220 and permission of Department.
4 hours studio, full course.

321. Painting I. A continuation of related aspects of 220.
Prerequisite: Fine Art 220 and permission of Department.
4 hours studio, full course.

322. Figure Sculpture. Modelling from the live model as an exploration of the formal and expressive qualities of the human figure.
Prerequisite: Fine Art 220 or 224, and permission of Department.
4 hours studio, full course.

323. Print-Making I. The expressive use of printing media, including silk-screen and relief.
Prerequisite: Fine Art 220 and 224 and permission of Department.
4 hours studio, full course.

324. Drawing II. Continuation of Fine Art 224 to an advanced level.
Prerequisite: Fine Art 224 and permission of Department.
4 hours studio, full course.

330. Classical Art and Archaeology. Architecture, sculpture, painting and minor arts of Greece and Rome from the Bronze Age to the reign of Constantine.
Prerequisite: Fine Art 230 or permission of Instructor.
3 hours lecture, full course.

331. Gothic Art. Architecture, sculpture, painting and minor arts in Northern Europe from the early 12th century to the end of the 14th.
Prerequisite: Fine Art 230 or permission of the Instructor.
3 hours lecture, full course.

332. Italian Renaissance Art. Architecture, painting and sculpture in Italy from Giotto to Titian.
Prerequisite: Fine Art 230 and 232, or permission of Instructor.
3 hours lecture, full course.

333. Baroque Art. Painting, architecture, and sculpture in southern and northern Europe in the 17th century.
Prerequisite: Fine Art 230 and 232, or permission of Instructor.
3 hours lecture, full course.
(Not offered 1973-74)

336. Modern Art. Architecture, painting, sculpture and graphic arts in Europe and North America since 1850.
Prerequisite: Fine Art 230 and 232, or permission of Instructor.
3 hours lecture, full course.

337. The Group of Seven. The rise of the national school of painting in Canada.
Prerequisite: Fine Art 230 and 232, or permission of Instructor.
3 hours lecture, full course.
(Not offered 1973-74)

338. Oriental Art. The art of China, Japan and India.
Prerequisite: Fine Art 20 or 21, and permission of the Department.
3 hours lecture, full course.
(Not offered 1973-74)

410. Museology. Seminar on the history and function of Art Museums

with practical exercises in curatorial duties.
Prerequisite: Permission of Department.
3 hours lectures, full course.

420. Contemporary Expression III. Advanced 3-dimensional projects.
Prerequisite: Fine Art 320 and permission of Department.
4 hours studio, full course.

421. Painting II. Advanced projects in painting.
Prerequisite: Fine Art 321 and permission of Department.
4 hours studio, full course.

423. Print-Making II. An advanced study of Print-Making media including intaglio and lithography.
Prerequisite: Fine Art 323 and permission of Department.
4 hours studio, full course.

424. Drawing III. Continuation of Fine Art 324 with greater emphasis on the development of a personal style.
Prerequisite: Fine Art 324 or permission of the Instructor.
4 hours studio, full course.

430a. and b. Selected topics in Ancient Art. Subjects to be announced.
Prerequisite: Fine Art 330 or permission of Instructor.
3 hours lecture, half courses; Fall and Spring terms.

431a. and b. Selected topics in Mediaeval Art. Subject to be announced.
Prerequisite: Fine Art 331 or permission of the Instructor.
3 hours lecture, half courses; Fall and Spring terms.
(Not offered 1973-74)

432a. and b. Selected topics in Renaissance Art. Subject to be announced.
Prerequisite: Fine Art 332 or permission of the Instructor.
3 hours lecture, half courses; Fall and Spring terms.

433a. and b. Selected topics in Baroque Art. Subject to be announced.
Prerequisite: Fine Art 333 or permission of the Instructor.
3 hours lecture, half courses; Fall and Spring terms.

436a. and b. Selected topics in Modern Art. Subject to be announced.
Prerequisite: Fine Art 336 or permission of the Instructor.
3 hours lecture, half courses; Fall and Spring terms.
(Not offered 1973-74)

DEPARTMENT OF FRENCH

University College.

Chairman: Dr. C. A. Venesoen, LèsL., DèsL. Laval.
PROFESSORS: Bush, Sanders, Torrens (Emeritus), Tuchmaier, Venesoen; ASSOCIATE PROFESSORS: Balsé, Creighton, Forsyth, Heller, Issacharoff, Jones, Walters; ASSISTANT PROFESSORS: Arnold, Atance, Baguley, Brunet, Davies, Gagnon, Holder, Ly, Ross, Saraydar, Vilquin, Youssef; LECTURERS: Bowker, Dupraz, Gann, Goldschlager, Holmes, Jones, Keypour, Kidd, Nardocchio, Vikar.

15-COURSE (GENERAL) PROGRAM AND COURSES

The required courses for a concentration in French in the Three-year program are: French 271, 290 and at least 2 of the following: French 232, 378, 381 (strongly recommended), 396, 398

A student will normally proceed to a concentration in French with French 20 as a prerequisite, in the absence of which he may register only with the approval of the Department.

All courses are given in French unless otherwise stated.

COURSES

2. Intensive French. Grammar, composition, oral practice. This course is designed for students beginning French, or having a limited knowledge of French.
5 hours, tutorials, lab, full course.

10. Intermediate French. Grammar review, composition, translation, oral practice. (One hour per week in the language laboratory may be required).
Prerequisite: Grade 12 French or by permission of the Department.
3 or 4 hours, tutorials, full course.

20. French Language and Literature. This is the basic Freshman course in French, providing training in Language and Literary studies.
Prerequisite: French 10, Grade 13 French, or by permission of the Department.
4 hours, lectures, tutorials, lab, full course.

30. The French Novel. A study of typical examples of the novel, taken from French literature of the seventeenth through the twentieth centuries.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course. (NOT offered in 1973-74)

31. Language. Grammar, composition, translation, oral practice. (One hour per week in the language laboratory may be required).
Prerequisite: French 20 or by permission of the Department.
3 or 4 hours, lectures, tutorials, full course.

32. French Civilization. (See French 232).

34. French Drama. A study of typical examples of French dramatic literature of the seventeenth through the twentieth centuries.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course. (NOT offered in 1973-1974)

36. French Poetry. A study of representative French poems from the nineteenth century to the present.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course. (NOT offered in 1973-1974)

38. French-Canadian Literature. A study of major French-Canadian literary works.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course.

39. Modern French Literature in Translation. A study of French novels and plays. This course is taught in English.
3 hours, lectures, tutorials, full course.

40. Currents of Thought in Modern France. A study of major French authors of the twentieth century who have made a significant and durable contribution to modern thought. This course is taught in English, with French texts in translation.
3 hours, lectures, tutorials, full course.

41. Advanced Grammar and Composition. (One hour per week in the language laboratory may be required).
Prerequisite: French 31 or by permission of the Department.
3 or 4 hours, lectures, tutorials, full course.

42. French-Canadian Civilization. A series of readings drawn from material concerned with French-Canadian Civilization, and discussion on them.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course.

43. Commercial French. Translation of commercial correspondence, reading.
Prerequisite: French 31, 271 or by permission of the Department.
3 hours
lectures, tutorials, full course.

45. Scientific French. Reading of Scientific French from textbooks and journals, supplemented by individual readings in the special field of study of each student.
Prerequisite: French 2, 10 or Grade 13 French
1 hour, lecture, tutorial; half-course.

HONORS PROGRAMS AND COURSES

FRENCH LANGUAGE AND LITERATURE

Requirements for Admission

First Year Program (Arts, Science or Social Science) with French 20 and two other courses as principal courses. For grades required for admission and progression, see page. Options are to be chosen in consultation with a Departmental adviser.

SECOND YEAR

Principal Courses French 232, 271, 290

Subsidiary Courses Two Options

THIRD YEAR

Principal Courses French 378, 381, 396, 398

Subsidiary Course One Option

FOURTH YEAR

Principal Courses French 400, 410, 450, 491, 495*

*Comprehensive Examination in the Spring

Subsidiary Course One Option

COMBINED HONORS PROGRAMS

Within the Faculty of Arts, French may be combined with English, Fine Art, German, Greek, Latin, Philosophy, Russian or Spanish in a Combined Honors Program.

Requirements for Admission: First Year 20, and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program as detailed under the listing of the department concerned. For grades required for admission and progression, see page .

After the First Year, the program consists of a total of at least fifteen courses, a minimum of seven honors French courses, six or seven courses in the other principal subject, and one or two options. The French courses must be taken as follows:

Second Year

French 271, 290

Third Year

Either Two courses: 381 and 378 or 398 or Three courses: 381 and two of 378, 396, 398

Fourth Year

French 491, 495 and one or two of 400, 410, 450 and 396 (if not previously taken).

COMBINATIONS

French may be taken in combination with other subjects to allow the student to take an Honors Degree in one subject and the equivalent of a General Degree Area of Concentration in the other.

French may be combined with such subjects as English, Fine Art, German, History, Journalism, Latin, Music, Philosophy, Political Science, Russian, Spanish and Italian.

In all these combinations the French Department requires that French 271 and French 290 be taken in the second year. For required second year courses in the other subject of the combination, the student should consult the Department concerned.

In the third and fourth years, should the student opt for Honors French with an Area of Concentration in the other subject, his French courses will be the third and fourth year principal courses in the French Language and Literature Program. Should the student choose to take Honors in the other subject and an Area of Concentration in French, the required French courses will be two from the following: French 232, 378, 381 (strongly recommended), 396, 398.

Students interested in registering in combinations should consult their Departmental Advisers in both Departments before choosing their courses.

HONORS COURSES

All students in Honors Programs will take a comprehensive examination (French 495) at the end of their final year.

232. French Civilization. A study of modern France, her historical background and political, economic, social and cultural development.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course.

271. Language. Grammar, composition, oral practice, phonetics, history of the French Language. (One hour per week in the language laboratory may be required). This course is required for a concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 or 4 hours, lectures, tutorials, full course.

290. Introduction to French Literature. A study in depth of some major French texts, with training in the skills of literary analysis. This course is required for a concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 hours, lectures, tutorials, full course.

378. Literature of the 17th and 18th Centuries. Options on selected authors and texts.
Prerequisite: French 290.
3 hours, lectures, tutorials, full course.

381. Language. Grammar, composition, translation and oral practice. (One hour per week in the language laboratory may be required). This course is recommended for a concentration in French.
Prerequisite: French 271.
3 or 4 hours, lectures, tutorials, full course.

396. History and Structure of the French Language. Historical phonetics and Grammar, Linguistics and

Grammatical Systems of modern French.
Prerequisite: French 271.
3 hours, lectures, tutorials, full course.

398. Literature of the 19th and 20th Centuries and of French Canada. Options on selected authors and texts.
Prerequisite: French 290.
3 hours, lectures, tutorials, full course.

400. Senior Seminars and Essay. Selected topics and critical essay.
Prerequisite: French 378 or 398.
3 hours, lectures, tutorials, full course.

410. Supplementary Studies. Free choice of options on selected authors and texts not already chosen by the student for study in French 378, 398 and 450.
Prerequisite: French 378 or 398.
3 hours, lectures, tutorials, full course.

450. Literature to 1600. Options on selected authors and texts.
Prerequisite: French 378, 396 or 398.
3 hours, lectures, tutorials, full course.

491. Language. Composition, translation and oral practice; introduction to comparative stylistics.
Prerequisite: French 381.
3 or 4 hours, lectures, tutorials, full course.

495. Comprehensive Examination. An examination, written in French, which will test the student's knowledge of specific areas of French literature, plus a brief oral examination consisting of an "explication de texte". Further details on the material to be examined may be obtained from the office of the Department of French.

Department of German

University College

Chairman of Department: Professor R. M. Immerwahr, AB Swarthmore; MA Northwestern; PhD California (Berkeley).
PROFESSOR EMERITUS: Kalbfleisch; PROFESSORS: Immerwahr, Tracy; ASSOCIATE PROFESSORS: Anderson, Schluetter, Spencer; ASSISTANT PROFESSORS: Calbert, Purekevich; LECTURER: Hess; INSTRUCTOR: McConnell.

CONCENTRATION IN GERMAN

The requirements for a concentration in German in the three-year program consist of 4 senior courses in German. These may be one language course (e.g. 291, 391 or 491) and three literature courses, or two language and two literature courses.

Courses on German literature in translation (e.g. 36 and 39) may not be counted among the requirements for a concentration in German. The courses must be chosen in consultation with a departmental Advisor. A student will normally proceed to a German concentration with German 20 or 22 as the prerequisite, in the absence of which he may register in a German concentration only with the approval of the Department.

GENERAL COURSES

1. Introductory German. Study of the sounds and structure of the language. Intensive oral and written practice. Readings in prose and poetry.
3 hours, full course.

2. Intensive German for Beginners. A more intensive course than German 1. Designed for students who begin German at the University and who

contemplate making German their subject of concentration or desire to enter the German Honors courses.
3 lecture hours, 2 laboratory hours, full course.

5. Elementary Scientific German. The elements of German grammar and readings in scientific German.
3 hours, full course.

10. Intermediate German. Further study of the structure and idiom of the language. Readings in modern prose and poetry. Oral and written practice.
Prerequisite: German 1 or permission of the Department.
3 hours, full course.

20. German Language and Literature. Survey of German literature, conducted largely in German, with further work on the language.
Prerequisite: Grade 13 German, or 2 or 10 or permission of the Department.
3 hours, (plus optional lab hours), full course.

22. German Conversation and Contemporary Readings. A course designed to increase proficiency in the use and comprehension of spoken and written German. Systematic oral practice and discussion of contemporary texts. Conducted in German. This course is a first year alternative to German 20.
Prerequisite: as for German 20.
3 hours, (plus optional lab hours), full course.

30. Shorter Prose Fiction from Goethe to the Present.
Prerequisite: German 20 or permission of the Department.
3 hours, full course.

35. Intermediate Scientific German. The reading of scientific works in German and a review of basic grammar as an aid to reading.
Prerequisite: German 1 or German 5 or permission of the Department.
2 hours, full course.

German 36. Modern German Fiction in Translation. This course is designed to introduce the English-speaking student to German writers of the late 19th and 20th centuries who have influenced contemporary literature and thought (e.g. Mann, Kafka, Hesse, Grass). The course will be given in English and may not count towards a German concentration.
3 hours, full course.

German 39. Modern German Theatre in Translation. This course is designed to deepen the English-speaking student's knowledge of 20th-century German theatre. In addition to readings in dramatists such as Brecht, Durrenmatt, Frisch, Grass, Hochhuth and Weiss and related criticism, there will be consideration of social and political emphases, of the absurdist and documentary theatre, and of the anti-theatre. The course will be given in English and may not count towards a German concentration.
3 hours, full course.

40. German Drama from the Classical Period to the Present.
Prerequisite: German 20 or permission of the Department.
3 hours, full course.

42. German Lyric Poetry.
Prerequisite: German 20 or permission of the Department.
3 hours, full course.

44. A study of some major German novels of the nineteenth and twentieth centuries.
3 hours, full course.

45g. Scientific German for Graduate Students. The reading of scientific works in German from textbooks and journals, supplemented by individual reading in a chosen special field of study. This course may be elected by students without a previous knowledge of German.
2 hours, full course.

INFORMATION ON HONOURS COURSES AND PROGRAMS

GERMAN LANGUAGE AND LITERATURE

Requirements for admission. First Year Program (Arts, Social Science, or Science)

with German 20 or 22 (or 2 or 10) and two other courses as principal courses. For grades required for admission and progression see page

SECOND YEAR
Principal Courses

German 290 and 291 (or, as recommended by the Department, either 391 or 491)

Subsidiary Courses

Three Options

THIRD AND FOURTH YEARS
Principal Courses

German 333, 390, 391, 420, 425, 430, 444, 480, 482, 491 as required to make a total of nine in the three senior years (see note below).

Literature courses in the 300 and 400 series may be taken in any sequence, but students are advised to include at least one course from each of the following:

A) 333, 425, 430 (earlier German Language and Literature)

B) 480, 482 (the classical period)

C) 390, 420, 444 (courses emphasizing literature of the 19th and 20th centuries)

Subsidiary Courses

Three Options

NOTE: There is to be a total of nine German comprehensive examination in the spring designated as German 495. Additional German courses may be taken as options. Students are normally required to take the three language courses 291, 391 and 491. Students fully proficient in spoken and written German are required to include as their only language course German 491.

COMBINED HONORS PROGRAMS

German may be combined with English, Fine Art, French, Greek, History, Latin, Philosophy, Russian or Spanish in a combined Honors Program.

Requirements for Admission. First Year 20 or 22 (or 2 or 10) and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program, as detailed under the listing of the other department concerned. (Students who take German 2 or 10 in the first year must take German 20 or German 22 along with their second year courses).

After the First Year the program consists of a total of at least fifteen courses: a minimum of seven German Honors Courses, the required courses in the second subject, as listed by the department concerned, and enough options to complete the total.

The German courses must be taken as follows:

Second Year

290 and 291 (or, as recommended by the Department, either 391 or 491).

Third and Fourth Years

333, 390, 391, 420, 425, 430, 444, 480, 482, 491 as required to make a total of seven in the three senior years. Literature courses in the 300 and 400 series may be taken in any sequence.

NOTE: There is to be a total of seven German are normally required to take the three language courses German 291, 391 and 491. Students fully proficient in spoken and written German are required to include German 491 as their only language course. A comprehensive examination in the spring, designated as German 495, is recommended in addition to the seven German Honors courses for all students planning to do graduate work in German.

GERMAN AND HISTORY

Requirements for Admission. First Year 20-level History course and German 20 or 22 and one other course as principal courses. For grades required for admission and progression see page After the First Year the program consists of a total of at least fifteen courses, a minimum of seven honors German courses, seven honors History courses, and one option.

The German courses must be taken as follows:

Second Year

290 and 291 (or, as recommended by the Department, either 391 or 491).

Third and

Fourth Years

333, 390, 391, 420, 425, 430, 444, 480,

482, 491 *as required to make a total of seven in the three senior years.*

NOTE: There is to be a total of seven German are normally required to take the three language courses German 291, 391 and 491. Students fully proficient in spoken and written German are required to include as their only language course German 491. A comprehensive examination in the spring, designated as German 495, is recommended in addition to the seven German Honors courses for all students planning to do graduate work in German.

History courses must be taken as follows:

Second Year

History 231, 236

Third Year

Two of History 330, 335, 337, 346, 356

Fourth Year

Three of History 330, 337, 356, 436, 456, 460

Subsidiary Courses

One option in the Second Year. (An additional German or History course may be selected).

HONORS COURSES

Students may enter honors courses only if they have completed German 20 or German 22. Literature courses in the 300 and 400 series may be taken in any sequence.

290. German Prose and Poetry of the Nineteenth Century.
Prerequisite: German 20 or 22.
3 hours, full course.

291. Conversation and Composition.
Prerequisite: German 20 or 22 or equivalent competence in written and spoken German.
3 hours, full course.

333. History and Structure of the German Language. An analysis of the sounds and structures of New High German and their historical development.
3 hours, full course.

390. German Drama of the Nineteenth Century.
3 hours, full course.

391. Conversation and Composition. Aspects of German intellectual and cultural history will be the basis of the discussion and writing.
Prerequisite: German 291 or equivalent competence in written and spoken German.
3 hours, full course.

420. German Literature of the Twentieth Century.
3 hours, full course.

425. Medieval German Literature. Selected writings from the period 800 to 1500, read partly in modern German translation, with emphasis on Middle High German lyric and epic poetry.
3 hours, full course.

430. German Literature of the Sixteenth and Seventeenth Centuries.
3 hours, full course.

444. The German Novel from the Eighteenth Century to the Present.
3 hours, full course.

480. German Classicism. Goethe.
3 hours, full course.

482. Lessing and Schiller.
3 hours, full course.

491. Advanced oral and written German. The discussion and writing will centre on contemporary German society.
Prerequisite: German 391 or equivalent competence in written and spoken German.
3 hours, full course.

German 495. A written examination which will test the student's general knowledge of German language and literature and their historical development as well as his critical and evaluative ability. Required for the honors program in German Language and Literature and recommended for all students contemplating graduate study in German.

LINGUISTICS

ASSOCIATE PROFESSORS: Asensid (Spanish), Avotins (Classical Studies), Bandeen (English), Wilson (Group Chairman) (English) ASSISTANT PROFESSORS: Brunet (French), Calbert (German), Eramian (Russian Studies), Holder (French) LECTURERS: Piggott (Anthropology), Shamis (Anthropology)

Linguistics at the University of Western Ontario is administered by a Linguistics Group drawn from interested departments throughout the University. The following courses are offered at the undergraduate level by participating departments:

235b. Anthropology - Language and Culture History.

241. Anthropology - Anthropological Linguistics.

320a. Anthropology - Topics in Language and Culture.

321b. Anthropology - Topics in Language and Society.

32. English - Introduction to Linguistics.

37. English - History of the English Language.

396. French - History and Structure of the French Language.

333. German - History of the German Language.

455. Philosophy - Philosophy of Language.

393. Russian - History of the Russian Language.

461. Spanish - Spanish Language and Civilization.

Note: It is recommended that the following notation appear in the Social Science section between Journalism and Political Science.
Linguistics (See calendar copy of Faculty of Arts).

DEPARTMENT OF PHILOSOPHY

Talbot College

Acting Chairman: R. W. Binkley, BA Colorado; PhD Minnesota
PROFESSORS: Binkley, Butts, Davis, Johnson, Johnson, Leach; ASSOCIATE PROFESSORS: Block, Bronaugh, Bub, Freed, Henry, Hockney, Hooker, Marras, Maynard, Pearce, Williams; ASSISTANT professors: Beaman, Harper, Lennon, Muehlmann, Nicholas, Shorten.

THREE-YEAR PROGRAM

There is no special departmental requirement for concentration in Philosophy. Philosophy 20 or 21 is recommended in first year, however, and it is also recommended that the student include at least some courses from Philosophy 30, 31, 42 and 48 in the second and third year, as well as some honors courses. Students concentrating in Philosophy should consult with the assistant chairman of the Department each year before registration.

GENERAL COURSES

20. Introduction to Philosophy. A survey of selected philosophical problems, with reference to both classical and contemporary philosophers. Specimen topics include: the mind-body problem, the existence of God, perception and matter, freedom and determinism. Primarily for Freshmen.
3 hours.

21. Reasoning and Critical Thinking. An introduction to basic principles of reasoning and critical thinking designed to enhance the student's ability to evaluate various forms of reasoning as found in everyday life as well as in academic disciplines. The course will deal with such topics as inductive and deductive reasoning, the nature and function of definitions, types of fallacies, the use and misuse of statistics, and the rudiments of logic. Practical application in several fields will be stressed.
3 hours.

30. The Philosophical Foundations of Western Thought. A survey of the history of Western philosophy tracing the development of major philosophical ideas and discussing their role in the formation of the Western intellectual tradition.
2 hours.

31. Introduction to Logic. An introduction to Aristotelian logic, propositional logic, and general quantification. Related problems in the philosophy of logic, semantics, and inductive logic will also be examined.
2 hours.

32. Philosophy of Literature. A philosophical critque of man, values and society based on an analysis of representative literary works. Readings will include works of such authors as Dostoevsky, Nietzsche, D. H. Lawrence, Thomas Mann, Sartre, Camus, Unamuno, Huxley, Beckett, Hesse etc.
2 hours.

34. Introduction to Philosophy of Science. A critical examination of philosophical issues involved in scientific method, confirmation of scientific hypotheses, scientific explanation, concept formation and theory construction. Normally philosophical problems arising in formal and natural sciences will be examined.
2 hours.

35. Aesthetics. Conceptual problems relating to the production and appreciation of the fine arts. Specimen topics include the nature of the work of art and of artistic expression, artis-

tic criticism, fiction, metaphor, appreciation, and the logic of value judgments.
2 hours.

36. Ancient Philosophy. A survey of the principal developments from the Presocratics (600 B.C.) to Plotinus (250 A.D.). Primary emphasis will be placed on the critical reading of selected original sources.
2 hours.

37. Social and Political Philosophy. A critical study of selected problems in classical and contemporary social and political thought. Specimen topics: social justice, authority and the individual, concepts of democracy, legitimacy of revolution.
2 hours.

38. Existentialism. A course designed to acquaint the student with the fundamentals of the existentialist movement. Among philosophers considered will be Heidegger, Sartre, Merleau-Ponty, Jaspers, Marcel and Berdyaev.
2 hours.

39. Philosophy of Education. Analysis of major issues of educational theory and policy; the role of education in a culture and in the life of the individual, its ends and means, the contribution of teacher and student curriculum. Emphasis is placed upon underlying concepts and values.
2 hours.

40. Philosophy of Law. A critical study of some of the main problems in the philosophy of Law. Questions of basic theory will be considered as well as applications to particular issues. Specimen topics: nature of law, law and morality, 'hate' literature, pornography, the insanity defense.
2 hours.

42. Ethics. A critical study of the central issues of moral philosophy, with reference both to classical and to contemporary authors. Specimen topics include egoism, hedonism, utilitarianism, relativism, subjectivism, rationality in ethics, and the nature of moral judgment.
2 hours.

43. Philosophy of Religion. Conceptual problems relating to personal and institutionalized religion. Specimen topics include: the nature of religious experience and knowledge, analysis of the concept of God, analysis and comparison of important types of religious philosophy.
2 hours.

46. Critiques of Contemporary Culture. Critical examination of prevailing value systems from the point of view of philosophy. Philosophical issues concerning the nature and standards of such criticism will also be discussed. Specimen topics: culture and values; conservative, liberal and radical critiques; the arts and the sciences in society; the idea of Utopia; leisure and work; cultural identity; value change.
2 hours.

47. Early Modern Philosophy. A critical examination of basic philosophical literature from Continental Rationalism and British Empiricism, with special emphasis on such figures as Descartes, Spinoza, Leibniz, Locke, Berkeley, and Hume.
2 hours.

48. Contemporary Philosophy. A critical study of selected 20th Century philosophers. Movements and figures discussed vary from year to year. Specimen topics include pragmatism, positivism, existentialism, linguistic analysis: Russell, Moore, Whitehead, Dewey, Wittgenstein.
2 hours.

49. Special Topics in Philosophy. Special topics accommodating the interests of the instructor and students, selected from various areas in Philosophy, e.g. value theory, philosophy of mind, philosophy of mathematics, philosophical ideas in literature.
(Offered on demand)

Prerequisite: one course in Philosophy
2 hours.

56. Theory of Rational Choice. Analysis and critique of decision-making processes. A survey at the elementary level of decision theory, game theory, systems analysis and other recent technical developments is combined with a philosophical consideration of the underlying concept of rationality in practical decision, of the relevance to decision-making of moral and other values, and of concrete applications in the realms of social policy and business.
2 hours.

57a Philosophy of the Social Sciences. A general introduction to basic methodological and philosophical problems in the social sciences - especially psychology and sociology. Sample topics: functionalism, teleological explanation, the role of interpretation and value judgment in the social sciences.
half course, first or second term; 2 hours.

58b Philosophy of History. A critical examination of various theories of history and historical understanding. Sample topics: models of historical explanation, value-neutrality, the meaning of causation in history, the problem of historical relativism, utopias and historical determinism.
half course, first or second term; 2 hours.

59. Science, Philosophy and Culture. A comparison of the foundations of myth, mysticism, philosophy, and science as sources of knowledge. The course will examine both philosophically and historically what steps were necessary in the emergence of the modern scientific attitude from a background of myth, religion and metaphysics.
2 hours.

HONORS PROGRAMS

All selections of courses by students in Philosophy honors programs require written departmental approval and students must consult with the Department each year before registration for this purpose.

PHILOSOPHY

Requirements for Admission. First Year with, at minimum, three principal courses which should include Philosophy 20 or 21. With permission of the Department of Philosophy, a student who has not taken Philosophy 20 or 21 may enter this program.

After the first year this program requires, at minimum, nine honors Philosophy courses and six options. Some of the options may be additional Philosophy courses and probably should be in the case of a student contemplating graduate work in Philosophy. Philosophy 254 must be taken in the second year and at least three 400 level Philosophy courses must be taken. For the rest, the student makes his own selection of courses in consultation with the Department and with its approval.

The normal load is five courses each year including at least two honors Philosophy courses. These and one other course (which shall be an honors Philosophy course, if taken) shall be considered as principal courses. Additional courses may be taken with the approval of the Department.

PHILOSOPHY WITH MINOR

Requirements for Admission. First year General program (Arts, Science or Social Science) with, at minimum, three principal courses which should include Philosophy 20 or 21 and whatever principal courses are required by the Department of the Minor. With permission of the Department of Philosophy, a student who has not taken Philosophy 20 or 21 may enter this program.

After the first year the program requires, at minimum, seven honors Philosophy courses, five honors courses in the Department of the Minor and three options. Some of the options may be additional Philosophy or Minor courses, and probably should be in the case of a student contemplating graduate work. Philosophy 254 must be taken in second year and at least two 400 level Philosophy courses must be taken. The selection of Minor courses requires the approval of the Department of the Minor which must be consulted each year before registration, along with the Philosophy Department.

The normal load is five courses each year including at least two honors Philosophy courses and one course from the Minor, which shall be considered as principal courses. Additional courses may be taken with the approval of the Departments.

COMBINED HONORS PROGRAMS

Within the Faculty of Arts, Philosophy may be combined with English, Fine Art, French, German, Greek, Latin, Russian or Spanish in a Combined Honors Programs.

Requirements for Admission. First Year with Philosophy 20 or 21 and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the Combined Honors Program, as detailed under the listing of the department concerned. With the permission of the Department of Philosophy, a student who has not taken Philosophy 20 or 21 may enter a Combined Honors Program.

After the first year the program requires a total of at least fifteen courses, which must include at least six honors Philosophy courses, the required courses in the second subject as listed by the Department concerned, and enough options to complete the total requirements. Some of the options may be additional Philosophy courses, or courses in the second subject, and probably should be in the case of a student contemplating graduate work. The honors Philosophy courses must include Philosophy 254, which should be taken in the second year, and at least one 400 level Philosophy course. For the rest, the student makes his own selection of courses in consultation with the Departments and their approval. The normal load is five courses each year including, at least, two honors Philosophy courses and two honors courses in the second subject. Additional courses may be taken with the approval of the Departments.

Outside the Faculty of Arts, Philosophy may be combined with History, Mathematics, or Psychology in a Combined Honors Program.

PHILOSOPHY AND HISTORY

Requirements for Admission. First Year three principal courses, including Philosophy 20 or 21, and History 20. With the permission of the Philosophy Department, a student who has not taken Philosophy 20 or 21 may enter this program.

After the first year this program requires, at minimum, six honors Philosophy courses, six honors History courses and three options. Some of these options may be additional Philosophy or History courses, and probably should be in the case of a student contemplating graduate work. The Philosophy courses must include Philosophy 254, taken in second year; and at least one 400 level Philosophy course. The History courses must include at least four 300 or 400 level courses. History 231 and 236 are recommended, but not required, in second year. For the rest, the student makes his own selection of courses in consultation with the Departments and with their approval. The normal load is five courses each year including two Honors Philosophy and two History courses, which shall be considered as principal courses. A student who wishes to qualify for a Type A certificate in History must choose additional honors or general History courses as options after consultation with the Registrar of Althouse College.

PHILOSOPHY AND MATHEMATICS

Requirements for Admission. First Year three principal courses, including Mathematics 24 or 27 and Philosophy 20 or 21. With the permission of the Philosophy Department, a student who has not taken Philosophy 20 or 21 may enter this program.

After the first year, this program requires, at minimum, six honors Philosophy courses, six honors Mathematics courses and three options. Some of these options may be additional Philosophy or Mathematics courses and probably should be in the case of a student contemplating graduate work. The Philosophy courses must include Philosophy 254, taken in second year; Philosophy 251 or 351, taken in second or third year and at least one 400 level Philosophy course. The Mathematics courses must include: Mathematics 250 and 256, taken in second Mathematics 470 and one of 450, 456 or 460, taken in fourth year. Mathematics 278 is recommended but not required. For the rest, the student makes his own selection of courses in consultation with the Departments and with their approval.

The normal load is five courses each year including at least two Honors Philosophy courses and two Honors Mathematics courses, which shall be considered as principal courses. Additional courses may be taken with the approval of the Departments. A student who wishes to qualify for a Type A certificate in Mathematics must choose additional honors or general Mathematics courses as options after consultation with the Registrar of Althouse College.

PHILOSOPHY AND PSYCHOLOGY

Requirements for Admission. First Year with Psychology 20 and Philosophy 20 and two other courses as principal courses. If Psychology 20 was not taken in the First Year, it must be selected as an option in the Second Year. With the permission of the Departments, a student who has not taken Philosophy 20 may enter this program.

After the First Year, this program requires seven Honors Psychology courses, six Honors Philosophy courses, and two options. Some of the options may be additional Psychology and Philosophy courses, and probably should be in the case of a student contemplating graduate work. The normal load is five courses per year including at least two Honors Psychology and two Honors Philosophy courses. A student must have his course selections approved by the Departmental Advisors to the Philosophy and Psychology program. The Advisors may approve the selection of additional courses if merited by the student's performance. All Honors Psychology and Honors Philosophy courses taken in any year will be considered principal courses.

SECOND AND THIRD YEAR

Principal Courses

Psychology 281; One of Psychology 201a-202b, 201a-203b, 211, 221a-222b, 239. One full-year or two half-year courses from the Honors Psychology courses numbered 240-279 or 340-379. One additional Honors Psychology course and Philosophy 254.

FOURTH YEAR

Principal Courses

Psychology 282, if not taken previously. Psychology 485. One additional Honors Psychology course, if needed to give a total of seven. One 400 level Philosophy course, if not taken previously.

HONORS COURSES

All Honors Courses are scheduled for three hours each week; however in some cases, at the discretion of the instructor, the third hour will not be used for a meeting of the class.

*251. **Introduction to Logic.** The propositional calculus and first-order functional calculus, including identity and description. Emphasis will be on the development of logical techniques for analyzing and evaluating arguments.
3 hours.

254. **Introduction to Problems in Theory of Knowledge.** Intensive seminar and tutorial study of major problems in epistemology. For Honors students in any department.
3 hours.

256. **Ancient Philosophy.** A critical examination of the major philosophers and philosophical schools from the Presocratics to Plotinus.
3 hours.

257. **Early Modern Philosophy.** A critical examination of the philosophical literature of the 17th and 18th centuries, with particular emphasis on such figures as Descartes, Leibniz, Locke, Berkeley, Hume, Kant.
3 hours.

337. **Social, Political and Legal Philosophy.** A critical study of contemporary and traditional social and political thought as well as a critical analysis of current and classical legal philosophy.
3 hours.

338. **Phenomenology and Existential Philosophy.** A critical examination of representative literature in the fields of phenomenological research and existential philosophy from Husserl to the present day.
3 hours.

344. **Philosophy of the Social Sciences and the Philosophy of History.** A philosophical examination of the structure and methodology of the Social Sciences, e.g. psychology and sociology. Functionalism, teleological explanation, and verification of theories will be discussed. The latter half of the year will be given to a critical examination of various theories of history and historical understanding.
3 hours.

350. **Philosophical Texts.** An examination of selected source materials in Ancient, Modern and Contemporary Philsophy; critical works will also be studied. The texts vary from year to year; more detailed information may be obtained from the department.
3 hours.

*351. **Introduction to Logical Theory.** An introductory study of the theoretical properties of formal systems. Particular stress will be placed on the theoretical problems connected with the development of axiomatic systems and with their semantical interpretation.
3 hours.

353. **Philosophy of Religion.** Conceptual problems relating to personal and institutionalized religion. Specimen topics include: the nature of religious experience and knowledge, analysis of the concept of God, analysis and comparison of important types of religious philosophy.
3 hours.

355. **Aesthetics and Value Theory.** Conceptual problems relating to the production and appreciation of the fine arts. Specimen topics include: the analysis of "work of art", "artistic expression", the logic of value judgments, the nature of artistic criticism, fiction, metaphor, appreciation.
3 hours.

357. **Modern Philosophy.** Later modern philosophy with particular emphasis on the philosophy of the 19th century.
Prerequisite: Philosophy 257 or permission of the Department.
3 hours.

362. **Ethics.** A critical study of moral problems and theories. The course will be based on readings selected from ethical literature from Aristotle to the present.
3 hours.

395. **Topics in Philosophy.** A directed reading course on topics formulated by the individual student.
Prerequisite: Permission of the Department.

450. **Epistemology/Metaphysics.** Full year courses in basic problems of epistemology and of metaphysics offered in alternate years. Readings from contemporary writings will be stressed.
2 hours.

451. **Advanced Topics in Logical Theory.** Intensive study of various advanced topics in logical theory. Specimen topics include: Set theory, model theory, proof theory, algebraic semantics, decision problems for formal theories etc.
3 hours.

454. **Philosophy of Science.** Contemporary problems of scientific methodology, and of sciences as systems of knowledge. Can be taken by students in natural and social science programs with consent of instructor.
3 hours.

455. **Philosophy of Language.** A study of the nature and functions of language. The syntactic, semantic and pragmatic aspects of language will be investigated, as well as major theories of language such as the behaviorist, transformational, and formal theories. Questions of meaning and reference, concept formation and ontology will be explored in detail.
3 hours.

464. **Contemporary Analytic Philosophy.** A seminar devoted to the investigation of selected philosophical problems as they arise in the writings of such philosophers as Moore, Russell, Ayer, Carnap, Quine, Wittgenstein, Ryle, Wisdom, Austin, and others.
3 hours.

474a or 475b. **Problems in Philosophy.** A study of selected philosophical problems. The problems vary from year to year; more detailed information concerning content and prerequisites may be obtained from the Department prior to registration.
half courses, first or second term; 3 hours.

478a. **Seminar in Ancient Philosophy.**
half course, 1st term; 3 hours.

479b. Seminar in Ancient Philosophy.
half course, 2nd term; 3 hours.

480a. Seminar in Mediaeval Philosophy.
half course, 1st term; 3 hours.

481b. Seminar in Mediaeval Philosophy.
half course, 2nd term; 3 hours.

482a. Seminar in Rationalism.
half course, 1st term; 3 hours.

483b. Seminar in Rationalism.
half course, 2nd term; 3 hours.

484a. Seminar in Empiricism.
half course, 1st term; 3 hours.

485b. Seminar in Empiricism.
half course, 2nd term; 3 hours.

486a. Seminar on Kant.
half course, 1st term; 3 hours.

487b. Seminar on Kant.
half course, 2nd term; 3 hours.

488a. Seminar in 19th Century Philosophy.
half course, 1st term; 3 hours.

489b. Seminar in 19th Century Philosophy.
half course, 2nd term; 3 hours.

490a. Seminar in 20th Century Philosophy.
half course, 1st term; 3 hours.

491b. Seminar in 20th Century Philosophy.
half course, 2nd term; 3 hours.

495. Advanced Topics in Philosophy. An advanced reading course on topics formulated by the individual student.

Prerequisite: permission of the Department.
3 hours.

DEPARTMENT OF RUSSIAN STUDIES

University College

CHAIRMAN: K. A. Papmehl, MA Ottawa,
ASSOCIATE PROFESSORS: Neuhauser, Papmehl; ASSISTANT PROFESSORS: Bernotas, Eramian, Wilson; LECTURER: McFadden.

FIFTEEN COURSE (GENERAL) PROGRAM AND COURSES

Students in the Three-year BA Program intending to concentrate in Russian Studies are required to take Russian 291 and Russian 39 in their Second Year and Russian 391 and Russian 49 in their Third Year.

Students who begin the study of Russian at the University will take Russian 2 in the First Year and Russian 20 in the Second Year concurrently with Russian 291. For grade points required for progression see General Requirements for the BA Degree in the General Information section of the Calendar.

COURSES

Students registered in the Three-year Program may take honors courses subject to prerequisites.

For instruction in SCIENTIFIC RUSSIAN refer to 496. Supervised Study.

RUSSIAN LANGUAGE

2. Intensive Russian for Beginners. An intensive course in written and spoken Russian for students with no *previous knowledge of Russian. Stu*dents who wish to concentrate in Russian Studies or intend to do honors work in the Department, but have no previous knowledge of Russian, will take this course in their First Year.
No prerequisites.
4 lectures, 1 laboratory hour.

20. Advanced Russian. Review of grammar, special problems of morphology, elements of syntax. Readings of selected literary texts. Oral practice and composition.
Prerequisite: Russian 2, or permission of the Department.
3 lectures, 1 laboratory hour.

POLISH LANGUAGE AND LITERATURE

2. Introductory Polish. A beginning course with concentration on conversational skill and reading of literary material.
(Not offered 1973-74)
No Prerequisite.
4 lectures, 1 laboratory hour.

20. Polish Language and Literature. Review of grammar, reading of selected literary texts, oral practice and composition.
Prerequisite: Polish 2, or permission of the instructor.
3 lectures, 1 laboratory hour.

UKRAINIAN LANGUAGE AND LITERATURE

2. Introductory Ukrainian. An introductory language course with concentration on grammar and formation of correct speech habits.
No prerequisites.
4 lectures, 1 laboratory hour.

20. Ukrainian Language and Literature. Review of grammar, reading of selected literary texts, oral practice, and composition.
(Not offered 1973-74)

RUSSIAN LITERATURE IN TRANSLATION

30. Introduction to Russian Literature and Culture. A study of the historical and intellectual background of Russian Literature from the beginnings to 1800. Readings and lectures in English.
No prerequisites.
2 hours.

32. Literary Movements in Russia and the European Influence. A study of basic concepts in Russian literature from Classicism to Futurism in the context of the European literary scene. Readings and lectures in
No prerequisites.
2 hours.

34. The Russian Short Story. The development of the Russian Short Story from the 17th century secular tale to contemporary Soviet fiction. Readings and lectures in English.
No prerequisites.
2 hours.

36. Selected Topics in Russian Literature: Dostoevsky and Tolstoy. Topics in this course are subject to change in subsequent years to provide students of Russian and other European literatures with an opportunity to become well-acquainted with authors, genres, and trends

which are of major importance in the history of literature. Readings and lectures in English.
No prerequisites.
2 hours.

39. Prose of the 19th Century. The Great Masters of the 19th Century from Pushkin to Chekhov. Readings and lectures in English.
No prerequisites.
2 hours.

49. Prose of the 20th Century. A study of Russian literature from Gorky to the present. Readings and lectures in English.
No prerequisites.
2 hours.

HONORS PROGRAM

Requirements for Admission. First Year Russian 2 or 20 and any two other courses as principal courses. Students intending to begin a Combined Honors Program must take a course numbered 20 (alternatives in German: 2, 10, 22; in Spanish: 2, 20, 21; in English: 24, 26) in the second Honors subject as one of their three principal courses during the First Year.

Students who begin the study of Russian at the University will take Russian 2 in the First Year and Russian 20 in the Second Year concurrently with Russian 291. For grades required for admission and progression see page .

RUSSIAN STUDIES

After the First Year the Program consists of a total of at least fifteen courses, i.e. Russian 20 (unless taken in the First Year), a minimum of eight Russian Honors courses, and six options (or seven if Russian 20 was taken in the First Year). The Russian principal courses will be distributed as follows:

Second Year: Russian 291, 20 (unless taken in the First Year), Russian 290;

Third Year: Russian 391, Russian 390;
Fourth Year: Russian 491, Russian 490;

And two additional Russian Honors courses taken in any sequence during the third and fourth year of the Honors program. Students are advised to choose options in consultation with the Departments concerned.

The Department recommends that students take History 37 (Survey of Russian History) as one of their options. Students are also advised to spend one summer at a recognized intensive Russian Language School during their senior years.

COMBINED HONORS PROGRAMS

Russian studies may be combined with English, Fine Art, French, German, Greek, Latin, Philosophy, or Spanish in a Combined Honors Program. For requirements for admission see under Honors Program (above).

Russian course requirements for all Combined Honors programs consist of Russian 20 and at least six honors courses in Russian as principal courses. They will be distributed as follows:

SECOND YEAR

Russian 20 (if not taken in the First Year), 291; Russian 30/290

THIRD YEAR

Russian 391; Russian 390

FOURTH YEAR

Russian 491; *Russian 490

Students are advised to choose options in consultation with the Departments concerned.

HISTORY AND RUSSIAN

Requirements for Admission. First Year Russian 20 (or 2), and one other course as principal courses. For grades required for admission and progression see page . After the First Year the Program consists of a total of fifteen courses; at least five Honors History courses, and at least six Honors Russian courses, and four options. History courses and required subsidiary courses will be taken as follows:

SECOND YEAR

Principal Courses

History 37, one honors course in History

Subsidiary Courses

2 options, or 1 option and Russian 20 as a principal course.

THIRD YEAR

Principal Courses

History 337, one other honors course in history.

Subsidiary Courses

One of: Politics 349, 434; Economics 32; or an honors course selected with permission of the Departments of History and Russian Studies.

FOURTH YEAR

Principal Courses

2 honors courses in history

Subsidiary Courses

One of: Politics 348, 434; Economics 32; or an honors course selected with permission of the Departments of History and Russian Studies. For Russian course requirements see above

HONORS COURSES

Students registered in one of the Honors Programs of the Department will choose from courses numbered 290-494 (these courses require Russian 20 or permission of the instructor as a prerequisite).

LANGUAGE AND LINGUISTICS

291. Composition and Oral Practice. Further study of syntax.
Prerequisite: Russian 20, or permission of the Department.
3 hours and 1 hour for oral practice.

391. Composition, Translation, and Oral Practice. Advanced syntax.
Prerequisite: Russian 291.
3 hours and 1 hour for oral practice.

491. Advanced Composition and Oral Practice. Stylistics: study of various literary and non-literary styles.
Prerequisite: Russian 391.
3 hours.

493. Introduction to Russian Linguistics.
Prerequisite: Russian 20.
2 hours.

RUSSIAN LITERATURE

290. Introduction to Russian Literature and Culture. A study of the historical and intellectual background of Russian Literature from the beginnings to 1800. *The tutorials will provide an introduction to Russian literary terminology, basic literary theory and literary analysis. Some readings in Russian.
2 hours, 1 tutorial hour.

390. Prose of the 19th Century. The Great Masters of the 19th Century from Pushkin to Chekhov.
Some readings in Russian.
2 hours, 1 tutorial hour.

392. Literary Movements in Russia and the European Influence. A study of basic concepts in Russian literature from Classicism to Futurism in the context of the European literary scene.
Some readings in Russian.
2 lecture hours, 1 tutorial hour.

394. The Russian Short Story. The development of the Russian Short Story from the 17th century secular tale to contemporary Soviet fiction.
Some readings in Russian.
2 lecture hours, 1 tutorial hour.

396. Selected Topics in Russian Literature: Dostoevsky and Tolstoy. Topics in this course are subject to change in subsequent years to provide students of Russian and other European literatures with an opportunity to become well-acquainted with authors, genres, and trends which are of major importance in the history of literature.
Some readings in Russian.
2 lecture hours, 1 tutorial hour.

490. Prose of the 20th Century. A study of Russian Literature from Gorky to the present.
Some readings in Russian.
2 hours, 1 tutorial hour.

492. Seminar in Russian Drama and the History of the Russian Theatre. Selected authors and texts. Lectures and readings mainly in Russian.
Prerequisite: Russian 291.
2 hours.

494. Poetry of the 19th and Early 20th Centuries. From Pushkin to Symbolism.
Readings in Russian.
Prerequisite: Russian 291.
2 hours.

496. Supervised Study. Individual instruction for students qualified to proceed with intensive study of a specialized area of Russian and Slavic studies under the guidance of an instructor with special knowledge in this field.
Students who wish to gain proficiency in Scientific Russian may register in Russian 496.
Prerequisite: permission of the instructor.

DEPARTMENT OF SPANISH AND ITALIAN

University College

Department Chairman: Flint, W. BA Harvard; MA, PhD North Carolina
PROFESSORS: Flint, Shervill, Smieja; ASSOCIATE Professors: Asensio, Burghardt, Marti; ASSISTANT PROFESSORS: Belladonna, Brizio, López Pacheco, Munn, Newman; LECTURER: Diehl

The Department offers several programs, some in combination with other departments:

a) an **Honors program** in Spanish Language and

b) an **Honors program combining Spanish** with German, Greek, Latin, Music, Philosophy, Russian, or with courses outside the Faculty of Arts

c) an **area of concentration** in either Italian or Spanish which may serve as the **principal** area in a diversified three-year general program, or the **minor** area in an Honors program in another subject

e.g. Honors French, with minor in Spanish

Honors Fine Art, with minor in Italian

Honors Spanish, with minor in Italian

Honors English or Philosophy, with minor in Italian or Spanish

Honors Russian, with minor in Italian or Spanish

Students interested in registering in combined programs should consult both Departments concerned before choosing their courses.

GENERAL COURSES

Four courses beyond the "20 level" constitute an **area of concentration** in any subject.

ITALIAN COURSES

The four courses required for an area of concentration in Italian are Italian 31, 34, 44 (formerly 30), and 46 (formerly 40). (Italian 36, being a course in translation, does not count towards an area of concentration).

2. Intensive Italian. Introduction to understanding, speaking, reading and writing Italian. Audio-lingual techniques are combined with required practice in the language laboratory. Prepares students directly for Italian 20.
5 hours.

20. Advanced Italian. Introduction to Italian literature with excerpts from the major works of Dante, Petrarch, Boccaccio, Leonardo da Vinci, Machiaveli, Leopardi, and Pirandello. Weekly compositions in Italian to improve mastery of the written language; reading and discussion of short stories by contemporary prose writer Italo Calvino to improve facility in spoken Italian.
3 or 4 hours.

31. Italian Language and Civilization. Grammar review, syntax, composition and advanced conversation, with study of significant aspects of Italian civilization and life.
Prerequisite: Italian 20 or permission of the Department.
3 hours.

34. Modern Italian Literature. Reading and discussion of the best fifteen novels by major contemporary writers such as Moravia, Barzini **(The Italians)**, and Tomasi di Lampedusa **(The Leopard)**. Study focuses on social and current problems.
Prerequisite: Italian 20 or permission of the Department.
3 hours.

36. Italian Civilization and Literature in English. Introduction to some major Italian writers, for instance, Dante, Boccaccio, Machiavelli, etc. whose works are studied in their historical and social context as they relate to Italian civilization. This course is given in English and **does not count** toward an Italian concentration.
No prerequisite.
3 hours.

44. (formerly 30) Italian Literature of the Renaissance. Study of selected works by representative authors of the humanistic and Renaissance period.
Prerequisite: Italian 20 or permission of the Department.
3 hours.

46. (formerly 40) Dante, Petrarch, Boccaccio and their Period. Study of some major works, such as the Divine Comedy, the Decameron, etc., written in Italy in the late Middle Ages.
Prerequisite: Italian 20 or permission of the Department.
3 hours.

PORTUGUESE COURSES

2. Intensive Portuguese for Beginners. Introduction to understanding, speaking, reading and writing Portuguese. A course designed for language students and for those in other disciplines wishing to acquire a working knowledge of Portuguese for the purpose of field research. Three hours of language and one hour of linguistic or cultural emphasis.
4 hours.

20. Advanced Portuguese. Introduction to the literature of Portugal and Brazil with some grammar review and oral practice. One laboratory hour per week may be required.
Prerequisite: Portuguese 2 or permission of the Department.
3 or 4 hours.

SPANISH COURSES

Students in the Three-year Program who choose Spanish as their area of concentration must elect Spanish 31 and three other Spanish courses numbered 30 and above. These normally are Spanish 34, 38 and 44. In order to meet the requirements an Honors course may be substituted, however, after consultation with the Department.

Spanish 36 and 37, being courses in translation, do not count towards an area of concentration, but may be taken as options by any student.

Students who begin Spanish at the University and who wish to choose Spanish as their area of concentration should take Spanish 20 or 21 during the summer or consult the Chairman of the Department concerning an alternative.

2. Intensive Spanish for Beginners. Introduction to understanding, speaking, reading, and writing Spanish, with emphasis on oral fluency. Students need have no previous knowledge of Spanish, and the course leads directly to Spanish 20 or 21.
5 hours.

20. Advanced Spanish. Introduction to modern literature of the Spanish-speaking world, oral and written practice, programmed grammar review.
First term: Spanish literature from 1898 to the Civil War
Second term: Contemporary Spanish American authors. Three hours literature and discussion
one hour laboratory.
Especially recommended for students intending to honor or specialize in Spanish..
Prerequisite: Spanish 2, Grade 13 Spanish, or permission of the Department.
4 hours.

21. Advanced Spanish. Readings in twentieth century Spanish literature with grammar review and oral practice (one hour per week in the language laboratory is required). Spanish 21 offers less extensive readings than Spanish 20, covers the grammar in 36 classes plus 18 laboratory hours.
Prerequisite: Spanish 2, /Grade 13 Spanish or permission of the Department.
4 hours.

31. Spanish Language and Civilization. For students who have completed Spanish 20 or 21. Concentration is on grammar review, oral and written practice, and a survey of Spain's civilization. Credit may not be given for both Spanish 31 and Spanish 231.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

34. Modern Peninsular Literature. Selected works of the nineteenth and twentieth centuries, with particular emphasis on the latter. The fall semester deals mainly with the theatre, the spring semester, with the novel.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

36. Spanish Civilization and Literature in English. This course is designed to introduce the student to selected highlights of Spanish Literature (e.g., Cervantes, Lope de Vega, Calderón, Unamuno, Garcia Lorca, Ortega y Gasset, etc.). The course will be taught in English and will not count towards a Spanish concentration.
No prerequisite.
3 hours.
(Not offered 1973-74)

37. Latin American Civilization and Literature in English. An introduction to the culture and literature of Latin America—including Brazil—with particular reference to the development of cultural identity and its expression in the contemporary literary scene. The course will be taught in English and will not count towards an area of concentration in Spanish.
No prerequisite.
3 hours.

38. Latin-American Literature. A study of selected works of prose and poetry after 1880, together with selected aspects of the civilization of Latin America.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

44. Literature of the Golden Age. Selected works from Spain's richest literary period, including dramas by Lope de Vega and Calderón, the **Lazarillo** (precursor of the picaresque novel) and the **Quijote**, considered in the light of Spanish history and culture of the sixteenth and seventeenth centuries.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.
(Not offered in 1973-74)

45. Scientific Spanish. A course intended for students with an elementary knowledge of Spanish grammar who require certification of their ability to read a foreign language in fulfilment of an advanced degree. The course's subject matter is tailored as much as possible to the interests of the registrants, but tends to concentrate on current published materials of a non-literary nature. The course is conducted in English, does not attempt to improve the oral capacity of students, and should not be taken by students with an area of concentration in Spanish, or by others who have previously taken Spanish 2, 20 or 21. It is primarily a "service course" for students in disciplines other than Spanish.
Prerequisite: Some elementary knowledge of Spanish.
1 hour, 1/2 course.

SPANISH LANGUAGE AND LITERATURE

Requirements for Admission. First Year year of Spanish 2, 20 or 21, plus two others as principal courses. English 20 is highly recommended. Students who begin Spanish at the University and who desire to enter any Honors Program involving Spanish are urged to take Spanish 20 or 21 in Summer School, or consult the Chairman of the Department concerning an alternative. A student will be automatically accepted if he has an average of at least 70% with no grade of less than 60% in his principal courses. He must also have a passing grade in each of his first-year courses. Students who fail to qualify for automatic admission but who complete the first year with an average of at least 60% in their principal courses, SHOULD APPLY to the Department for consideration. After the First Year the program consists of a total of at least **fifteen** courses: a minimum of **nine** honors system of required Seminars.

Compulsory courses: 231, 341 and 461, to be taken in that order.

Six courses from the following: Spanish 240, but preferably beginning with courses numbered in the 200's and ending with those in the 400's.

COMBINED HONORS PROGRAMS

Spanish may be combined with English, Fine Art, French, German, Greek, Latin, Music, Philosophy, Russian, or with subjects outside the Faculty of Arts, subject to confirmation by both Departments concerned.

Requirements for admission. First Year Program (Arts, Science, or Social Science) with Spanish 20 and two other courses as principal courses, one of which must satisfy the requirements for the second subject in the combined Honors Program, as listed by the Department concerned.

SPANISH HONORS COURSES

231. Spanish Language and Civilization. A course in guided free composition and practical conversation supplemented by lectures and seminars in Spanish Civilization from 1700 to the present day. Credit will not be given for both Spanish 231 and Spanish 31.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

240. Spanish Prose of the Nineteenth and Twentieth Centuries. A study of selected prose works from Galdós to the present with special attention paid to methods of literary criticism. Emphasis will be placed on Galdós, Unamuno, Baroja, Valle-Inclán and Cela.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 hours.

248. Latin American Poetry of the Nineteenth and Twentieth Centuries. A critical study of the works of selected poets from the Independence to the present day.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 hours.

260. Spanish Poetry of the Nineteenth and Twentieth Centuries. A critical study of the works of selected poets from the Romantic, Espronceda, to the present, including Bécquer, Dario, Machado, Jiménez, Lorca, some representatives of the Generation of 1927 and José Hierro.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 hours.

341. Spanish Language. An advanced course in guided free composition, translation, syntax and oral practice.
Prerequisite: Spanish 231 or permission of the Department.
3 hours.

348. Latin-American Literature and Civilization. A study of representative prose fiction of the past 150 years, with special reference to the "social" novel of this century. The main part of the course will consider the works of Azuela, Guiraldes, Asturias, Rivera, Carpentier and Borges. During the year there will be seminars on Latin-American Civilization from 1700 to the present.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 or 3 hours.

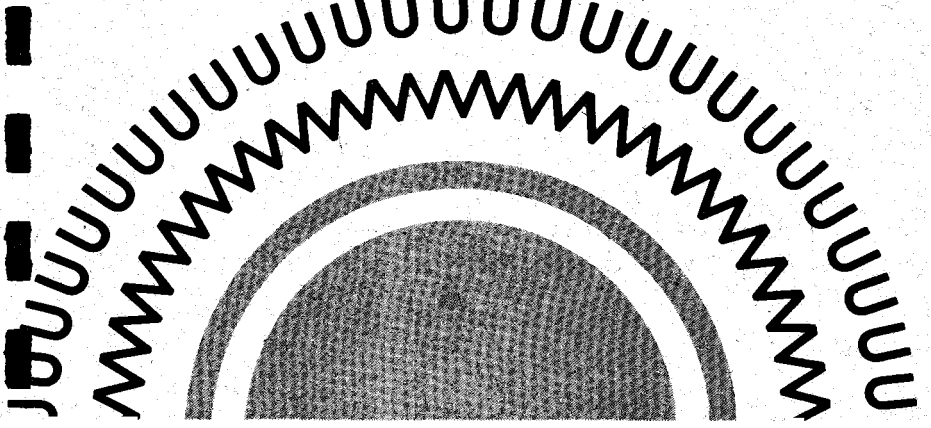
365. Hispanic Poetry from its origins to 1700. A critical analysis of poetic texts from the early "jarchas" to Quevedo.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 hours.

460. Spanish Drama from the "Celestina" to the Present. A study of Spanish drama from its origins to the present day, including plays by Lope de Vega, Calderón, Zorrilla, Valle-Inclán, Lorca and Buero.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

461. Spanish Language and Civilization. History of the Spanish Language with special emphasis on representative texts chosen to demonstrate linguistic and stylistic evolution from the beginnings of Old Spanish to the present day. Three hours a week in Term I; in Term II, two hours a week plus 15 seminars on Spanish Civilization prior to 1700.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 or 3 hours.

465. Spanish Prose of the Golden Age. A study of major prose works of this period including the picaresque novel and the Quijote.
Prerequisite: Spanish 20, 21 or permission of the Department.
3 hours.

Faculty of Music



Faculty of Music

Dean of the Faculty and Professor:
Hugh J. McLean
Associate Dean and Professor:
Donald A. McKellar

TEACHING STAFF

Department of Music History

Professor and Department Chairman: Gordon K. Greene
Professor: Alfred Rosé Associate Professors: Philip G. Downs, James A. Stark Assistant Professors: Karin Pendle, Stephen Seiffert Lecturers: Roger Gustafson, Jeffrey Stokes

Department of Musical Theory and Composition

Professor and Department Chairman: Carl F. Haenselman
Associate Professors: Ralph Aldrich, Kenneth Bray, Arsenio Giron, J. Paul Robert Shallenberg Assistant Professors: Peter J. Clements, Robert Hughes, Robert Riseling Lecturers: Jean M. Anderson, Kathryn Baker, Larry Cortner, Michael Longton, Jeffrey Stokes Instructors: Margaret Henry, Ilonka Seder-Szabolcsi, Frances Smith

Department of Music Education

Associate Professor and Department Chairman: J. Paul Green
Professor: Donald A. McKellar Associate Professors: Ralph Aldrich, Kenneth I. Bray Deral J. Johnson, George VanOstrand Assistant Professors: Charles Dalkert, Hermon C. Dilmore, Robert Hughes, Robert A. Skelton, Earle Terry Lecturers: A. James Ford, Jeffrey Stokes Instructors: Clifford Evens, Margaret Henry, Laura Jaeger, Ilonka Seder-Szabolcsi

Department of Applied Music and Performance

Associate Professor and Department Chairman: John S. McIntosh

PIANO

Professor: Clifford von Kuster Assistant Professors: Damiana Bratuz, Lecturer: John-Paul Bracey Instructors: Pauline Aldrich, Gwen Beamish, Patricia Giron, Marian MacLennan, Antonia Mazan, Lesley Munn, Sheila Ryerse, Frances Smith, Sandra Weaver

CLASS PIANO

Lecturers: Kathryn Baker, John-Paul Bracey

ORGAN

Associate Professor: John S. McIntosh Lecturer: Larry Cortner

HARP

Instructor: Maria Lorcini

MUSIC

STRINGS

Visiting Professor: Tsuyoshi Tsutsumi (Violoncello) Associate Professor: Ralph Aldrich (Viola) Assistant Professors: Hermon C. Dilmore (String Classes), Robert A. Skelton (Violin) Lecturers: Jeffrey Stokes (Double bass), Gwen Thompson (Violin) Instructors: Mary Evens (Violoncello), Sandra Stark (Violin)

WOODWIND

Associate Professors: Kenneth I. Bray (Bassoon), George VanOstrand (Clarinet) Assistant Professor: Robert Riseling (Clarinet) Instructors: Laura Jaeger (Oboe), G. J. Meyer (Flute), Lynn Milnes (Clarinet), Philip Murphy (Clarinet), Leola Wilkins (Flute)

BRASS

Assistant Professors: Charles Dalkert (Trombone), Stephen Seiffert (French horn) Lecturer: A. James Ford (Trumpet) Instructor: Joan Clarke (Trumpet)

PERCUSSION

Assistant Professor: Robert Hughes

VOICE

Professor: Alfred Rosé Associate Professors: Deral J. Johnson, James A. Stark Assistant Professor: Karin Pendle Instructors: Mary Ellen Gustafson, Constance Newland

CONDUCTING

Professor: Donald A. McKellar Associate Professor: Deral J. Johnson Assistant Professor: Hermon C. Dilmore Instructor: Clifford Evens

ADMINISTRATIVE STAFF

Administrative Officer and Secretary to the Dean: Mrs. Marjorie Thomas, BA
Administrative Assistants: Mr. Alec Cave (Ensembles, Programming), Mr. Eric A. Cosgrove (Admissions, Records)
Secretary to the Associate Dean: Mrs. Erlene Prevett
Secretaries: Mrs. Marjorie Clark, Mrs. Kathryn Jackson, Miss Ann Klager, BA, Mrs. Christine Schur, Mrs. Marjorie Semple, BA
Audio Technician: Mr. Gordon Godwin
Piano Technician: Mr. Edward Sambell

The Library

The music library, located in Talbot College, is a divisional/professional library of the University of Western Ontario Libraries. It is staffed by four full-time professional librarians, seven full-time library assistants, a secretary and a varying number of part-time student assistants.

The collection presently totals 103,310 items. Of this total 44,243 items are housed together and are comprised of books, bound periodicals, scores and/or parts, rare materials, records, tapes and microforms. The other 59,067 items form a separate but adjoining library comprised of choral, band and orchestral scores and parts. This library is called the "Choral/Band/Orchestral Music Library." The Library also currently subscribes to 317 periodicals.

A collection of rare books, scores and manuscripts is housed in a separate room within the Music Library. This room houses a piano used for the sight-reading of restricted materials and serves as a seminar room for bibliography courses.

Study and listening facilities will accommodate a total of 110 persons. Other equipment includes three microform readers and a photocopier.

Librarian in Charge

Larry C. Lewis, AMus London, Ontario, BA(UWO), BLS Toronto

Librarians

Merwin D. Lewis, BA Kalamazoo College, MM, MLS Indiana

Cheryl E. Osborn, BA Victoria, BLS British Columbia

K. Linda Ward, AMus London, Ontario, BA, MLS (UWO)

INSTRUMENTS

The Faculty of Music has a large collection of string, woodwind and brass instruments for use by students in minor wind and string classes. A collection of historical instruments, for use in the Collegium Musicum performances, has been started with the acquisition of members of the viola da gamba family, and recorders. Two-manual harpsichords by Challis and Sassmann, two Kney practice organs, a Wilhelm chamber organ and a Casavant studio organ are also a part of this growing collection.

The Faculty of Music Recital Hall contains two concert grand pianos; a Bosendorfer and a Steinway. All teaching studios, classrooms, rehearsal rooms and most practice rooms are equipped with pianos built by Bosendorfer, Heintzman, Mason & Hamlin, Steinway and Yamaha.

PERFORMING ORGANIZATIONS

A number of musical ensembles are under the supervision of the Faculty of Music.

Faculty of Music Concert Choir

This ensemble of about 70 mixed voices performs the major choral literature.

Faculty of Music Singers

This ensemble of about 35 mixed voices performs choral literature from all periods in history.

Collegium Musicum

A small ensemble of mixed voices and instrumentalists who study the performance practices of Medieval, Renaissance and early Baroque music through performance.

University of Western Ontario Orchestra

This orchestra functions as a Faculty of Music ensemble for instrumental majors and is open, by audition, to students from all university faculties. It performs the major symphonic literature.

University of Western Ontario Symphonic Band

One of the most active ensembles on campus, this group is also open, by audition, to students from all university faculties. Its repertoire ranges widely and includes major works for symphonic band.

Faculty of Music Wind Ensemble

This ensemble, of approximately 35 players, is for instrumental majors and performs the more advanced literature for wind instruments.

Chamber Ensembles

Experience in chamber literature is provided in a variety of trio, quartet and quintet ensembles.

GENERAL INFORMATION

The Faculty of Music offers programs leading to the following degrees:

1. Bachelor of Music with Honors in one of (1) Music Education; (2) Performance (Piano, Voice, Organ or Orchestral Instrument); (3) Theory and Composition; (4) Music History.
2. Bachelor of Arts with Honors Music.
3. Bachelor of Arts with Music Options.
4. Bachelor of Musical Arts.
5. Masters Degree

REQUIREMENTS FOR ADMISSION TO ALL PROGRAMS

I. Academic Requirements

Five Grade 13 credits, other than Music, or six Grade 13 credits including Grade 13 Music.

II. Music Requirements

Satisfactory results in an audition to be held at the Faculty of Music, by appointment, in writing. In addition, all applicants must try a General Musicianship test and, if the principal instrument is not piano, a Piano Proficiency test.

(a) Principal Instrument

Applicants must demonstrate a performance level of at least Conservatory Grade VIII standard in a performance area. The audition includes the performance of two or three pieces, of contrasting styles, of at least a Grade VIII level of difficulty, some scales and other technical exercises and sight reading. Pieces need not be memorized.

(b) Piano Proficiency

Students whose principal instrument is other than piano are required, in addition to the audition, to try a piano proficiency examination. Candidates who are unable to pass this examination will register for Class Piano until this requirement is met. The examination will include scales, chords and arpeggios in major and minor keys, simple chord progressions, harmonization of a melody, simple transposition, sight reading and the performance of pieces of approximately the Conservatory Grade VI level of difficulty.

(c) General Musicianship

The General Musicianship test measures the applicant's aural aptitudes and knowledge of music rudiments. Proficiency beyond Conservatory Grade II Theory and Grade III Harmony, or Ontario Grade 13 Music, would be helpful in this portion of the audition.

HONORS IN MUSIC EDUCATION

Students who are planning to teach music in the elementary or secondary schools should enrol in the Honors in Music Education program if they wish to meet the requirements of the Type A Certificate of the Ontario Department of Education.

Specialized areas of interest within vocal or instrumental music for elementary or secondary school teaching can be developed in this program through the selection of electives. It is also possible for students to design a more comprehensive program with a lesser degree of specialization by choosing electives accordingly.

BACHELOR OF MUSICAL ARTS

Students interested in teaching music in the schools without meeting the requirements of an Honors Program may wish to enrol in the Bachelor of Musical Arts program. There is considerable flexibility in this program to accommodate the varied interests of individual students. Graduates of this program will meet the requirements of a basic secondary school certificate or an Elementary Certificate (Standard 4).

Extra Courses

Permission to take an extra full or half course must be obtained, in writing, from the Dean of the Faculty of Music.

A student must maintain an A average in music subjects in order to be considered eligible for the study of more than one principal instrument.

HONORS PROGRAMS - ADMISSION TO SECOND AND SUBSEQUENT YEARS

A student will be automatically accepted if he has an average of at least 70 per cent with no grade of less than 60 per cent in the courses listed as principal courses by the Department(s) of the subject(s) in which he is specializing. (In the Faculty of Music all music courses in which the student is enrolled are designated principal courses). He must also have a passing grade in each of the courses listed as subsidiary courses by the Department(s) concerned. (Courses in the Faculties of Arts, Science or Social Science).

A student with an average of 60-69 per cent in the principal courses of his Honors Program, and a passing grade in each of the subsidiary courses, may be permitted to progress by special permission of the Department(s) concerned.

HONORS GRADUATION REQUIREMENTS

The graduating average is the grade average of all principal courses in the Third and Fourth years. A student will automatically graduate with an Honors degree if he has a graduating average of at least 60 per cent, a grade average of at least 70 per cent, with no grade of less than 60 per cent in the courses listed as principal courses by the Department(s) of the subject(s) in which he is specializing. He must also have a passing grade in each of the courses listed as subsidiary courses by the Department(s) concerned. (Courses in the Faculties of Arts, Science or Social Science). In addition to the above requirements, each student is required to perform, for a jury of Faculty members, a comprehensive examination in applied music at the conclusion of the final year. Students majoring in performance must prepare a one-hour program. All others must prepare a half-hour program. In every case the jury will hear approximately one half of the prepared material. For students majoring in performance the recital will normally replace the comprehensive examination. All other students are encouraged to perform the comprehensive examination as a part of a public recital. A student must also complete any other comprehensive examination(s) required by the Department(s).

A student who has a graduating average of at least 60 per cent and a passing grade in every course, but whose grade average in the principal courses of the Fourth Year falls below 70 per cent may graduate with an Honors degree only on the recommendation of the Department(s) concerned.

A student who passes all courses in the Fourth Year of an Honors Program for the degree Bachelor of Music, or Bachelor of Arts with Honors Music, and satisfies all other requirements for graduation, but fails to qualify for an Honors degree, shall be awarded a Bachelor of Music or Bachelor of Arts degree without designation.

BACHELOR DEGREE PROGRAMS

These are four-year Honors and three-year General programs. All students will be enrolled in a common first year. At the beginning of the second year each student will choose an area of concentration and will enrol in one of the five Honors programs or two General programs.

Students not specializing in Music Education, who may eventually seek admission into the Intermediate program at Althouse College, are advised to choose either Music 201 and 301 or Music 202 and 302 as electives.

Before graduation all students who elect a four-year Honors program must reach a minimum of the Associate level in performance in their applied principal instrument. Honors in Performance candidates must be well above this level and, in addition, must present a public recital in their final year. All students are encouraged to perform on student recital programs.

Students who elect the Bachelor of Arts with Music Options program must reach a minimum of Grade X level of performance, although students who are able will be encouraged to reach the Associate level.

Students who elect the Bachelor of Musical Arts program must attain one of the following:

Grade X level on Orchestral Instrument or Voice with Grade VIII level Piano; or Grade X level Piano with Grade VIII level Voice; or Associate level, any instrument, with Grade VI level Piano.

A minimum of two years must be devoted to Applied Music.

COMMON FIRST YEAR

Since few music students have sufficient knowledge of music on entrance to University to choose wisely the path that best suits their individual abilities and talents, and since the same basic core of knowledge is necessary to all musicians, whatever area of the field they may ultimately enter, we have designed a common first year. It is felt that by the end of the freshman year the student should be better equipped to decide upon an area of specialization.

Music 21.	Applied Principal Instrument	1
23.	Vocal and Instrumental Music	3
25.	Theory	5
26.	Music History	3
28.	Ensemble	
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Class Piano (if required)	
	Total Hours	14 to 15.

HONORS IN MUSIC EDUCATION

SECOND YEAR

Music 201.	Instrumental Music (Prerequisite 23)	3
	or	
202.	Practicum in Choral Techniques (Prerequisite 23)	3
231.	Applied Principal Instrument	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Class Piano (if required)	
	Total Hours	16 to 18

THIRD YEAR

Music 301.	Instrumental Ensemble Techniques (Prerequisite 201)	2
	or	
302.	Choral Literature and Techniques (Prerequisite 202)	2
	One of: Music 201, 202, 339, 401.	3
Music 341.	Applied Principal Instrument	1
348.	Ensemble	
	Two music electives, one to be chosen from music history or theory area.	4 to 6
Physics 33.		3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	15 to 18

FOURTH YEAR

Music 449.	Comparative Studies in Music Education	3
	or	
450.	Music Education Seminar	3
451.	Applied Principal Instrument	1
455.	Orchestration	2
458.	Ensemble	
	One music elective	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	10 to 12

HONORS IN PERFORMANCE WITH A MAJOR IN PIANO

For admission to this Program, applicants must demonstrate a performance level of at least a Conservatory Grade X standard in piano, as well as evidence of exceptional performing ability.

SECOND YEAR

Music 231.	Piano	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
	Two courses from the Faculties of Arts, Science, or Social Science	4 to 6
	Total Hours	13 to 15

THIRD YEAR

Music 341.	Piano	1
348.	Ensemble	
354(P).	Piano Literature	2
	Three Electives:	
	One course from the Faculty of Music	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	One course from the Faculties of Music, Arts, Science or Social Science	2 to 3
	Total Hours	9 to 12

FOURTH YEAR

Music 451(P).	Piano	
	(1 hour individual lesson)	
	(1 hour class lesson)	2
453.	Piano Pedagogy	2
458.	Ensemble	
493.	Recital	
	One music elective	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	8 to 10

HONORS IN PERFORMANCE WITH A MAJOR IN VOICE

For admission to this Program, applicants must demonstrate a performance level of at least a Conservatory Grade X standard in voice, as well as evidence of exceptional performing ability.

SECOND YEAR

Music 231.	Voice	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Class Piano (if required)	
	Total Hours	13 to 15

THIRD YEAR

Music 341.	Voice	1
348.	Ensemble	
354(V).	Vocal Literature	2
	Three Electives:	
	One course from the Faculty of Music	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	One course from the Faculties of Music, Arts, Science or Social Science	2 to 3
	Total Hours	9 to 12

FOURTH YEAR

Music 451(P).	Applied Principal Instrument (1 hour individual lesson) (1 hour class lesson)	2
453.	Vocal Pedagogy	2
458.	Ensemble	
493.	Recital	
	One music elective	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	8 to 10

NOTE: Of the Arts, Science or Social Science electives a minimum of TWO must be courses in Languages other than English.

HONORS IN PERFORMANCE WITH A MAJOR IN ORGAN

For admission to this Program, applicants must demonstrate a performance level of at least a Conservatory Grade X standard in organ, as well as evidence of exceptional performing ability.

SECOND YEAR

Music 231.	Organ	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
	Two courses form the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	13 to 15

THIRD YEAR

Music 341.	Organ	1
348.	Ensemble	
354(O).	Organ Literature	2
	Three Electives:	
	One course from the Faculty of Music	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	One course from the Faculties of Music, Arts, Science or Social Science	2 to 3
	Total Hours	9 to 12

FOURTH YEAR

Music 451(P).	Organ	
	(1 hour individual lesson)	
	(1 hour class lesson)	2
453.	Organ Pedagogy	2
458.	Ensemble	
493.	Recital	
	One music elective	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	8 to 10

NOTE: Selection of Music 202, Music 302, and Music 463 as Music electives in years three and four will give the program a concentration in Church Music.

HONORS IN PERFORMANCE WITH A MAJOR IN ORCHESTRAL INSTRUMENT

For admission to this Program, applicants must demonstrate a performance level of at least a Conservatory Grade X standard in the orchestral instrument, as well as evidence of exceptional performing ability.

SECOND YEAR

Music 231.	Applied Principal Instrument	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Class Piano (if required)	
	Total Hours	13 to 15

THIRD YEAR

Music 341.	Applied Principal Instrument	1
348.	Ensemble	
	Four Electives:	
	Two courses from the Faculty of Music	4 to 6
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	One course from the Faculties of Music, Arts, Science or Social Science	2 to 3
	Total Hours	9 to 13

FOURTH YEAR

Music 451(P).	Applied Principal Instrument	
	(1 hour individual lesson)	
	(1 hour class lesson)	2
453.	Pedagogy	2
458.	Ensemble	
493.	Recital	
	One music elective	2 to 3
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Total Hours	8 to 10

HONORS IN THEORY AND COMPOSITION

SECOND YEAR

Music 231.	Applied Principal Instrument	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
239.	Composition	2
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	Class Piano (if required)	
	Total Hours	13 to 14

THIRD YEAR

Music 341.	Applied Principal Instrument	1
348.	Ensemble	
	Two Theory electives * *	5 to 6
	One music elective	2 to 3
	Physics 33	3
	Total Hours	11 to 13

FOURTH YEAR

Music 451.	Applied Principal Instrument	1
458.	Ensemble	
	Two Theory electives* *	5 to 6
	Two courses from the Faculties of Music, Arts, Science or Social Science, only one of which may be a Music course	4 to 6
	Total Hours	10 to 13

* * The Theory electives will be chosen from the following:
M345, 349, 365, 375, 455 and 459.

HONORS IN MUSIC HISTORY

SECOND YEAR

Music 231.	Applied Principal Instrument	1
235.	Theory	5
236.	Music History	3
238.	Ensemble	
252.	Music History Seminar	2
	One course from the Faculties of Arts, Science or Social Science	2 to 3
	One language course other than English	2 to 3
	Class Piano (if required)	
	Total Hours	15 to 17

THIRD YEAR

Music 341.	Applied Principal Instrument	1
348.	Ensemble	
	Three music electives, two from the *Music History area*	6 to 7
	Two courses from the Faculties of Arts, Science or Social Science (One of which should be general political and economic history)	4 to 6
	Total Hours	11 to 14

FOURTH YEAR

Music 451.	Applied Principal Instrument	1
452.	Music History Seminar	2
458.	Ensemble	
	One Music History elective	2
	One other music elective	2 to 3
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	11 to 14

BACHELOR OF ARTS WITH HONORS MUSIC

SECOND YEAR

Music 231.	Applied Principal Instrument	1
235.	Theory	5
236.	Music History	3
	Three courses from the Faculties of Arts, Science or Social Science	6 to 9
	Class Piano (if required)	
	Total Hours	15 to 18

THIRD YEAR

Music 341.	Applied Principal Instrument	1
	Two music electives	6 to 9
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	11 to 16

FOURTH YEAR

Music 451.	Applied Principal Instrument	1
	Two music electives	4 to 6
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	9 to 13

BACHELOR OF ARTS WITH MUSIC OPTIONS

SECOND YEAR

Music 31.	Applied Principal Instrument	1
35.	Theory	5
36.	Music History	3
	Three courses from the Faculties of Arts, Science or Social Science	6 to 9
	Class Piano (if required)	
	Total Hours	15 to 18

THIRD YEAR

Music 41.	Applied Principal Instrument	1
	Two music electives	4 to 6
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	9 to 13

BACHELOR OF MUSICAL ARTS

SECOND YEAR

Music 201.	Instrumental Music (Prerequisite 23)	3
	or	
202.	Practicum in Choral Techniques (Prerequisite 23)	3
31.	Applied Principal Instrument	1
35.	Theory	5
36.	Music History	3
38.	Ensemble	
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Class Piano (if required)	
	Total Hours	16 to 18

THIRD YEAR

Music 301.	Instrumental Ensemble Techniques (Prerequisite 201)	2
	or	
302.	Choral Literature and Techniques (Prerequisite 202)	2
	One of: Music 201, 202, 339, 449, 450	3
Music 41.	Applied Principal Instrument (If graduation requirements have not been completed)	1
	Two music electives	4 to 6
	Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	Total Hours	13 to 18

MASTER'S DEGREES IN MUSIC

MASTER OF MUSIC (MUS.M)

MASTER OF ARTS IN MUSICOLOGY (M.A.)

AREAS OF CONCENTRATION

The Master of Music degree is offered in the field of Music Theory, Music Education, Composition, and in Music Literature and Performance. The Master of Arts degree is offered in Musicology.

Admission

A candidate must be a graduate of an accredited university or hold equivalent qualifications, including an Honors degree (Bachelor of Music) or its equivalent with at least a B average. Students who have taken a Pass degree (three year) program may be admitted conditionally, but they must complete a Prerequisite year before being admitted to candidacy or must demonstrate exceptional competence beyond the Pass degree on entrance examinations and auditions. A student shall be recommended for candidacy when all admission requirements have been met.

Entrance Examinations

All prospective graduate students shall be required to take a number of examinations which serve as placement tests. These examinations are given at various times during the year and must be taken prior to registration. Deficiencies that become apparent as a result of these examinations must be removed at the earliest opportunity through approved courses or re-examination. A student will be presumed to be deficient in any area in which he does not take the entrance examination.

Students should achieve an A on the entrance examination in their chosen area of specialty, and not less than B in the other areas. Deficiency courses may not be used as a means of improving the academic average to meet the minimum level for admission to candidacy.

Entrance examinations will be given in the areas of Music Theory, Music History, Piano Proficiency, and in the student's Applied Music area (piano, voice, violin, etc.) The content of these examinations may be obtained by writing to the Dean of the Faculty of Music.

Special Prerequisites

A course in Acoustics and undergraduate training in Orchestration is required of candidates pursuing the degree in Music Theory. Knowledge of German is required of candidates in Musicology.

Students concentrating in Music Education must have completed two years of classroom teaching. This prerequisite does not apply to all courses but it does apply to the Music Education Seminar and Thesis.

Candidates in Composition must submit scores of their recent compositions and have them accepted by the Graduate Music Faculty.

Candidates in the areas of Literature and Performance must demonstrate in their audition a level of performing ability comparable to an A standard of the final undergraduate year before being admitted to candidacy.

Language Requirements

Before being admitted, all candidates must demonstrate competence in the English language. In certain programs, a student must also have a reading knowledge of at least one language other than English which is acceptable to the student's department and is useful in his research. If a student is not able to meet the foreign language requirement at the time of his application for admission, he may be allowed to pursue some graduate courses while he is gaining language competence.

Musicology majors will be required to obtain a reading knowledge of German and any other language necessary for the student's research.

Voice majors, in addition to obtaining a reading knowledge of one language other than English, must satisfy the Graduate Committee of the Faculty of Music that they have facility in the pronunciation of German, French, and Italian before graduating. In the Music Education program, the foreign language requirements may be waived depending on the nature of the student's research. This will be done only on the recommendation of the student's faculty adviser and with the approval of the Professional Degree Committee for Music.

Period of Study

Candidates shall be required to spend at least two terms of each academic year in residence, and to complete the program within five years. Students must register for each session during which they plan to use any university facilities, and must register in the session during which they plan to complete their degree program.

The minimum time in which the requirements can be completed is one full year (three terms), but the actual duration will depend upon the proposed course of study. Candidates who undertake remunerative employment must be prepared to spend additional time. When a deficiency in any area is indicated by the entrance examinations, the student must plan to devote more than one academic year to complete the program.

Course of Study

The course of study shall be initially proposed by the student's adviser and the chairman of the department in which the candidate is working and shall be approved by the Graduate Music Committee. For each candidate, the Graduate Music Committee shall appoint at least one adviser.

The program of study normally involves five courses (fifteen hours) and a thesis. The suggested content of the study program in each of the areas of concentration may be obtained from the Dean of the Faculty of Music.

Participation in Ensemble is required of all students majoring in Literature and Performance and is recommended for all students.

Thesis and Document

A thesis incorporating the results of an investigation in the field of the student's major area is required of all candidates in Music Theory, Musicology, Music Education, and Composition. Students working toward a Master of Music in Literature and Performance will present a document following the procedure laid down for theses. The regulations of the Faculty of Graduate Studies will be followed concerning the preparation and presentation of the thesis and document and the make-up of the examining board that conducts the oral examination of the thesis or document.

Examinations

Oral or written examinations on course work, as well as a comprehensive examination, may be required. Notice of the type of any examination required shall be given by the chairman of the department to the candidate at least two months before the date on which the examination is to be held.

A final oral examination on the thesis or document will be conducted under the supervision of the Professional Degree Committee in Music which will appoint a chairman and an examining board. The board will consist of a chairman and at least three examiners, at least one of whom will be from another department, school or faculty.

The chairman of the department, in consultation with the chairman of the appropriate Committee on Graduate Studies, may request that a thesis be read by an external examiner.

The candidate's chief adviser will attend the examination but may not question the candidate except with the permission of the chairman. Any other members of the Faculty of Graduate Studies may attend and participate in the examination, but only members of the examining board shall vote on the approval of the candidate. To be successful, a candidate must be approved by a majority of the examining board.

COURSES

*530. Music Bibliography and Research Techniques.

*582. Research Tutorial.

Theory and Composition

501. Theory Review I for Graduates (no credit).

502. Theory Review II for Graduates (no credit).

510. History and Pedagogy of Theory.

*512. Advanced Orchestration.

514. Analytic Techniques.

*516a. 16th Century Stylistic Counterpoint.

*516b. 18th Century Stylistic Counterpoint.

*516c. 20th Century Counterpoint.

518. Composition.

591. Mus. M. Thesis.

594. Mus. M. Composition Thesis.

Music Education

*570. Advanced Conducting.

*572. Advanced Brass Techniques.

*574. Advanced Woodwind Techniques.

*576. Advanced Choral Techniques.

*578. Advanced String Techniques.

580. Music Education Seminar.

591. Mus M. Thesis.

Performance

509. Applied Music.

513. Phonetics for Singers (no credit).

*545. Seminar in the Interpretation of Music Styles.

592. Document for Mus. M. in Performance.

593. Mus. M. Recital.

Musicology and Literature

503. Survey of Music History I for Graduates (no credit).

504. Survey of Music History II for Graduates (no credit).

534. Music Notation.

536. Seminar in Medieval and Renaissance Music.

538. Seminar in Baroque Music.

540. Seminar in Pre-Classic and Classic Music.

542. Seminar in Twentieth Century Music.

544. Performance Practices in Early Music.

*545. Seminar in the Interpretation of Musical Styles.

546. Beethoven.

*548. History in Music Criticism.

550. Verdi and Wagner.

552. Studies in Gregorian Chant.

554. From Symphony to Symphonic Poem.

556. Schoenberg and His School.

557. Art Song.

*558a. Keyboard Literature to 1700.

*558b. Keyboard Literature from Bach to Beethoven.

*558c. Piano Literature of the 19th Century.

*560a. Seminar in Choral Literature.

*560b. Seminar in Choral Literature.

562. Bach and Handel.

*564. History in Vocal Art.

590. M. A. Thesis.

DESCRIPTION OF COURSES

THEORY AND COMPOSITION

25. Theoretical Studies. Analysis, sight-singing, dictation and written harmony based on triads, dominant seventh chords and their inversions. Rhythmic reading and dictation, modulation. Keyboard harmony.
Five hours.

35, 235. Theoretical Studies. Continuation of Music 25. Analysis, sight-singing, dictation and writing using diatonic seventh chords, chromatic harmony, extended modulation, formal analysis, post-Romantic developments and an introduction to twentieth century style.
Prerequisite: Music 25
Five hours.

239. Composition. An introductory course in composition including analysis of widely divergent works in the established and contemporary literature. Students will write compositions for voices and instruments.
Two hours.

45, 345. Counterpoint. First term - The contrapuntal style of the sixteenth century, including analysis of works of Palestrina and Lassus. Writing in two, three and four parts. Second term - The contrapuntal techniques of the eighteenth century, including analysis of works of Bach and his contemporaries. Writing in two, three and four parts.
Prerequisite: Music 35 or 235.
Three hours.

349, 459. Composition. Works in the larger forms for solo instruments and chamber ensembles. Continuation of analysis with an emphasis on twentieth century literature. Third and fourth year students will be expected to have several works completed during the year.
Prerequisite: Music 239 (349 is prerequisite to 459).
Three hours.

365. Twentieth Century Techniques. Compositional techniques in National Schools, neo-Baroque, neo-Classicism, dodecaphonic composers, and recent developments in aleatoric, computer and electronic synthesizer applications.
Prerequisite: Music 35 or 235.
Three hours.

375. Electronic Music. Basic terminology and technology of electronic music. Historical development, musique Concrète, the "Classical" studio, the synthesizer, and computer applications. Survey of the literature with some analysis. Compositional techniques and notation peculiar to electronic music.
Prerequisite: Music 239, or permission of the instructor.
Three hours.

455. Orchestration. Instruments of the orchestra - tone-colors, transpositions. Practical scoring for individual choirs, chamber orchestra and full orchestra, choir, and symphonic band.
Prerequisite: Music 35 or 235.
Two hours.

HISTORY AND LITERATURE OF MUSIC

26. Music History. A study of the history and literature of music up to 1750. The first half of a two year survey.
Three hours.

36, 236. Music History II. A continuation of the survey to the present time.
Prerequisite: Music 26.
Three hours.

306. History of Ancient, Medieval and Renaissance Music. A seminar on music to circa 1600.
Prerequisite: Music 36, 236, or equivalent.
Two hours.

316. History of Music in the Baroque Era. A seminar on music from approximately 1600 to 1750.
Prerequisite: Music 36 or 236.
Two hours.

326. History of the Symphony. A seminar on music composed for orchestra from the pre-Classic through the Romantic era.
Prerequisite: Music 36 or 236.
Two hours.

336. History of Chamber Music. A seminar on music composed for chamber ensembles from the sixteenth century to the present time.
Prerequisite: Music 36 or 236.
Two hours.

346. History of Music in the Romantic Era. A seminar on music of the nineteenth century.
Prerequisite: Music 36 or 236.
Two hours.

346A. History of the Art Song and Oratorio. A seminar devoted to the study of the literature of song and oratorio.
Prerequisite: Music 36 or 236.
Two hours.

354(O). Organ Literature. A study of the literature for organ. For organ majors in the third year.
Prerequisite: Music 36 or 236.
Two hours.

354(P). Piano Literature. A study of the literature for solo piano. For piano majors in the third year.
Two hours.

354(V). Vocal Literature. A study of the literature for voice. For voice majors in the third year.
Two hours.

356. History of Opera. A seminar on the development of opera from the time of the Florentine Camerata to the present day.
Prerequisite: Music 36 or 236.
Two hours.

366. Selected Composer Study. A seminar on the life and works of a single composer, to be selected and named in advance by the instructor.
Prerequisite: Music 36 or 236.
Two hours.

376. Contemporary Music. A seminar in music of the twentieth century.
Prerequisite: Music 36 or 236.
Two hours.

386. Studies in Instrumental Forms. A seminar in which special emphasis will be given to the study of instrumental forms of a limited time period in music history.
Prerequisite: Music 36 or 236.
Two hours.

396. Studies in Stylistic Change. A seminar on periods of important stylistic change in music.
Prerequisite: Music 36 or 236.
Two hours.

252, 352, 452. Music History Seminar. A study of Medieval, Renaissance and Baroque music (vocal and instrumental). Participation in Collegium Musicum is required of Music History majors.
Two hours.

APPLIED MUSIC AND PEDAGOGY

21, 31, 231, 41, 341, 451. Individual lessons in the student's principal instrument.
One hour.

Juries. At the end of each academic year, the student must successfully pass an examination in his or her principal applied music subject conducted by a jury of the faculty. Before graduation each student must have reached the required examination level in his principal applied subject. Honors in Performance candidates must be well above this level and, in addition, must present a public recital. All other majors are encouraged to perform on student recital programs.

Comprehensive Examination. Each student is required to perform, for a jury of faculty members, a comprehensive examination in applied music at the conclusion of the final year.

Students majoring in performance must prepare a one-hour program. All others must prepare a half-hour program. In every case the jury will hear approximately one half of the prepared material. For students majoring in performance the recital will normally replace the comprehensive examination. All other students are encouraged to perform the comprehensive examination as a part of a public recital.

Class Piano. This is a deficiency course for students whose principal instrument is other than piano and who are unable to pass the piano proficiency examination. Students will be assigned to appropriate sections of the course until the deficiency is removed. One hour per week in each of the first two years.
No credit

353, 463. Church Music. The history of church music. Materials, methods and techniques of service playing. For organ majors in the third and fourth years.
(Music 353) One hour. (Music 463) Two hours.

451(P). Individual lessons in the student's principal instrument. For performance majors in the fourth year.
One hour individual lesson
One hour class lesson
Two hours.

453. Pedagogy of the principal instrument or voice. Required of all students registered in an Honors in Performance program in the fourth year.
Two hours.

493. Recital. A public recital of approximately one hour's duration. The program must be performed for a preview committee of faculty members not less than three weeks prior to the date of public presentation. For performance majors in the fourth year.

ENSEMBLES

28, 38, 48, 238, 348, 458. Band, Orchestra, Chorus, Collegium Musicum, Chamber Ensembles and Accompanying. Because the Faculty of Music believes that ensemble participation is of prime importance in the development of young musicians, a great variety of organizations has been established to provide the necessary experience. Under the direction and coaching of Faculty members, major works for the respective media are prepared for public performance. A student is required to attain a minimum of 12 hours of ensemble credit in the four-year programs and six to nine hours in the three-year programs. A minimum of one half of the credits must be earned in large ensembles (Choirs, Orchestra, Band, Wind Ensemble).

MUSIC EDUCATION

23. Vocal and Instrumental Music. This course is in two parts including one term of Vocal Music and one term of Instrumental Music as follows:

(a) Group instruction and practice in the fundamentals of singing, such as tone production and breath control. Individual song assignments as indicated by the student's own problems, background and ability.
(One hour).

(b) Group instruction in a wind or string class. Each student will acquire playing proficiency on one instrument and will also be introduced to basic conducting techniques. The course will employ materials and procedures suitable for group instruction and ensemble activities.
(Two hours), Three hours.

201. Instrumental Music. Instruction in instruments of the woodwind, string, brass and percussion sections.

This course will include practical work leading to a playing proficiency on at least one instrument, and a comparative study of other related instruments. Materials and procedures will be appropriate for the study of individual instruments as well as group instruction.
Prerequisite: Music 23.
Three hours.

202. Practicum in Choral Techniques. Study of conducting techniques for choral ensembles. Training and experience in the distinctive features of choral conducting, interpretation and score reading.
Prerequisite: Music 23.
Three hours.

301. Instrumental Ensemble Techniques. Organization and instrumentation of standard instrumental ensembles, conducting techniques and rehearsal procedures suitable for various ensembles. The use of ensemble literature and materials including bibliographic sources.
Prerequisite: Music 201.
Two hours.

302. Choral Literature and Techniques. Organization and development of choral ensembles. Problems of rehearsal and performance. Intensive examination of choral compositions, editions, arrangements, and collections. Practical experience in programming and conducting.
Prerequisite: Music 202.
Two hours.

339. Communication in Music. Music materials and procedures which may be employed in the development of the child and adolescent voice. Rhythmic movement, instrumental activities and listening techniques related to the musical development of the child.
Three hours.

401. Instrumental Music. The study of additional instruments not covered in Music 23 or Music 201.
Prerequisite: Music 201.
Three hours.

449. Comparative Studies in Music Education. Research techniques and source materials used in music education at the elementary school level. A comparative study of materials and procedures in music education with special attention given to the work of Orff, Kodaly, and Suzuki.
Three hours.

450. Music Education Seminar. Research techniques and source materials used in music education at the secondary school level. Special studies of the history and philosophy of music education and current problems.
Three hours.

Music Courses for Students from the Faculties of Arts, Social Sciences, Natural Sciences and the Professional Schools. The following music courses are specifically designed as electives for students from Faculties other than Music.
A student may, however, enrol in any Faculty of Music course, with the permission of the Dean of his Faculty and the approval of the chairman of the Music Department concerned.

Music 20. Performance and Survey of Music Literature I. This course is divided into two parts. To obtain credit, both parts must be taken.

Performance. Individual lessons arranged by the Faculty of Music. Credit for this course will be determined by the student's progress during the year and by a final performance examination.
Prerequisite: A minimum of the Grade VI level in the instrument.
(The student must pay for individual lessons)..
One hour, half course.

MUSIC

Survey of Music Literature I. Baroque, Classic and Romantic repertoire. Students will be expected to prepare works for class performance.
One hour lecture, One hour lab, half course.

Music 20Y. A listener's course designed to acquaint students with the landmarks of the orchestral, choral and chamber repertoire through guided listening to recordings and live performance.
Two hours, plus lab.

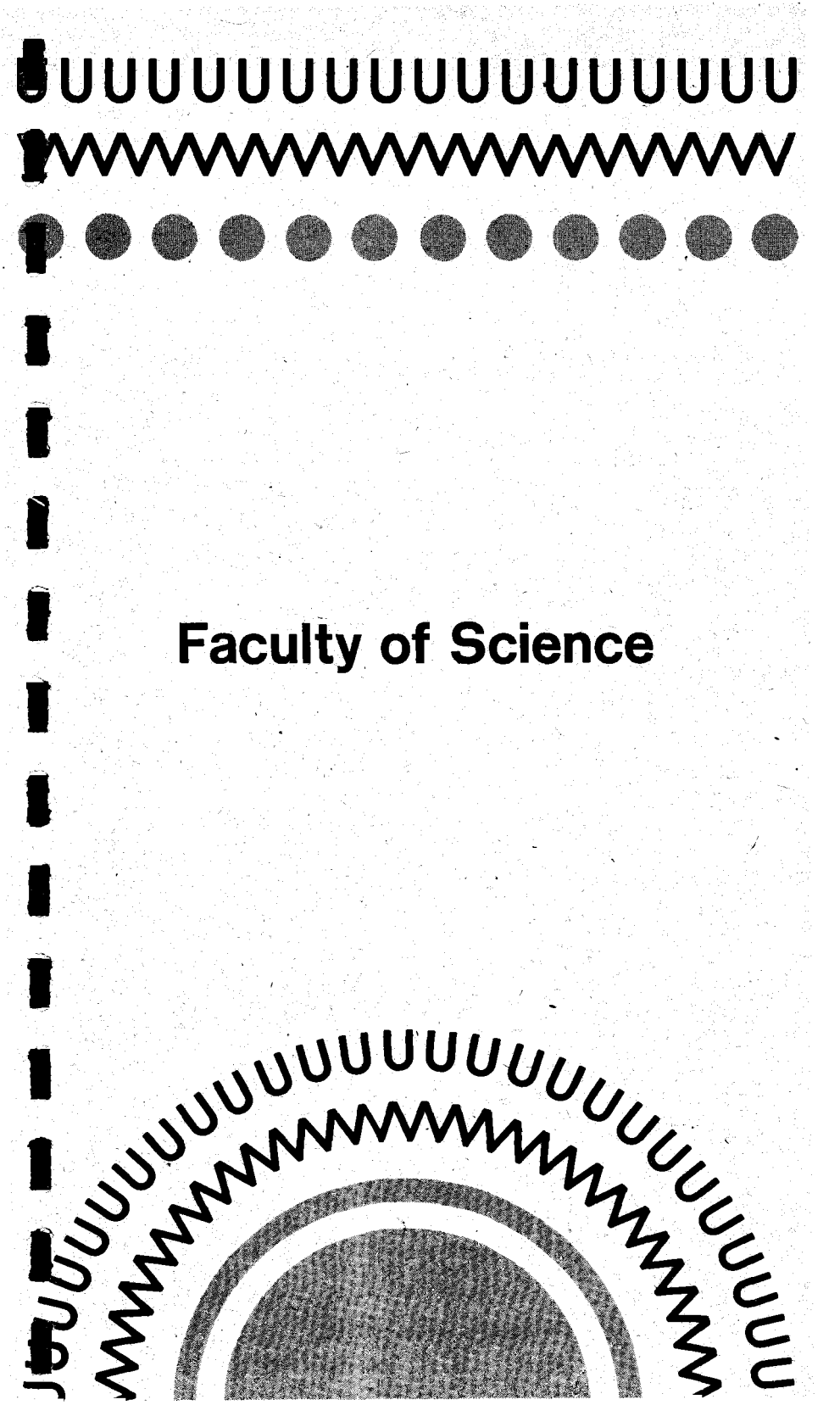
Music 30. Performance and Survey of Music Literature II. This course is divided into two parts. To obtain credit, both parts must be taken.

Performance. Individual lessons arranged by the Faculty of Music. Credit for this course will be determined by the student's progress during the year and by a final performance examination.
Prerequisite: A minimum of the Grade VIII level in the instrument.
(The student must pay for individual lessons).
One hour, half course.

Survey of Music Literature II. Music repertoire and performance practices with special emphasis on contemporary trends. Students will be expected to prepare works for class performance.
One hour lecture, One hour lab, half course.

Music 30Y. A continuation of Music 20(Y), including a detailed study of several large-scale compositions from a listener's viewpoint.
Prerequisite: Music 20Y or equivalent.
Two hours, plus lab.

Faculty of Science



Dean
A. E. Scott, BSc, PhD St. Andrews, Professor of Chemistry
Assistant Dean
W. C. Howell, BSc, MSc, PhD, Professor of Chemistry

Faculty of Science

Administrative Offices: Room 108, 679-3781 Natural Sciences Centre

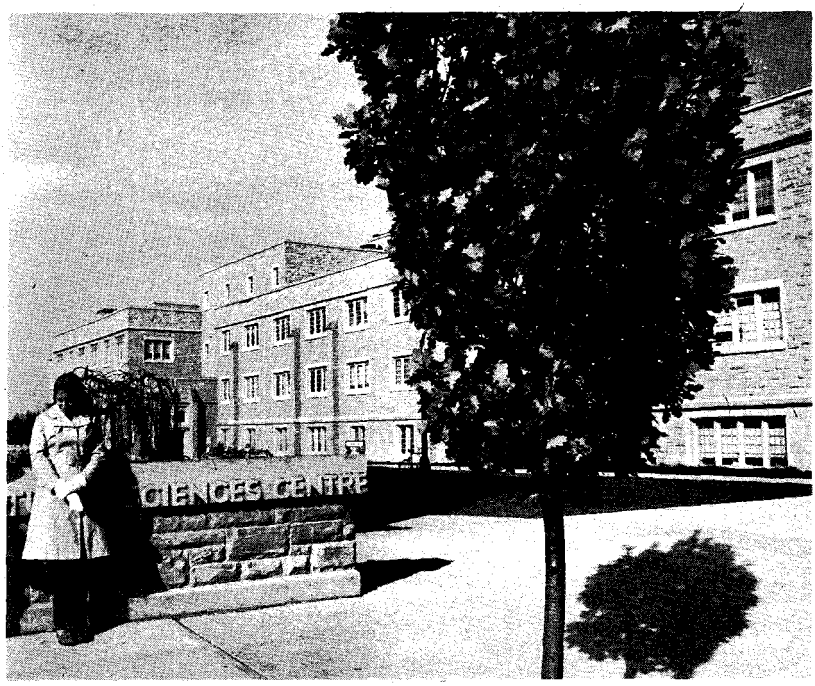
Academic Counsellor
C. A. MacDonald, BSc, PhD

Student Counselling Office: Room 230, 679-3095 Natural Sciences Centre

A description of the programs and courses offered in the Faculty of Science and a listing of its members of Faculty will be found on the following pages, organized under Departments (or Program). For further information, reference should be made to the first section of this Calendar and to the booklet, "General Information".

A student in the Faculty of Science is governed by the academic regulations contained in this section and also in the general section of the Calendar. Requirements applicable to particular programs of study are cited by the Department offering the program. In addition, certain courses are subject to individual prerequisites.

The student is advised to read and consider carefully all regulations and, in cases of doubt as to the precise meaning of any statement or regulation, to consult the Office of the Dean or the Department concerned.



ACADEMIC COUNSELLING

The Faculty of Science has established a full-time Academic Counselling Office for all students registered or intending to register in the Faculty. This service is provided independently of the special Summer Academic Counselling Program for First Year students; nevertheless, incoming Freshmen making use of the Summer Program are invited to supplement that program by consulting directly with individual Departments through the Faculty Counselling Office. More complete details may be obtained by application to the Office of the Dean in person or in writing. While counselling is available on a year-round basis, it is important that students seeking either general guidance or solutions to particular problems do so prior to Registration in September. Only in this way can maximum benefit be achieved for all concerned and the confusion and frustration frequently encountered at Registration be held to a minimum. To this end, students are urged to communicate with the Office of the Dean immediately after the issuing of the Spring Examination Reports in person or by correspondence.

PROGRAMS OF STUDY

The Faculty of Science offers:

Three Year Programs leading to the degree, BA, General Program, with or without an approved area of concentration (major subject), in accordance with the revised regulations set forth below. Approved areas of concentration are available only in:

Computer Science

Geology

Mathematics

Three Year Programs leading to the BSc degree, and which require concentration in a major subject, in accordance with the regulations described below. Approved programs are now available in the subject areas:

Applied Mathematics

Biology

Chemistry

Computer Science

Geology

Geophysics

Mathematics

Physics

Four Year Honors Programs leading to an Honors BSc degree. These are available in the following disciplines:

Anatomy

Applied Mathematics

Astronomy

Bacteriology and Immunology

Biochemistry

Biology

Biophysics

Chemistry

Computer Science

Genetics

Geology
Geophysics
Mathematics (Hons. BA and BSc)
Physics
Physiology
Physiology and Pharmacology
Plant Sciences
Zoology

Full details of the programs in specific subjects or disciplines will be found in the sections of individual Departments.

A student who intends to complete a BA degree, Home Economics option would register in the Faculty of Science.

A student intending to enter Dentistry, Medicine, Physical Therapy, or Communication Disorders is advised to register initially in the Faculty of Science (Natural Sciences) and to consult the Calendar entries of the Faculty of Dentistry and the Faculty of Medicine for further guidance. A student registered in a Science program is also eligible to apply for admission to programs in Business and Law.

Availability of Options

The student's choice of course options within any academic program is subject to the constraints both of the lecture time-table and enrolment limitation.

Accuracy of Registration

It is the responsibility of the student to ensure the completeness and accuracy of his registration. Students are advised to consult the Academic Counselling Office should any problem arise in course selection or registration.

First Year

The purpose of the First Year General Program is to offer one year of unspecialized education and to defer the selection of a specific degree program until the second year. Thus the student can make a decision as to his future program on the basis of university work which may include subjects not available in the secondary school. On the successful completion of the First Year General Program the student is eligible to register in the second year of one of the Three Year Science Programs or one of the Honors Science Programs or the second year of programs in other Faculties (Arts, Engineering Science, and Social Science) provided that course prerequisites are fulfilled. Similarly, admission to senior programs in the Faculty of Science from First Year Programs in other Faculties is subject only to the fulfilment of specific requirements.

ADMISSION REQUIREMENTS

Full details of the academic requirements for admission in (1973-74) to the First Year General Program, Natural Sciences, are provided in the "General Information" book. While there are no specific course prerequisites for initial admission to the Faculty of Science, students intending to enter Science programs are advised to include in their High School preparation Grade XIII mathematics ("Calculus" AND either "Algebra" or "Relations and Functions") and at least one other Grade XIII science subject. Every program in the Faculty of Science, with the exception of the unstructured General BA program, must include a "first year" course in Mathematics (Mathematics 20, 24, or 27, or Applied Mathematics 20). In most instances this course must be taken before commencing many Second Year

Programs; in a few cases it may be included in the second year of study. Grade XIII mathematics, as specified above is a prerequisite to the first year mathematics courses (and also Physics 20 and 22) and therefore a student admitted to the Faculty of Science lacking standing in Grade XIII Mathematics must complete its equivalent, Mathematics 10, before proceeding to register in one of Mathematics 20, 24, 27, or Applied Mathematics 20 or Physics 20 or 22. In this event, any of these courses required for progression to Second Year would have to be completed at Summer School.

ELECTION OF FIRST YEAR COURSES

The courses open to a student in the First Year General Program are grouped into four divisions: Faculty of Arts, Faculty of Science, Faculty of Social Science and Electives. The student registering in the First Year General Program must select 5 courses, with inclusion of at least one from each of two of the Faculties of Arts, Science and Social Science and no more than one in any given subject area. To be eligible for registration in the Faculty of Science the student must elect a number of Science courses greater or equal to the number of courses elected in either of the Faculties of Arts or Social Science. A sixth course may be added to the normal five first year courses with the permission of the Dean of Science. More complete details and a listing of the courses open to Freshmen are given in the General Information Book.

It is the student's responsibility to choose courses which fulfill the prerequisites for the senior program and courses in which he may wish to continue his studies in second year.

Special prerequisites are stated in the listing of the individual Departments of the Faculty. If in doubt, students should seek appropriate counselling and consult directly with the Department concerned.

THREE YEAR PROGRAMS

Following successful completion of the First Year General Program, a student may continue his studies for a further two years in a program leading to either a BA degree or a BSc degree.

The General BA Program is relatively unstructured and is designed to permit a student wide latitude in determining a program of study to satisfy his personal interests. At the same time, the opportunity exists in a few instances (Computer Science, Geology, Mathematics) to select an area of concentration within the program. For many purposes a major subject or area of concentration is desirable and the student is urged to consider this possiblity and to seek counselling in establishing a suitable program.

The Three Year BSc Program is a more structured program requiring the student to establish a major subject or area of concentration in his studies and is intended for those students who have a committed interest in Science and a firm idea of the particular discipline in which they wish to proceed. It is designed to permit a modest degree of specialization in one or two subjects to meet the requirements for further study or employment in certain fields while allowing considerable freedom of choice in selecting ancillary areas of interest.

GENERAL REGULATIONS FOR THE BA DEGREE

The requirement for graduation in the General BA Program is completion of a program of fifteen courses subject to the following conditions:

(a) inclusion of at least one course each from any two of the Faculties of Arts, Science and Social Science;

(b) inclusion of at least seven senior courses (courses numbered 30 or higher);

(c) inclusion of not more than eight courses in any one subject;

(d) achievement of a D grade or higher in each course counted for graduation;

(e) achievement of an overall numerical average of 60% or higher, in the courses counted for graduation.

NOTE:

Optional areas of concentration are offered, at the discretion of each of the Departments of the Faculties concerned, subject to the following provisions:

(i) an area of concentration is defined as four senior courses specified by the Department concerned as meeting its requirements; additional courses offered by the Department may be taken subject to the General BA program regulations (see section (c) above);

(ii) declaration of an area of concentration in the General Program should be made by the student at the beginning of Year II;

(iii) the area of concentration will be designated on the official transcript upon graduation.

GENERAL REGULATIONS FOR THE BSc DEGREE

The student shall select on entering the Second Year a major subject or approved area of concentration in the Faculty of Science and include in this program at least FOUR senior courses in this particular subject in accordance with any Departmental specifications. The major Department or the advisor for the approved area of concentration should be consulted in the choice of the Faculty of Science courses. The student's choice of program and any changes in that program must be approved by the Dean of the Faculty of Science.

The requirement for graduation in a Three Year BSc Program is completion of a program of fifteen courses subject to the following conditions:

(a) inclusion of at least ten courses from the offerings of the Faculty of Science;

(b) inclusion of at least two courses offered outside the Faculty of Science;

(c) inclusion of at least eight senior courses;

(d) achievement of a D grade or higher in each course counted for graduation;

(e) achievement of an overall average of at least 60% in the courses counted for graduation and an average of at least 60% in the minimum number of senior courses required in the major subject or approved area of concentration.

MAINTENANCE OF ACADEMIC STATUS

The minimum level of academic achievement acceptable for graduation from a Three Year Program is 60% over the fifteen courses counted for graduation. While a student is not required to pass all courses taken in any given academic session, he is expected to make reasonable progress in accumulation of the course credits required for graduation. For details see the Grade Point Scale employed to determine the minimum level of satisfactory performance for progression in the program.

HONORS PROGRAMS

Subsequent to the First Year General Program, a student may continue his studies for a further three years in one of the Honors Programs offered by the Departments of the Faculty. These programs, which lead to the Honors BSc Degree (and Honors BA in Mathematics), are intended for those students who wish to concentrate in depth in one or two subjects for the longer period. They are designed primarily as preparation for direct entry to graduate studies or to meet the requirements for certification or employment as specialists in these disciplines. As a consequence, the Honors Programs are usually more highly structured and heavier in load than the corresponding Three Year BSc Program.

In the case of the Biological Sciences, Chemistry and Geology, formal admission to the Honors Program commences with the Fourth Year after successful completion of the Three Year BSc Program. For more complete details see the individual Department listings.

While students are not registered in specific Honors Programs during their first year at this University, there are specific requirements for admission to the Second Year of all Honors Programs which are based upon the courses selected and the standing obtained in First Year. In each of the four years of study, those courses considered to be core subjects and essential to the development of the specialization are designated as *Principal* Courses; peripheral or optional subjects are designated as *Subsidiary* Courses.

A student expecting to enter an Honors Program should review the requirements of the particular program(s) before selecting his options in First Year.

Admission to Second and Subsequent Year

A student qualifies for admission *automatically* if, for the previous year, he has obtained a grade average of at least 70%, with no grade less than 60%, *in the principal courses* and a passing grade in every subsidiary course.

A student who fails to qualify for automatic admission but who has a grade average of at least 60% in the Principal courses and a passing grade in every course, may be admitted at the discretion of the Department(s) concerned; students in this position are urged to consult with the Department(s) for consideration.

If, at the end of the Second or Third Years, a student fails to meet the requirements for continuance in the Honors Program, or decides not to continue in Honors, he may revert to one of the Three Year Programs but he must meet all the requirements of that program prior to graduation.

Honors Graduation Requirements

A student who has a grade average of at least 60% in the Principal courses of the Fourth Year and a passing grade in every course will automatically graduate with an Honors degree.

A student who has a grade average below 60% in the Principal courses at the Fourth Year but has a grade average of at least 60% in all the Principal courses of the Third and Fourth Years, and a passing grade in every course, may graduate with an Honors degree only on the recommendation of the Department(s) concerned.

A student who passes all courses in the Fourth Year of an Honors Program for the degree of Bachelor of Arts or Bachelor of Science and satisfies all other requirements for graduation, but fails to qualify for an Honors degree, shall be awarded a BA or BSc degree without designation. Such a student may write a

subsequent examination to qualify for an Honors degree. When these qualifications have been met he must return his original diploma to the Registrar in order that it may be replaced.

FACULTY OF SCIENCE COURSES

The Faculty of Science offers two courses of a general nature which are not associated with any individual Department of the Faculty.

Contemporary Science A*

This is a general course in the physical sciences for non-science students who are assumed to have no previous education in science or mathematics. The objective of the course is to provide the student with a non-mathematical but meaningful understanding of the nature and goals of some areas of contemporary science. Boundaries between the traditional disciplines of Chemistry, Geology, Mathematics and Physics will be ignored in an attempt to recognize the interdisciplinary nature of modern scientific research.

This course has no prerequisites and will not be accepted as a prerequisite for other science courses. No student may count for credit both this course and a "20-level" course in another physical science.
Enrollment may be limited.
3/lecture/demonstration hours.

Contemporary Science B*

This is a course in the general Life Sciences which is designed for non-science students. It deals with topics related to the pollution of the natural environment and is intended to prepare the registrant to play a constructive and intelligent role in the programs which must be promoted to preserve the environment as the life supporting medium. Major biological principles, an understanding of which is essential, will be dealt with using visiting lecturers as required to present all facets of this interdisciplinary subject. Essays and seminars will provide for personal participation. No student may count for credit both this course and a "20-level" course in the biological sciences. (This course has no prerequisites and will not be accepted as a prerequisite for other science courses).
Enrolment may be limited.
3/lectures/demonstration, laboratory hours - 4.

*NOTE: Contemporary Science A and Contemporary Science B cannot be used to fulfil the requirements for graduation for a BSc degree or any honors degree program in the Faculty of Science.

HISTORY OF SCIENCE COURSES

The following courses are presented by the Department of History of Medicine and Science (Faculty of Medicine) in cooperation with the Faculty of Science.

Science 200 (History 200) History of Scientific Thought. A survey of the development of scientific ideas and their impact on society from antiquity to the beginning of the 20th century. This course is intended primarily as an honours option for history or science majors, but is open to other interested students as well.
3 Hours per week, Lecture-discussion, Full Course.

Science 210. History of Astronomical Thought. An examination of the development of the major ideas of astronomy and cosmology from antiquity to modern times, with emphasis on the post-Copernican era. The course is intended primarily for undergraduates who have already taken an introductory course in astronomy, but is open to other interested students as well.
3 Hours per week, Lecture-discussion, Half Course.

***Science 310a. (History of Science 310a.) The Emergence of Modern Biology.** Problems, ideas and methods which have been central to the emergence of the modern biological sciences. Focus on the nineteenth century, during which the basic areas of investigation comprising biology emerged as professional, experimental fields. Topics include neurophysiology, respiratory and digestive physiology, cell theory, evolution, and origins of genetics.
3 Hours per week, Lecture, Half Course.
* Proposed for 1973-74

***Science 312b. (History of Science 312b.) The Chemical Revolution and Its Milieu.** The transition from traditional chemistry based on herbalist, metallurgical, and alchemical practices, to the modern experimental science of the nineteenth century. Examination of the interactions between conceptual and experimental factors; between developments within the science itself, the growth of large-scale industries, and the organization of research laboratories.
3 Hours per week, Lecture-discussion, Half Course.
* Proposed for 1973-74

***Science 316b. (History of Science 316b.) Science, Scientists, and Society.** Interrelations between science, scientists, and society in which they operate. Historical examples primarily from the nineteenth century to the present, including the role of political ideologies in science, issues involved in scientists' participation in war research, impacts of an increasingly automated technology on society, and public images of the scientist.
2 Hours per week, Lecture-discussion, Half Course.
* Proposed for 1973-74

***Science 318b. (History of Science 318b.) The Development of the Scientist's Self-Image.** A study of the way scientists have viewed themselves and their colleagues over the past three centuries, examined through autobiographies, biographies, eulogies, etc.; what they have sought to achieve, the personal qualities they have admired, what they have defined as acceptable and unacceptable behaviour, and the historical development of such standards.
2 Hours per week, Discussion, Half Course.
* Proposed for 1973-74

Science 440. History of Scientific Ideas. An examination of the historical growth of scientific thought, with particular attention given to the development of the biological sciences during the past two centuries. Note: This course, as in previous years, is intended primarily for fourth year honours students in the biosciences.
2 Hours per week, Lecture-discussion, Half Course.

DEPARTMENT OF ANATOMY

Departmental Office: MS 472

Professor and Chairman of the Department: D. G. Montemurro, BA, MSc, PhD UWO

PROFESSORS: Barr, Buck, Montemurro; ASSOCIATE PROFESSORS: Donisch, Gwinnett, Gwyn, Shaver, Singh, Soltan, Wilson; ASSISTANT PROFESSORS: Altmann, Clattenburg, Flumerfelt, Gammal, Kiernan, Sergovich; HONORARY LECTURERS: Robinow, Walden; INSTRUCTOR: Leyshon.

PROGRAMS

THIRD YEAR

The Third Year of the Honors BSc in Biology in which Biology 309 must be included.

FOURTH YEAR

NOTE: Admission to the Fourth Year from 1974-75 onwards will be only by completion of a Three Year Biology BSc, including Biology 309, with the required academic standing.

With the permission of the Department of Anatomy a student may be admitted to the Fourth Year of the Anatomy Program from the Third Year of another Honors Program, provided Biology 309 or equivalent has been taken.

Principal Courses

Anatomy 441, 460, 461, 462, 463, 464, 480; Science 440 (History of Scientific Ideas)

Subsidiary Courses

Two options selected with the advice of the Department of Anatomy. One of Mathematics 255, Biology 205, Psychology 255 or Biology 312 is required if a course in statistics has not previously been taken.

COURSES

264. Functional Human Anatomy. For students in the Physical and Health Education Program.
1 lecture, 2 laboratory hours, (full course).

309. Biology. Histology. A survey of mammalian cytology and microscopic anatomy with emphasis on man and on animals used in medical research.
Prerequisite: A two hundred level Biology course.
2 lectures, 3 laboratory hours, (full course).

441. Seminar. Presentation of assigned topics and discussion of current literature.
1 hour all year, (half course).

460. Gross Anatomy. A survey of human anatomy, given only to Honors Anatomy students.
A minimum of 2 lectures, (full course).
(This course involves an average of 8 hours of laboratory work per week.).

461. Cell Structure. Cytology and histology with emphasis on techniques and recent developments, especially in electron microscopy.
Prerequisite: Biology 309 or equivalent.
2 lectures, one term (half course).

462. Cytogenetics. An examination of chromosome morphology and behavior, including chromosomal abnormalities in man as causes of diseases.
2 lectures, one term (half course).

463. Embryology. The principles of human development.
2 lectures, one term (half course).

464. Neuroanatomy. A course in the anatomy of the mammalian central nervous system, especially the brain of man.
2 lectures, one term (half course).

480. Laboratory. The major laboratory course in various aspects of anatomy for students in the fourth year of the program.
A minimum of 10 hours, (full course).

APPLIED MATHEMATICS

Department Office: EMS 3002

Chairman of the Department: Blackwell J. H.,ED: BSc, Melbourne: MSc, PhD UWO

PROFESSORS: Blackwell (Chairman), Dennis, Ehrman, Fraser, Naylor, Sakmar, Talman. ASSOCIATE PROFESSORS: Deakin, Luke, MacNeill, Manuel, Nerenberg. ASSISTANT PROFESSORS: Clements, Migneron, Sullivan, Zamir. VISITING ASSISTANT PROFESSORS: Blackburn, Rogers, Scott.

PROGRAMS

The Department of Applied Mathematics offers both an Honors Program leading to an Honors BSc degree after four years of study, and a three year program leading to a BSc degree. Students enter both programs at the Second Year level after the successful completion of a First Year in a General Program.

THREE YEAR BSc PROGRAM — APPLIED MATHEMATICS MAJOR

Requirements for Admission

A First Year General Program with Applied Mathematics 20 or Mathematics 24 or Mathematics 27 and Physics 20 or Physics 26 as principal courses. See general regulations for the Three Year BSc degree program.

The following are two approved options. Other options may be set up in consultation with the Department. Students are required to consult the Department of Applied Mathematics before selecting their courses.

Option I

SECOND YEAR

Applied Mathematics 200, 202

Physics 252, 256

One option

THIRD YEAR

Applied Mathematics 300, 361b, 403a

Three options

Option II

SECOND YEAR

Applied Mathematics 202 and either 200 or 270

Mathematics 36

Two options

THIRD YEAR

Applied Mathematics 301a, 361b, 380, 403a, 404b

Two options

BSc HONORS PROGRAM

Four options are open to students in the Honors Applied Mathematics Program, the second year being common to the first three of these options.

Requirements for Admission

A First Year General Program with Applied Mathematics 20 or Mathematics 24 or Mathematics 27 and Physics 20 or Physics 26 as principal courses. For the Chemistry Option, Chemistry 20 or 23 is an additional prerequisite.

Students entering Third Year Applied Mathematics from Second Year Physics must take Mathematics 256 instead of one of their principal course options in Third Year. It may be possible for students to enter Third Year Applied Mathematics from Second Year Computer Science if they have the required prerequisites. They can obtain these requirements by consulting the Department of Applied Mathematics.

The Department is considering a modification of the Second Year in all Options of the Honors Program in Applied Mathematics except the Chemistry Option. Students are urged to contact the Department for details.

(1) Continuum Mechanics Option

SECOND YEAR*

Principal Courses

Applied Mathematics 200, 202

Mathematics 256

Physics 250, 265

Subsidiary Course

One option**

THIRD YEAR*

Principal Courses

Applied Mathematics 300, 350, 351a, 352b, 361b

Physics 365

One full course equivalent from: Applied Mathematics 302a, 303b, 403a***

Mathematics 350, 356; Physics 353, 357

Subsidiary Course

One option

FOURTH YEAR*

Principal Courses

Applied Mathematics 400, 420a, 421b, 452

Two and one-half full course equivalents from: Applied Mathematics 302a, 303b, 403a***, 404b, 453, 454, 460; Physics 353, 468

(2) Theoretical Physics Option

SECOND YEAR*

Same as the Second Year of the Continuum Mechanics Option

THIRD YEAR*

Principal Courses

Applied Mathematics 300, 302a, 350, 351a, 361b

Physics 365

One full course from: Mathematics 350, 356; Physics 353, 357

Subsidiary Course

One option

FOURTH YEAR*

Principal Courses

Applied Mathematics 400, 403a, 420a, 421b, 454

Two full course equivalents from: Applied Mathematics 303b, 404b, 452, 453, 460; Physics 353, 462, 464, 467, 468.

(3) Applied Analysis Option

SECOND YEAR*

Same as the Second Year of the Continuum Mechanics Option

THIRD YEAR*

Principal Courses

Applied Mathematics 300, 350, 351a, 361b

One full course equivalent from: Applied Mathematics 302a, 303b; Physics 365

One full course from: Computer Science 304; Engineering Science 436; Mathematics 350, 356

Subsidiary Course

One option

FOURTH YEAR*

Principal Courses

Applied Mathematics 400, 403a, 404b, 460

Mathematics 453

Two full course equivalents from: Applied Mathematics 452, 453, 454; Computer Science 304, 460a, 461b; Mathematics 460

(4) Chemistry Option****

SECOND YEAR

Principal Courses

Applied Mathematics 200, 202

Chemistry 250, 254

Physics 250, 256

THIRD YEAR*

Principal Courses

Applied Mathematics 300, 350

Chemistry 252, 354b, 374a

Physics 365

Subsidiary Course

One option****

FOURTH YEAR*

Principal Courses

Applied Mathematics 351a, 361b, 400, 454

Chemistry 350

One full course equivalent from: Chemistry 454a, 464b, 477a, 484b

Subsidiary Course

One option****

*Students should consult the Department before choosing their principal or subsidiary course options. This is particularly important since there may be prerequisites to satisfy in later courses in their programs. Finally, with the approval of the Department, other principal course options may be substituted.

**Students who wish to take Physics 357 in third year must take Physics 264 as their subsidiary course option.

***Applied Mathematics 403a must be taken in either Third or Fourth Year.

****Consult the Department for regulations governing a type A teaching certificate in Mathematics and/or Chemistry.

COURSES

NOTE:

(1) More detailed outlines of these courses can be found in the Department of Applied Mathematics Course Book, a copy of which may be consulted in the Department Office.

(2) In certain cases, the prerequisites and corequisites stated below may be modified but only with the approval of the Department.

20. Introduction to Calculus and its Applications. An extensive treatment of the calculus of functions of one variable is given with emphasis on applications in the Physical and Life Sciences, in Engineering Science, and in the Social Sciences. One of the four hours is devoted to a problems period during which time students receive individual attention.
Prerequisite: Two Grade 13 mathematics credits including a credit in Calculus; or Mathematics 10.
3 lecture, 1 tutorial hour.

22. Introductory Mathematics for Social Sciences. This course is designed primarily to provide beginning students in the Social Sciences with a sound background in the basic mathematics applicable to the Social Sciences; no prior knowledge is assumed. Enquiries are also invited from interested students in other Faculties. Subjects covered include Boolean Algebra, Logic, Break-Even Analysis, Linear Programming, Calculus, Probability and Linear Algebra. Emphasis throughout is on motivation through practical applications. There is a weekly problems class in which students receive individual attention. This course is designed to be a suitable preparation for the quantitative methods courses in the Social Sciences. Subsequent "Mathematics" courses available for Social Science students are: Applied Mathematics 233; Mathematics 37a, 38b, 254. Any other "Mathematics" courses require the consent of the Department concerned.
Applied Mathematics 22 may not be taken for credit by students who are eligible to take Mathematics 21.
Prerequisites: none
3 lecture, 1 tutorial hour.

200. Advanced Calculus and Vector Analysis. Applications of vectors to three-dimensional analytic geometry, functions of several variables, partial derivatives, Taylor's formula, implicit functions, Jacobians, maxima and minima of functions of several variables including the method of Lagrange Multipliers, multiple integrals and their applications, vector fields, the theorems of Green, Gauss and Stokes and their applications, infinite sequences and series. Emphasis is placed on the mastery of technique and subject matter through the working of problems. An informal tutorial is usually scheduled in addition to the 3 lecture hours.
Prerequisite: A minimum grade of C in Applied Mathematics 20 or Mathematics 24 or Mathematics 27.
3 hours.

202. Matrix Algebra and Linear Systems. This course is to develop both technical proficiency in handling matrices and determinants, and an understanding of the relations of matrices to linear vector spaces. Applications to linear equations, geometry, eigenvalue problems and vibrations of mechanical and electrical systems is emphasized. An introduction to ordinary differential equations with applications is included. An informal tutorial is usually scheduled in addition to the three lecture hours.
Prerequisite: A minimum grade of C in Applied Mathematics 20 or Mathematics 24 or Mathematics 27.
3 hours.

233. Statistics for Honors Social Sciences. Standard distributions, statistical inference, regression analysis, experimental design and other related topics are investigated. This course is designed primarily for Honors students in the Social Sciences and cannot be taken for credit by students in "Mathematics" programs.
Prerequisite: Applied Mathematics 22 or Mathematics 20 or Mathematics 21 or the consent of the Department.
3 hours.

270. Engineering Mathematics II. Elementary differential equations and complex numbers, 2x2 and 3x3 determinants, vectors and an introduction to vector calculus, partial differentiation, multiple integrals, Taylor's theorem and an introduction to infinite series and power series. This course and Applied Mathematics 280 cannot both be taken for credit.
Prerequisite: Applied Mathematics 20 or Mathematics 24 or Mathematics 27.
3 hours.

***280. Calculus II.** Functions of many variables, partial differentiation, introduction to vector calculus, divergence, curl, line integrals, multiple integrals, infinite series and power series, introduction to ordinary differential equations. This course and Applied Mathematics 270 cannot both be taken for credit.
Prerequisite: Applied Mathematics 20 or Mathematics 24 or Mathematics 27
3 hours.
Proposed 1973-74

300. Methods of Applied Mathematics I. Ordinary and partial differential equations, special functions of mathematical physics including the Gamma Function, Bessel functions, Legendre functions and Spherical Harmonics, boundary value problems, Sturm-Liouville theory, Fourier series and orthogonal function expansions, the partial differential equations of mathematical physics including Laplace's equation, the diffusion and wave equations. Functions of a complex variable, analytic functions, integration in the complex plane, Taylor and Laurent series, analytic continuation, Cauchy's and Morera's theorems, evaluation of integrals by residue theory, applications to the Physical Sciences. Two hours per week in the first term are devoted to complex variables. The other topics are covered in three lecture hours per week throughout the year.
Prerequisites: Applied Mathematics 200 and 202 or Mathematics 250 and 278
5 hours during first term and 3 hours during second term.

301a. Complex Variables with Applications. Functions of a complex variable, analytic functions, integration in the complex plane, Taylor and Laurent series, analytic continuation, Cauchy's and Morera's theorems, evaluation of integrals using residue theory, conformal mapping and its applications. Credit will not be given for both Applied Mathematics 300 and 301a.
Prerequisite: A senior course in calculus.
3 hours first term only, half course.

302a. Linear Operators in Hilbert Space. Function spaces; norms; Hilbert Space; orthogonal systems of vectors; bounded linear operators; completely continuous operators; Fredholm theorems; self-adjoint operators; spectral theory for these.
Prerequisite: Mathematics 256
Corequisite: Applied Mathematics 300. Consent of the instructor is required if these conditions are not satisfied.
3 hours first term only, half course.

303b. Nonlinear Differential Equations. An introduction to the nonlinear differential equations of physical science and their methods of solution.
Prerequisite: Applied Mathematics 202 or 270 or 280 or Mathematics 278
3 hours second term only, half course.

350. Advanced Classical Mechanics. A logically connected development of classical mechanics including a thorough treatment of Lagrangian and Hamiltonian methods. Special Relativity may be included. Given in collaboration with the Department of Physics (Physics 360).
Prerequisites: Physics 250, Applied Mathematics 200 and 202, or equivalent
3 hours.

351a. Introduction to Continuum Mechanics. The concept of a continuum. Derivation of the fundamental equations describing a continuum. Application to fluids and solids.
Prerequisite: Applied Mathematics 200 or 270 or 280
3 hours first term only, half course.

352b. Introductory Fluid Dynamics. An introduction to Fluid Dynamics, with principal emphasis on ideal fluid flow theory.
Prerequisite: Applied Mathematics 351a
Corequisite: Applied Mathematics 300
3 hours second term only, half course.

360. Numerical Analysis. Numerical solution of algebraic and transcendental equations; numerical solution of simultaneous linear equations; matrix inversion; eigenvalues and eigenvectors of matrices; interpolation; numerical differentiation and integration, including Gaussian integration; numerical integration of ordinary differential equations; summation of series; approximation of functions and tabulated data. Students are encouraged to use the digital computer.
Prerequisites: Applied Mathematics 200 and 202 or Mathematics 250 and 278
3 hours.

361b. Numerical Analysis. Introduction to numerical analysis; solution of nonlinear equations; systems of linear equations; matrix inversion; interpolation; numerical differentiation; numerical integration; introduction to methods of integration of ordinary differential equations.
Prerequisites: Applied Mathematics 202 and 200 or 270 or 280; or Mathematics 250 and 278
3 hours second term only, half course.

370. Engineering Mathematics III. This is a general course in Applied Mathematics for Third Year Engineering Science students covering the following topics; an introduction to numerical methods including finite differences, difference tables, interpolation, numerical differentiation and integration, numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations; linear algebra; Fourier series and transform methods.
Prerequisite: Applied Mathematics 200 or 270 or 280
3 hours.

380. Applied Mathematics for Chemists. Vector calculus, infinite series and power series, solutions of ordinary differential equations with variable coefficients including Bessel's and Legendre's equations, Fouri-

er series and orthogonal function expansions, partial differential equations, linear algebra, and elementary probability theory. Emphasis will be on applications to Chemistry.
Prerequisite: Applied Mathematics 200 or 270 or 280
3 hours.

FOR EACH OF THE FOLLOWING COURSES, unless the prerequisites are stated explicitly, THE CONSENT OF the instructor is required.

400. Methods of Applied Mathematics II. This course is concerned with techniques of problem solution in Applied Mathematics, especially with boundary value problems of partial differential equations. Topics discussed vary from year to year but usually include the following: Green's functions, wave propagation and diffraction, integral transforms, special topics in complex variable theory, an introduction to asymptotic expansions, tensor analysis.
3 hours.

403a. Applied Statistics. An introduction to statistics for application. Discrete and continuous probability distributions; sampling theory; principles of estimation; confidence intervals and F, t, X^2 tests, regression analysis.
Prerequisite: A full course in calculus.
3 hours first term only, half course.

404b. Experimental Design. A discussion of many of the various statistical methods that can be employed to evaluate scientific experiments. Topics covered include the general linear model and multiple regression; analysis of variance and covariance including a discussion of basic complete and incomplete experimental designs. Other topics are selected from Sampling and Quality control; Monte Carlo methods; non parametric methods and decision theory. The specific selection is dependent on the interests of the students enrolled.
Prerequisite: A half or full course in statistics.
3 hours second term only, half course.

420a. Electromagnetic Theory II. Review of Maxwell's equations; conservation laws; plane waves in a conducting medium; reflection, transmission, dispersion of plane waves; wave guides and cavities; radiating systems; diffraction.
Prerequisite: Physics 365
3 hours first term only, half course.

421b. Electromagnetic Theory III. Fields of moving charges; covariant and Hamiltonian formulations of Maxwell's equations; introduction to Plasma Physics and MHD; advanced methods for electromagnetic field problems.
Prerequisite: Applied Mathematics 420a
3 hours second term only, half course.

452. Fluid Dynamics. An advanced course in Fluid Dynamics divided approximately equally between viscous fluid flow and gas dynamics.
3 hours.

453. Solid Mechanics. A first course in the theory of the mechanics of the solid continuum, including elasticity and plasticity.
3 hours.

454. Quantum Mechanics. Wave mechanics, axioms of quantum mechanics, harmonic oscillator, angular momentum, hydrogen atom, perturbation theory, elementary atomic and molecular structure, elementary scattering theory.
3 hours.

460. Advanced Numerical Analysis. A sequel to Applied Mathematics 361b, with particular attention given to the techniques required for numerical solutions of ordinary and partial differential equations.
Prerequisite: Applied Mathematics 360 or 361b
3 hours.

470a. Engineering Mathematics IV. Vector calculus including the integral theorems, ordinary differential equations with variable coefficients, orthogonal function expansions, an introduction to partial differential equations.
Prerequisite: Applied Mathematics 270 or 280
3 hours first term only, half course.

DEPARTMENT OF ASTRONOMY

Departmental Office
Astronomy Building, G-15

Head of the Department
PROFESSOR: Wehlau, W. H., AB PhD California
ASSOCIATE PROFESSORS: Gray, Landstreet, Marlborough, Mitalas ASSISTANT PROFESSORS: Moorhead, A. Wehlau.

Programs

The Department of Astronomy offers an Honors Program leading to the Honors BSc degree. This program in astronomy prepares the student for work in astronomy and related physical sciences; it provides a suitable background for the teaching of the physical sciences at the high school level. Requirements for Admission: First Year General Program (Natural Sciences) with Astronomy 20, Applied Mathematics 20 or Mathematics 24 or 27 and Physics 20, as principal courses.

Students entering or continuing in the Honors Astronomy Program are required to consult with the Department for approval of their programs.

Students planning to enter a graduate school are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

SECOND YEAR

Principal Courses

Astronomy 220

Applied Mathematics 202 or Mathematics 250

Applied Mathematics 200 or Mathematics 278

Physics 250, 264, 265

THIRD YEAR

Principal Courses

Astronomy 320 (or 420)

Applied Mathematics 300

Applied Mathematics 350 or Physics 360

Physics 353, 357

Physics 365

Subsidiary Course

One option

FOURTH YEAR

Principal Courses

Astronomy 420 (or 320)

Four additional courses at the 300 or 400 level from Applied Mathematics, Geophysics, Mathematics or Physics or Science 210. Applied Mathematics 420 and Applied Mathematics 454 or Physics 451 must be included in these courses. In addition the inclusion of Applied Mathematics 421 is strongly recommended.

Subsidiary Course

One course from Arts or Social Sciences

COURSES

20. Astronomy I. An introduction to astronomy for students who are taking Applied Mathematics 20 or Mathematics 24 or 27 and Physics 20 or 22 concurrently, or who have completed these courses previously. The various fields of astronomy will be covered with an emphasis on the quantitative aspects. Selected topics of current interest will be treated in some detail.
3 lecture hours, full course.

21. General Astronomy. A general survey of astronomy as a science. Items considered are the solar system; earth, moon, planets, sun, comets, and meteors; the stars: their nature, distances, motions, size, composition, and evolution; systems of stars: open and globular star clusters, the milky way, stellar populations, interstellar material, and galaxies; the universe: its structure, past and origin; astronomical theories, proof, pseudo-science and semiconventional hypotheses; history of astronomy; astronomical equipment: telescopes and observatories; selected topics of current interest such as quasars, pulsars, X-ray objects, neutron stars, black holes, cosmology. Observations with the six-inch refractor.
Two lecture, one tutorial hour, full course.

Honors Courses

220. Astronomy II. Astrometry; elementary celestial mechanics; binary stars; the solar system: physics of planets and satellites, comets, meteors and the interplanetary medium.
Prerequisite: Astronomy 20 or permission of the instructor.
2 lecture hours, full course.

320. Astrophysics I. Radio Astronomy and Interstellar Material - Electromagnetic theory, plasmas and MHD; antennas and receivers, optical instruments and detectors, calibration; emission and absorption mechanisms; sun, solar wind, planets; pulsars, infrared stars, X-ray stars; interstellar gas, gaseous nebulae, H II regions; gamma ray and neutrino astrophysics; cosmic rays; interstellar dust; galaxies, quasars, cosmology.
3 lecture hours, full course.

420. Astrophysics II. Atomic and stellar spectra, gaseous state of matter and radiation; introduction to the internal structure of stars, to stellar evolution and to stellar atmospheres; stellar motions, galactic structure and stellar populations.
3 lecture hours, full course.
Not offered 1973-74

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Medical Sciences Building

Head of Department

Murray, R. G. E., BA, MA Cantab; MD, C. M. McGill; FRSC.

PROFESSORS: Fitz-James, Murray, Robinow, Whitby. CLINICAL PROFESSOR: Hatch. ASSOCIATE professors: Ebisuzaki, Medzon, Robinson, Zajic. CLINICAL ASSOCIATE PROFESSOR: Bakerspigel. ASSISTANT PROFESSORS: Black, Cheevers, Percy, Rozanis, Sinclair, Singhal, Strejan, Wilkins. CLINICAL ASSISTANT PROFESSOR: Campsall. HONORARY LECTURERS: Chodirker, Hannay, Roslycky, Toogood. LECTURER: Galsworthy.

The Department of Bacteriology and Immunology offers courses in the Faculties of Dentistry, Engineering, Graduate Studies, Medicine and Nursing as well as those outlined below.

PROGRAMS

This Department is participating in the introduction of a new Three Year BSc Biology Program which was initiated in September 1972. Concomitant with the introduction of this new program the present Honors BSc Program will be phased out and replaced by a new Fourth Year Honors Program.

For the 1973-74 academic year students will continue to be admitted to a Fourth Year Honors Program on the same basis as in previous years; students registered in the Third Year Honors Program in 1972-1973 may progress to the Fourth Year. In the program listings which follow, where certain courses have been redesignated or modified because of the new program, the new listing is given first followed by the former name in parentheses. Students in the Fourth Year Honors Program will be required to take the equivalent of six full courses.

FOURTH YEAR

Principal Courses

Bacteriology and Immunology 480 plus the equivalent of at least three full courses from the following: Bacteriology and Immunology 460, 461b, 462b, 465b, 467a, 470a, 471b, 472b.

Subsidiary Courses

Two courses selected with the approval of the Department. Science 440 and Math 255 (or equivalent) are recommended for those who have not taken equivalent courses.

Special Department Advice

a. Students beginning in this program should carefully determine the prerequisites or corequisites necessary for courses in subsequent years.

b. Students who plan to continue into graduate studies are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

202. Biology (Bacteriology 300). Microbiology (Given by the Departments of Bacteriology and Immunology and Plant Sciences).
A comparative study of the morphology, biology and relationships of algae, bacteria, fungi, protozoa and viruses.
Corequisite or prerequisite - Biology 200
2 lectures, 3 laboratory hours.

306. Biology, Bacteriology, Virology and Immunology. This course will consider the distinguishing features, the importance to man and the interrelationships among the major groups of bacteria and viruses. It will also consider the basic concepts of immunology and its application to the biological sciences. Prerequisite - Biology 200
Prerequisite or corequisite Biology 300 or 301
2 lectures, 3 laboratory hours.
Not to be given in 1973-74

307. Biology Applied Microbiology. (Given by the Departments of Bacteriology and Immunology and Plant Sciences).
A survey of selected topics in agricultural and industrial microbiology with reference to food microbiology, fermentation reactions, single cell protein synthesis, the principles of plant disease control and applied immunological techniques.
Prerequisites or Corequisites Biology 200 and Biology 202 and Biology 300 or 301
2 lectures, 3 laboratory, tutorial or demonstration hours.

460. Bacteriology Advanced Microbiology. An advanced treatment of the biology and physiology of microbes with particular emphasis on the bacteria.
In 1973-74 this course will contain virology and immunology components as described in course 306.
Prerequisite Biology 202 or 306; Biology 300 or 301
2 lectures, 3 laboratory hours.

461b. Bacteriology Microbial Anatomy. A survey of cytological methods and applications to the understanding of the structure of procaryotic organisms, protozoa and fungi.
Prerequisites Biology 202 or Biology 306
1 lecture, 3 laboratory hours, one term only half course.

462b. Bacteriology Advanced Virology. Current topics on the biochemistry of virus-cell interactions.
Prerequisite Biology 300 or Biology 301; Biochemistry 461 strongly recommended
2 lectures, one term only Half course.

465b. Bacteriology Microbial Biochemistry. Topics involving the biochemical activities and processes of microbes.
Prerequisites: Biology 300 or 301
2 lectures, one term only Half course.

467a. Bacteriology Microbial Genetics. Aspects of genetics applying to micro-organisms. (Given in collaboration with the Department of Plant Sciences).
Prerequisites or corequisites Biology 308, Biology 300 or Biology 301
2 lectures, 3 laboratory hours, one term only Half course.

470a. Bacteriology Immunology. A course concerned with immunological theory and interpretation of basic and medically applied immune phenomena. (Given in collaboration with the Department of Medicine).
Prerequisite Biology 200 or equivalent
2 lectures, one term only Half course.

471b. Bacteriology Immunobiology. An advanced course dealing with cellular mechanisms involved in the immune response, the ontogeny and phylogeny of the immune response, general concepts in immunopathology and immunological diseases, and other topics of current interest.
Prerequisite - Bacteriology and Immunology 470a or its equivalent
2 lectures, 3 laboratory hours, one term only Half course.

472b. Bacteriology Immunochemistry. An advanced course on the properties of antigens and antibodies, on their chemical structure and on their interactions in vitro and in vivo.
Prerequisite - Bacteriology and Immunology 470a or equivalent
2 lectures, 3 laboratory hours, one term only Half course.

480. Bacteriology (Bacteriology 441 and 480). To give training in the techniques employed in modern microbiology with emphasis upon individual effort and resourcefulness. Designed expressly for fourth year honors students in the Department of Bacteriology and Immunology and to allow further elaboration of the technical content of the courses offered in the department. Other students require the permission of the department to take this course. Tutorials would include a critical review of scientific papers, laboratory data and the presentation of scientific reports. 5 hours, Laboratory, Tutorial.

DEPARTMENT OF BIOCHEMISTRY

Department Office: MS 316

Acting Chairman: Dr. K. P. Strickland BSc: MSc: PhD UWO
PROFESSORS: Bigelow, *Brownstone, Carroll, Fitz-James, *Hobkirk, McCarter, McMurray, Rossiter, Smith, Stewart, Strickland; Acting Chairman of Department. ASSOCIATE PROFESSORS: Ball, *Griffiths; Chairman of Division of Clinical Biochemistry BS Wales; MB BCh Welsh National; FCSCC. Heagy, Magee, *Tustanoff, Walker, Webling. CLINICAL ASSOCIATE PROFESSORS: *Binns Smith, *Haines, *Haust. ASSISTANT PROFESSORS: Cook, Donisch, Galsworth, *Garg, Gatfield, Gordon, Guthrie, McDonald, Possmayer, Trevithick. INSTRUCTOR: Boyadjian. HONORARY LECTURERS: Cheevers, Chefurka, Hudson, Krupka, MacPherson, Spencer, Vardanis, Wolfe.

*Member of Division of Clinical Biochemistry

The Department of Biochemistry offers undergraduate programs in the Faculties of Medicine, Dentistry and Nursing as well as those outlined below.

The Department participates in the Biology BSc Three Year Program. An Honors Program leading to the BSc degree is also offered.

REQUIREMENT FOR ADMISSION TO HONORS PROGRAM

Students who plan to continue into graduate studies are advised to select options which will satisfy the foreign language and credit required by many graduate schools.

Fulfilment of the requirements for a BSc Biology Three Year Program with the standings and conditions described admits a student to Fourth Year Biochemistry Honors.

Fulfilment of requirements for a BSc Chemistry Three Year Program with standings essentially the same as for the BSc Biology Three Year Program and with inclusion of Biology (Biochemistry) 300 admits a student to Fourth Year Biochemistry Honors. The Department of Biochemistry should be consulted.

ALTERNATIVE ENTRY INTO THIRD YEAR BIOCHEMISTRY HONORS

are one of:

(a) Second Year Program in Honors Chemistry.

(b) Other Honors Programs. With permission of the Department of Biochemistry and the Dean of Science, the Second Year of such other Honors Programs as permit inclusion of a course in Organic Chemistry.

(c) Second Year of Chemistry BSc program. The Department of Biochemistry should be consulted regarding acceptable standards.

THIRD YEAR PRINCIPAL COURSES

Biology 300

Three full courses or equivalent from:

Biology 202

Biology 209

Biology 302

Biology 309

Biology 310

Biology 311

Chemistry 353

Chemistry 354

Other Chemistry courses equivalent to one full course with permission of the Department.

SUBSIDIARY COURSES

Two options

Mathematics 20, 24, 27 or Applied Mathematics 20 is required for students who have not had a University course in Mathematics; Chemistry 204 or 254 is required for students who have not had a University course in Physical Chemistry.

FOURTH YEAR PRINCIPAL COURSES

Science 440

Biochemistry 460

Biochemistry 461

Biochemistry 464b

Biochemistry 468a

Biochemistry 480

Any two half courses or one full course from Biochemistry, Biology, Chemistry or the Health Sciences at the 300 or 400 level with the approval of the Department of Biochemistry.

SUBSIDIARY COURSES

Mathematics 255 or equivalent (if not already taken).

One additional option may be elected with the permission of the Department of Biochemistry.

COURSES

In any one program, credit towards a degree can be obtained for only one of Biochemistry 36, 400, Biology 300, 301.

36. Biochemistry and Nutrition. A survey course for Home Economics and General Program students.
Prerequisites: Chemistry 33 or 203
3 lectures.

300. Biochemistry 300. A survey for Honors students.
Prerequisite: Chemistry 203, 250 or 313
Prerequisite or Co-requisite: Chemistry 204, 254 or 214
3 lectures, 2 laboratory hours.

400b. Biochemistry. A survey of primarily metabolism aspects of biochemistry for students in Honors Chemistry (Given in conjunction with the Department of Chemistry).
Prerequisite: Chemistry 356 or 456
3 lectures, half course.

356b. Bio-organic Chemistry. Applications of organic chemistry to biological systems. Enzymes and catalysis; a brief survey of metabolism; natural products and their biosynthesis; protein structure and synthesis; drug design; enzymes in industry.
Prerequisite 353a (In 1973-74 - Chemistry 353 is a corequisite)
2 lectures, second term half course.
(This course is not an acceptable pre-requisite for any fourth year course in Biochemistry. Students may not obtain credit for both this course and Biology 300 or 301. (given jointly by the Department of Chemistry and Biochemistry).

301. Biology General Biochemistry. A survey for students in Biology programs.
Prerequisite: Chemistry 33 or 203
2 lectures, 3 laboratory hours.

460. Biochemistry Metabolism. An advanced treatment of intermediary metabolism.
Prerequisite: Biochemistry 400 or Biology 300 or 301
2 lectures.

461. Biochemistry Structure and Metabolism of Nucleic Acids. A discussion of the role of the nucleic acids in protein synthesis.
Prerequisite: Biochemistry 400 or Biology 300 or 301
2 lectures.

463b. Biochemistry Current Topics. A discussion of contemporary topics in the field of biochemistry.
Prerequisite: Biochemistry 400 or Biology 300 or 301
2 lectures, one term only half course.

464b. Biochemistry Enzymology. A survey of the principles of mechanism and function of enzymes.
Prerequisites: Biochemistry 400 or Biology 300 or 301
2 lectures, one term only half course.

468a. Biochemistry Physical Biochemistry. A discussion of the physicochemical properties of macromolecules of biological interest.
Prerequisite: Biochemistry 400 or Biology 300
2 lectures, one term only half course.

480. Biochemistry Research and Seminar. Designed to give training in techniques and methods at the advanced level; emphasis is laid upon individuality of work and resourcefulness. Included in the sessions is a review and evaluation of current literature in a series of seminars involving student participation.
10 hours.

BIOLOGY

PROGRAMS

The seven Biological Science Departments within the Faculty of Science jointly offer a BSc degree with an area of concentration in Biology after three years of study. Three Year BSc Biology students who have fulfilled the necessary requirements (see below) may progress to a Fourth Year Honors Program in one of the following disciplines:

Anatomy
Bacteriology and Immunology
Biochemistry
Biology
Biophysics
Genetics
Physiology
Physiology and Pharmacology
Plant Sciences
Zoology

The Biology BSc Three Year Program is designed to provide the student with a basic background in Biology (through three core courses) and in other sciences such as Mathematics, Chemistry and Physics. In addition, the Program offers

considerable flexibility in the choice of optional Biology courses, so that a student may sample many of the disciplines of biology or may begin to specialize. Further opportunities for specialization are available in the Fourth Year Honors Programs.

The Three Year BSc Biology Program offers the students several possible career alternatives. The basic program would be adequate training for certain careers (high school teaching*, public school teaching*, technical work in industry, and in public health, etc.) or for entry into professional Health Programs (Medicine and Dentistry Alternatively, it could lead to Honors Programs or to a qualifying year in graduate school.

The Honors Programs provide a basis for professional work in academic, government or industrial fields. From an Honors Program a student could progress to an Interim High School Assistants' Certificate Type - A*.

*Anyone intending to apply to a College of Education should consult with the Assistant Registrar, Althouse College of Education, before registration in Second Year in order to plan an undergraduate program which will be suitable.

BSc BIOLOGY

Three Year Program

The Requirement for Graduation is completion of a program of fifteen courses subject to the following conditions:

i) of the fifteen courses, at least 10 courses must be from the Faculty of Science and include the following:

Biology 20

Chemistry 20

A mathematics course at the twenty level (one of Mathematics 20*, 24, 27, or Applied Mathematics 20) which is recommended in First Year and must be completed by the end of Second Year.

Five senior courses in Biology, including Biology 200 and 201 which must be taken in Second Year.

Chemistry 203, or, 250 and 252;

ii) of the fifteen courses, at least two must be from outside the Faculty of Science;

iii) of the fifteen courses, eight must be senior courses;

iv) achievement of a minimum average of 60% in the courses counted for graduation and a minimum average of 60% in five senior courses in Biology.

***NOTE:** Mathematics 20 will not fulfill the mathematics requirements for all Honors Programs. (Please consult the Calendar listing(s) of the departments concerned.

The student should consult the general section of this Calendar for details of academic regulations, grades required for admission and progression, which pertain to this program of study in the Faculty of Science. The specific course requirements are outlined below.

REQUIREMENTS FOR ADMISSION. If a student proposes to register in the Three Year Biology BSc. his program in First Year must include Biology 20 and Chemistry 20. Training in other sciences such as mathematics, physics and chemistry is essential for an appreciation of modern biology, therefore it is

recommended that students consider including at least one Physics (Physics 20 or 22) or one Mathematics course at the 20 level (Mathematics 20*, 24 or 27 or Applied Mathematics 20), with due regard to the prerequisites for courses they expect to take in subsequent years. At least one course from the Faculties of Arts or Social Science must be included.

Students who registered before 1972 in programs previously offered by any of the Biological Sciences Departments may either complete their original program (this may require substitution of some courses by the equivalent courses in the new program—see departmental listing) or they may transfer to the Biology BSc Three Year Program provided they fulfill the requirements of that program.

CAUTION: ALL STUDENTS SHOULD EXAMINE THE PREREQUISITES FOR COURSES THEY EXPECT TO TAKE IN SUBSEQUENT YEARS. A COUNSELLING SERVICE IS PROVIDED IN THE FACULTY OF SCIENCE TO ASSIST STUDENTS IN SELECTING A PROGRAM.

SECOND YEAR

Biology 200

Biology 201

A mathematics course at the 20 level, if not already taken.

Options: a number elected to attain a total of five full courses. It is recommended that students consider including Chemistry 203, or 250 and 252; and at least one Biology option equivalent to a full course.

THIRD YEAR

Chemistry 203, or 250 and 252, if not already taken.

Biology optional courses (202-344); a number elected to attain at least a total of five full Biology courses in Years Two and Three.

Options: a number elected to attain a total of five full course equivalents in Third Year. Other Biology optional courses may be included, if desired.

BSc HONORS PROGRAMS

(FOURTH YEAR)

REQUIREMENTS FOR ADMISSION TO HONORS PROGRAMS IN THE BIOLOGICAL SCIENCES

Prerequisites for Honors Programs in the Biological Sciences

A student who has fulfilled the requirements for a BSc Biology Three Year Program and has an overall average of 70% in the last two years and at least 70% average in five senior biology courses with no mark less than 60% in those five, can proceed to one of the Honors Programs in the Biological Sciences provided the necessary prerequisites for that program have been completed at a B level. (see listing below).

A student who has fulfilled the requirements for a three-year BSc Biology Program and has an overall average of 60% and an average of at least 60% in five senior Biology courses, and who does not fulfill the requirements specified for automatic admission, may be allowed to proceed to an Honors degree in one of the disciplines of Biology only with the special permission of the Department. In the case of a student progressing to the fourth year Honors Biology program or Honors Genetics program, permission of the Dean of Faculty of Science, is required.

Certain additional prerequisites are required for entry into some Honors programs; these courses should be included in the student's choice of optional courses in the Three Year BSc Program. The specific additional prerequisites for entry into each Honors program are listed below:

Honors Biology

None

Honors Anatomy

Biology 309

Honors Bacteriology and Immunology

Biology 202 or Biology 306

Biology 300 or 301

Honors Biochemistry*

Chemistry 204 or 254

Biology 300

One of Mathematics 24, 27, Applied Mathematics 20 is recommended.

The program of the fourth year student should be prepared in consultation with the Department Head.

Honors Biophysics*

Mathematics 24, or 27, Applied Mathematics 20.

Applied Mathematics 270 or Mathematics 278.

Physics 20

Biology 302

(It is advantageous to the student if he can also take Biology 303 and a Second Year Physics course (256 or 253) before entering the Fourth Year.)

Honors Genetics*

Biology 209

Biology 308. Recommended but may be taken in the Fourth Year.

Honors Plant Sciences

None

Honors Physiology and Honors Physiology and Pharmacology

Physics 20 or 22

Biology 310

Biology 311

Two of Biology 202, 300 or 301, 302, 309.

Honors Zoology

Biology 344a

***NOTE:** Alternate prerequisites for entry into these programs are given under the departmental entry of the Calendar.

REQUIREMENTS FOR FOURTH YEAR HONORS BSc IN BIOLOGY OR ONE OF THE DISCIPLINES OF BIOLOGY

At least five Honors level courses in the Biological Sciences as designated in each program must be completed.

A student who has a grade average of at least 60% in the principal courses of the Fourth Year and a passing grade in every course will automatically graduate with Honors degree.

A student who has a grade average below 60% in the principal courses in Fourth Year but has a grade average of at least 60% in all the principal courses in the Third and Fourth years and a passing grade in every course, may graduate with an Honors degree only on the recommendation of the department(s) concerned.

COURSES

BSc BIOLOGY
Three Year Program

Although some of the courses in this program are open to students from other programs, if space and facilities become limiting in courses at the two hundred level or higher, preference will be given to Three Year BSc Biology students.

BIOLOGY CORE COURSES

20. Biology of Organisms*. (given cooperatively with other biological science departments).
Growth, development, integration, organization, reproduction, and heredity of unicellular, colonial and multicellular organisms.
2 lectures, 3 laboratory hours, Full Course.

*Students who have done well in Biology 21 and wish to transfer to the three-year BSc program, may, with the permission of the Dean of the Faculty of Science, substitute Biology 21 for Biology 20.

200. Biology of Cells. (given cooperatively with other biological science departments).
The organization and the physiological, genetical and biochemical processes occuring in cells.
Prerequisites: Biology 20 and Chemistry 20.
2 lectures, 3 laboratory hours, Full Course.

201. Biology of Populations. (given cooperatively with other biological science departments).
The distribution, genetics and evolution of populations and their growth, regulation and interactions with other populations and their environment.
Prerequisite: Biology 20 or Biology 21.
Corequisite: Math. 20, 24 or 27 or Applied Math. 20.
A student may be permitted to take this course at the discretion of the Dean of the Faculty of Science on evidence of satisfactory standing in Biology.
2 lectures, 3 laboratory hours, Full Course.

BIOLOGY OPTIONS

The prerequisites are such that courses numbered 202 and above can be taken in Second or Third Year, and 300 level courses would normally be taken in Third Year.

202. Microbiology (given by the Department of Bacteriology and Immunology and Plant Sciences). A comparative study of the morphology, biology and relationships of algae, bacteria, fungi, protozoa and viruses.
Co-requisite or prerequisite: Biology 200
2 lectures, 3 laboratory hours, Full Course.

203a. Biology—Plant Ecology (given by the Department of Plant Sciences). An experimental approach to interrelations between an individual plant and various factors in its environment.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

204b. Biology—Plants and the changing Environment of Ontario (given by the Department of Plant Sciences). A study of the natural flora of Ontario, with emphasis on southwest Ontario. The course will deal with plants and their distribution pattern as affected by past and modern climates and technological change. Some field work included.
Prerequisite: Biology 20
5 lecture, laboratory hours, Half Course.

205a. Biology—Growth and Development in Plants (given by the Department of Plant Sciences). An experimental approach to tissue differentiation and organogenesis in vascular plants. Growth patterns and their regulation in sporophytic and gametophytic phases. Morphogenesis. Patterns and symmetry.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

209. Biology—Genetics (given by the Department of Plant Sciences). Principles of heredity discussed at various levels of cellular organization, from the chromosome within the cell r ' us to populations of multicellular c isms.
I quisite: Biology 20
2 tures, 3 laboratory hours, Full C .

215b. Biology—Biostatistics (given by the Department of Plant Sciences). A course in applied statistics directed to the beginner with an interest in a survey of the elementary concepts and methods of probabilities and statistics as applied to Biology.
Prerequisites: Mathematics 20, 24, 27 or Applied Mathematics 20 or equivalent standing in Mathematics.
2 lectures, 3 laboratory hours, Half Course.

216a. Biology—Survey of the Plant Kingdom (given by the Department of Plant Sciences). A comparative study of the main groups of plants. Emphasis will be on their characteristic features, including morphology, life cycles, physiology and general biology and on major adaptive-evolutionary strategies.
Prerequisite: Biology 20
5 lectures, laboratory hours, Half Course.

217b. Biology—Plants in the Service of Man (given by the Department of Plant Sciences). An introduction to economically important plants and their products, especially as sources of food, fuel, drugs and industrial raw materials. National and international programs relating to food and other plant resources.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

220a. Biology—Vertebrate Biology I (given by the Department of Zoology). The principles of design of verteberates. Emphasis will be placed on structural adaptations to aquatic and terrestrial environments.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, one term Half course.

221b. Biology—Vertebrate Biology II (given by the Department of Zoology). The physiological basis for environmental adaptation in selected vertebrate types.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, one term Half course.

224a. Biology—Invertebrate Biology (given by the Department of Zoology). An introduction to the invertebrates. A survey of the invertebrate phyla, their radiation and evolutionary relationships.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, one term Half course.

225b. Biology—Arthropod Biology (given by the Department of Zoology). The characteristic structure, function and adaptations of the arthropods. The mechanisms of support and

movement. Economic and medical importance.
Prerequisite: Biology 224a
2 lectures, 3 laboratory hours, one term Half course.

300. Biology—Biochemistry (for students intending to progress to an Honors Program) (given by the Department of Biochemistry). A survey of biochemistry with emphasis on protein structure and function (including enzymology), intermediary metabolism and nucleic acid structure and function.
Prerequisites: A Mathematics or Applied Mathematics course at the 20 level; one of Chemistry 203; 250 plus 252.
Corequisite or prerequisite: one of Chemistry 204; 214; 254.
3 lectures, 2 laboratory hours.

301. Biology—General Biochemistry (given by the Department of Biochemistry). An introduction to the chemistry of cellular constituents with emphasis on mammalian metabolism.
Prerequisites: One of Chemistry 203, or 33.
2 lectures, 3 laboratory hours.
Note: A student cannot obtain credit for both Biology 300 and 301.

302. Biology—General Biophysics (given by the Department of Biophysics). A survey of the physics of living things.
Prerequisites: Physics 20 or 22, or 26
2 lectures, 3 laboratory hours.

303. Biology—Biophysical Analysis (given by the Department of Biophysics). The application of mathematics to the functional behaviour of living things. A knowledge of first year calculus is assumed.
Prerequisite: Physics 20 or 22, or 26
2 lectures.

304a. Biology—Evolution of Plants (given by the Department of Plant Sciences). This course will concentrate on aspects of evolution relatively little dealt with in Biology 201—origin of life, geological background, biosystematics of plant populations, biochemical and physiological evolution, the logical problems of deducing evolutionary pathways.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours, Half Course.

305b. Biology—Plant Physiology (given by the Department of Plant Sciences). Principles of "plant function", including nutrition, water relations, adaptation to environmental stress, mechanisms of dormancy and hormonal action, and the physiology of growth and reproduction.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, Half Course.

306. Biology—Bacteriology, Virology and Immunology (given by the Department of Bacteriology and Immunology). This course will consider the distinguishing features, the importance to man, and the interrelationships between the major groups of bacteria and viruses. It will also consider the basic concepts of immunology and its application to the biological sciences.
Prerequisite: Biology 200
Prerequisite or Corequisite: Biology 300 or 301.
2 lectures, 3 laboratory hours.

307. Biology —Applied Microbiology (given by the Departments of Bacteriology and Immunology, and Plant Sciences). A survey of selected topics in agricultural and industrial microbiology with reference to food microbiology, fermentation reactions, single cell protein synthesis, the principles of plant disease control and applied immunological techniques.
Prerequisites or corequisites: Biology 200 and Biology 202 or 306, and Biology 300 or 301

308. Biology—Advanced Genetics (given by the Departments of Plant Sciences and Zoology). Critical analyses of recent concepts of the gene and chromosomes.

Prerequisites: Biology 200, 201 and 209
2 lectures, 3 laboratory hours.

***309. Biology—Mammalian Histology (given by the Department of Anatomy).** A survey of mammalian cytology, microscopic anatomy and neuroanatomy.
Prerequisite: Biology 20 and a two hundred level course
2 lectures, 3 laboratory hours.
***Note:** A student will not normally obtain credit for both Biology 309 and Biology 314.

310. Biology—Mammalian Physiology (given by the Department of Physiology). A survey of the physiology of various systems (e.g. cardiovascular, digestive, respiratory, etc.) of the mammal.
Prerequisites: Chemistry 203 or equivalent; Physics 20 or 22; one of Mathematics 20, 24, 27 or Applied Mathematics 20, Biology 20, or by permission of the Department.
2 lectures, 3 laboratory hours.

311. Biology—General Physiology and Pharmacology (given by the Department of Physiology and Pharmacology). A survey of cellular and general physiology and general pharmacology.
Prerequisites: Chemistry 203; Physics 20 or 22; one of Mathematics 20, 24, 27 or Applied Mathematics 20; Biology 20; or by permission of the Department.
2 lectures.

313b. Biology—Bioenergetics of the Ecosystem (given by the Department of Plant Sciences). A study of the ecosystem with emphasis on primary production, the degrading influences of pollution and the necessity of conservation practice.
Prerequisite: Biology 203a
3 lectures, laboratory hours, 3 tutorial, Half Course.

315a. Biology—Advanced Plant Cell Biology (given by the Department of Plant Sciences). Plant cell ultrastructure in relation to basic metabolism of plant cells. Biochemical pathways which are unique in plants including detailed study of photosynthesis.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, Half Course.

317. Biology—Micro-organisms and Plant Pathology (given by the Department of Plant Sciences). Morphology, classification, physiology and general biology of micro-organisms with emphasis on plant pathogens. Plant diseases parasitic and non-parasitic. Relationships between host and pathogen, epidemiology. Methods of control.
Prerequisite: Biology 202
2 lectures, 3 laboratory hours, Full Course.

322a. Biology—Vertebrate Histology (given by the Department of Zoology). An introduction to comparative aspects of the microscopic structure and development of tissues and organs in the various vertebrate classes.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, one term Half course.
Note: A student cannot normally obtain credit for both Biology 309 and Biology 322a.

323b. Biology—Vertebrate Physiology (given by the Department of Zoology). The principles of homeostasis with emphasis placed on functional relationships in diverse vertebrate types.
Prerequisite: Biology 221b
2 lectures, 3 laboratory hours, one term Half course.

329b. Biology—Comparative Physiology of Growth and Nutrition in Animals (given by the Department of Zoology). Analysis of growth processes. Principles of nutrition.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, one term Half course.

332a. Biology—Parasitology (given by the Department of Zoology). Parasitism as a way of life. Structures, life histories and host-parasite relationships of some representative animal parasites.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, one term Half course.

335b. Biology—Physiological Ecology of Animals (given by the Department of Zoology). Mechanisms of adaptation to different environments. Environmental control of physiological processes. Rhythmic phenomena.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours, one term Half course.

336a. Biology—Animal Behaviour (given by the Department of Zoology). Introduction to animal behaviour with emphasis on social organization and the adaptive nature of behaviour.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours, one term Half course.

338b. Biology—Animal Development (given by the Department of Zoology). Principles of development and cell specialization. The embryology of selected vertebrates and invertebrates.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, one term Half course.

342a. Biology—Cell Biology of Animals (given by the Department of Zoology). Molecules to biological structures. Ultrastructure and life history of cells and organelles.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, one term Half course.

344a. Biology—Biometry (given by the Department of Zoology). Methods of measurement and sampling and the application of statistical methods to biological data.
Prerequisites: Biology 200 or 201; a Mathematics course at the 20 level.
2 lectures, 3 laboratory hours, one term Half course.

BSc HONORS (FOURTH YEAR) TO COMMENCE SEPTEMBER 1973

BIOLOGY

Structure

Principal Courses

Five full courses from offerings of the Biological Science Departments at the two hundred level or higher. At least one of these courses must include laboratory work. No more than two courses to be taken in one Department.

Subsidiary Courses

One option.

Courses

See foregoing Biology option listings and the Fourth Year Honors course listings of the individual departments which follow.

ANATOMY

Structure

Principal Courses

Anatomy 441, 460, 461, 462, 463, 464, 480.

Science 440

Subsidiary Courses

Two options selected with the advice of the Department of Anatomy. One of Mathematics 255, Biology 205, Psychology 255 or Biology 312 is required if a course in statistics has not previously been taken.

Courses

441. Seminar. Presentation of assigned topics and discussion of current literature.
1 hour, all year Half course.

460. Gross Anatomy. A study of human gross anatomy, including the dissection of the body, given only to Honours Anatomy students.
2 lectures.

461. Cell Structure. A seminar course (or practical course, when only a small number of students are registered) in cytology with special emphasis on recent developments. Theoretical and practical aspects of electron microscopy are discussed.
Prerequisite: Biology 309 or equivalent
2 lectures, one term only Half course.

462. Cytogenetics. An examination of chromosome morphology and behaviour, including chromosomal abnormalities in man as causes of diseases.
2 lectures, term only Half course.

463. Embryology. The principles of mammalian embryology with a consideration of the effects of various teratological factors on the developing embryo.
2 lectures, one term only Half course.

464. Neuroanatomy. A course in the anatomy and functions of the mammalian brain and spinal cord. The first half will comprise a series of 16 lectures (core course). The second half will be composed of small group seminars and supervised dissections of a variety of mammalian brains. Opportunities will be available for interested students to construct models of various parts of the central nervous system.
2 lectures, Half course.

480. Laboratory. The major laboratory course in various aspects of anatomy for students in the Fourth Year of the program.
A minimum of 10 hours.

BACTERIOLOGY AND IMMUNOLOGY

Structure

Principal Courses

Bacteriology and Immunology 480 plus the equivalent of at least three full courses from the following: Bacteriology and Immunology 460, 461b, 462b, 465b, 467a, 470a, 471b, 472b.

Subsidiary Courses

Two courses selected with the approval of the Department. Science 440 and Math 255 (or equivalent) are recommended for those who have not taken equivalent courses.

Courses

460. Bacteriology Advanced Microbiology. An advanced treatment of the biology and physiology of microbes with particular emphasis on the bacteria. In 1973-74 this course will contain virology and immunology components as described in course 306.
Prerequisite: Biology 202 or 306; Biology 300 or 301
2 lectures, 3 laboratory hours.

461b. Bacteriology Microbial Anatomy. A survey of cytological methods and applications to the understanding of the structure of procaryotic organisms, protozoa and fungi.
Prerequisites: Biology 202 or Biology 306

1 lecture, 3 laboratory hours, one term only Half course.

462b. Bacteriology Advanced Virology. Current topics on the biochemistry of virus-cell interactions.
Prerequisite: Biology 300 or Biology 301; Biochemistry 461 strongly recommended
2 lectures, one term only Half course.

465a. Bacteriology Microbial Biochemistry. Topics involving the biochemical activities and processes of microbes.
Prerequisites: Biology 300 or 301
2 lectures, one term only Half Course.

467a. Bacteriology Microbial Genetics. Aspects of genetics applying to micro-organisms. (Given in collaboration with the Department of Plant Sciences).
Prerequisites or corequisites: Biology 308, Biology 300 or Biology 301
2 lectures, 3 laboratory hours, one term only Half Course.

470a. Bacteriology Immunology. A course concerned with immunological theory and interpretation of basic and medically applied immune phenomena. (Given in collaboration with the Department of Medicine).
Prerequisite: Biology 200 or equivalent
2 lectures, one term only Half Course.

471b. Bacteriology Immunobiology. An advanced course dealing with cellular mechanisms involved in the immune response, the ontogeny and phylogeny of the immune response, general concepts in immunopathology and immunological diseases, and other topics of current interest.
Prerequisite: Bacteriology and Immunology 470a or its equivalent
2 lectures, 3 laboratory hours, one term only Half Course.

472b. Bacteriology Immunochemistry. An advanced course on the properties of antigens and antibodies, on their chemical structure and on their interactions in vitro and in vivo.
Prerequisite: Bacteriology and Immunology 470a or equivalent
2 lectures, 3 laboratory hours, one term only Half Course.

480. Bacteriology (Bacteriology 441 and 480). Laboratory and Tutorial. To give training in the techniques employed in modern microbiology with emphasis upon individual effort and resourcefulness. Designed expressly for fourth year honors students in the Department of Bacteriology and Immunology and to allow further elaboration of the technical content of the courses offered in the department. Other students require the permission of the department to take this course. Tutorials would include a critical review of scientific papers, laboratory data and the presentation of scientific reports.
5 hours.

BIOCHEMISTRY

Structure

Principal Courses

Biochemistry 460, 461, 464b, 468a, 480.

Science 440

Any two half courses or one full course from Biochemistry, Biology, Chemistry, and the Health Sciences at the 300 or 400 level with the approval of the Department of Biochemistry.

SUBSIDIARY COURSES

Mathematics 255 or equivalent (if not already taken).

One additional option may be elected with the permission of the Department of Biochemistry.

Courses

460. Metabolism. An advanced treatment of intermediary metabolism.
Prerequisite: Biology 300 or 301 or Biochemistry 400
2 lectures.

461. Structure and Metabolism of Nucleic Acids. A discussion of the role of the nucleic acids in protein synthesis.
Prerequisite: Biology 300 or 301 or Biochemistry 400
2 lectures, one term only Half course.

463b. Current Topics. A discussion of contemporary topics in the field of Biochemistry.
Prerequisite: Biology 300 or 301 or Biochemistry 400
2 lectures, one term only Half course.

464b. Enzymology. A survey of the principles of mechanism and function of enzymes.
Prerequisite: Biology 300 or 301 or Biochemistry 400
2 lectures, one term only Half course.

468a. Physical Biochemistry. A discussion of thephysiochemical properties of macro-molecules of biological interest.
Prerequisite: Biology 300 or Biochemistry 400
2 lectures, one term only Half course.

480. Research Seminar. Designed to give training in techniques and methods at the advanced level; emphasis is laid upon individuality of work and resourcefulness. Included in the sessions is a review and evaluation of current literature in a series of seminars involving student participation.
10 hours.

BIOPHYSICS

Structure

Principal Courses

Biophysics 460, 461a, 462b, 463, 464b, 480

Science 440

Subsidiary Courses

Mathematics 255 (unless an approved course in Statistics already taken).

One course in Physics, Applied Mathematics, Mathematics or Physical Chemistry at the two hundred level or above, except that if Biology 303 has not already been taken it must be taken instead.

Courses

460*. Cellular Biophysics. The physics of cell shape, size, surface properties, membrane diffusion and transport. Elasticity and viscosity of cells and body fluids: contraction of the muscle cell.
2 lectures.

461a*. Bioelectrical Phenomena. Bioelectric potentials, excitability and conduction in nerve and muscle. Mechanism of biological transducers and cybernetics.
2 lectures, one term only half course.

462b*. Radiobiology and Molecular Biophysics (Given in collaboration with the Department of Plant Sciences). Nature and effects of electromagnetic radiations on biomolecular structure on living cells. Applied radiobiology and radioecology.
2 lectures, 1 hour laboratory (optional), one term only Half course.

463*. Environmental Biophysics. The physical environment of life. The effects, on living things, of environmental factors such as temperature,

solar radiation, pressure, gaseous atmosphere, water and solutes, gravity, sound and vibration, electric and magnetic fields.
1 lecture, two terms Half course.
*Courses that would be particularly suitable options to students in other honors programs.

464b. Biothermodynamics. Study of the transformations of energy in living things, applications of the laws of thermodynamics, energy exchanges with the environment, irreversible thermodynamics and the steady state.
2 lectures, one term only half course.

480. Laboratory. This is the major laboratory course in experimental Biophysics for the Fourth Year student. Students are expected to spend as much time as possible in laboratory work.

GENETICS

Structure

Principal Courses

Genetics 491 plus three full courses (or equivalent) chosen from Genetics 433, 467, 477, 480; Biochemistry 461; Zoology 440a, 444b.

Options

One full course offered in the Faculty of Science (If Biology 308 was not selected previously, it must be taken in Fourth Year).

Courses

433. Cytogenetics (given by the Departments of Anatomy and Plant Sciences). The study of chromosomes and chromosomes behavior with emphasis on the genetic principles involved. Examples are drawn from plants and animals including man.
Prerequisites: Biology 20, 200, 201 and 209
2 lectures, 2 laboratory hours, Full course.

467. Microbial Genetics (given by the Departments of Bacteriology and Immunology and Plant Sciences). The genetics of microorganisms particularly fungi bacteria and bacteriophage. Current research using these microorganisms to elucidate fundamental principles of recombination, regulation, gene action, and replication.
Prerequisites: Biology 20, 200, 201 and 209
2 lectures, 3 laboratory hours, Full course.

477. Human Genetics (offered by faculty in Genetics program). A study of the aspects of genetics which apply directly to man.
Prerequisites: Biology 20, 200, 201 and 209
2 lectures, 2 laboratory, tutorial hours, Full course.

480. Laboratory (offered by faculty in Genetics program). Designed to give training in the techniques and methods employed in modern genetical research, with emphasis on individual effort and resourcefulness. The registrant will select an advisor from amongst the members of the faculty involved in the Genetics program.
5 hours per week, Full course.

491. Seminar in Genetics (offered by faculty in the Genetics program). Topics to be chosen each year such that they integrate and augment the study of genetics as presented in the genetics courses. All faculty in genetics program will participate. Required of all registrants in the honors genetics program.
Prerequisites: Biology 20, 200, 201 and 209
Corequisites: two 400 level genetics courses
3 hours/week, Full course.

PLANT SCIENCES

Structure

Principal Courses

Any four of Plant Sciences 402, 403, 404, 405 and one of Genetics 433 or 467.

A total of 2 full courses from Plant Sciences 420a or 430a or any Biology course offered by the Plant Sciences Department at the 200-300 level.

One full course from Faculty of Science at the 200-400 level.

Students should arrange their program in consultation with the fourth year Plant Sciences coordinator.

The principal courses are arranged into a coordinated series of lecture/laboratory block for the intensive investigation of the current status of the various areas of Plant Sciences.

Visiting speakers and a year-end week-long symposium will focus attention on the various roles available to plant biologists.

Courses

402. Advanced Microbiology. Selected Topics of current interest in microbiology.
10 lectures, laboratory, tutorial hours for 5 weeks, Half Course.

403. Advanced Ecology. Detailed consideration of sampling and experimental design, plant responses to environment under extreme condition, plant competition and evolution with emphasis on ecology.
10 lecture, laboratory, tutorial hours for 5 weeks, Half Course.

404. Modern Approaches in Systematics. Consideration at the advanced level of species delimitation, biochemical systematics and introduction to numerical taxonomy.
10 lecture, laboratory hours for 5 weeks, Half Course.

405. Advanced Growth and Development. Current topics in plant physiology and biochemistry.
10 lecture, laboratory, tutorial hours for 5 weeks, Half Course.

420a. Field Course in Experimental Biology. This course will consist of a field project with subsequent laboratory. The laboratory work may include further sampling, data analysis and report preparation. Students should be prepared to meet part of their travelling expenses.
3 laboratory hours for 1 term, Field trip, Half Course.

430a. Independent Study in Experimental Biology. This course will enable a student to pursue any topic of his own interest in the Plant Sciences. It could consist of a library project or research project.
5 hours for 1 term, Half Course.

450a. Selected Topics in Biology. Available by prior arrangement with the Plant Sciences Program co-ordinator.
5 lecture, laboratory/discussion hours, Half Course.

460b. Selected Topics in Biology. Available by prior arrangement with Plant Sciences Program co-ordinator.
5 lecture, laboratory/discussion hours, Half Course.

462b. Radiobiology and Molecular Biophysics (given by the Departments of Biophysics and Plant Sciences). Nature and effects of electromagnetic radiations and biomolecular structure on living cells. Applied radiobiology and radioecology.
2 lectures, 1 laboratory hour, one term only Half Course.

PHYSIOLOGY

Structure

Principal Courses

Science 440

Physiology and Pharmacology 460

Physiology 441, 461, 462, 480

Subsidiary Courses

One option from: Biology 205, Psychology 255, Biology 312 (only if Statistics not previously taken).

One additional option with permission of the Department of Physiology.

Students may choose one of the following options:

Not all courses and options will be offered every year. Consult the Department before registering.

PHYSIOLOGY OPTIONS

Systemic Physiology Option

Principal Courses

Science 440a

Physiology 441a, 480

Three of: Physiology 442a, 443b (formerly 442b), 461b, 462a, 464, 465b, 466a, 467b, 469b.

One full course and a half course or three half courses at a senior level with permission of the Department.

Subsidiary Courses

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Neurophysiology Option

Principal Courses

Science 440a

Physiology 441a, 463b, 468

Biophysics 461a, Anatomy 464

(or equivalents approved by the Department of Physiology).

One full course and a half course or three half courses at a senior level with permission of the Department of Physiology.

Subsidiary Courses

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Endrocrinology Physiology Option

Principal Courses

Science 440a

Physiology 441a, 462a, 480

Two of:

Physiology 442a, 443b (formerly 442b).

Physiology 461b, 464, 465b, 466a, 467b

Physiology 469b

One full course and a half course or three half courses from the following list, selected in consultation with the Department of Physiology.

Biochemistry 460

Biochemistry 464b

Biophysics 462b

Bacteriology 470a

Bacteriology 471b

Bacteriology 472b

Other senior courses which may meet specific interests or requirements.

Subsidiary Courses

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Physiology And Pharmacology Option

Principal Courses

Science 440

Pharmacology 441, 460, 461, 462, 480

Two of:

Physiology 443b, 461b, 463b

Physiology 464, 465b, 466a

Physiology 467b

Subsidiary Courses

One option from:

Biology 205 (formerly Plant Sciences 300)

Psychology 281 (formerly Psychology 255)

Mathematics 255

Biology 312 (formerly Zoology 465)

(If a course in Statistics not previously taken).

One additional option.

COURSES OFFERED BY THE DEPARTMENT OF PHARMACOLOGY

441. Seminar. The preparation of essays and the presentation of scientific reports or papers on assigned topics in pharmacology.
1 hour — all year, half course.

460b. Selected Topics in Pharmacology at an advanced level. This course will deal with contemporary problems in pharmacology with stress upon environmental toxicology.
Prerequisite: enrolment in Pharmacology 462
2 lectures, half course.

461. Chemical Pharmacology. Pharmacological screening, pharmacodynamics, structure-activity relationships, metabolism and toxicology of selected drug classes; enrolment limited.
2 lectures, - full course.

462a. Survey of Pharmacology. Classification of the major drugs with emphasis on their absorption, metabolism, excretion, mechanism of action and importance.
2 lectures, half course.

480. Laboratory and Tutorial. A course of training in the techniques employed in modern pharmacological investigations. Opportunity for original projects will be provided. The tutorial will supplement both lecture and laboratory work; enrolment limited.
Minimum of 10 hours/week, full course.

COURSES OFFERED BY THE DEPARTMENT OF PHYSIOLOGY

441a. Seminar. The presentation of scientific papers and reports and the writing of essays on assigned topics.
2 hours, half course.

442a. Physiology of Exercise. A study of the response and regulation of the human cardiovascular, respiratory and neuromuscular systems to acute and chronic exercise.
Prerequisite: Physiology 342 or equivalent
1 lecture, 3 laboratory hours, half course.

443b. Neurophysiology. A study of the physiology of the central and peripheral nervous systems. In this course, neurophysiology will be presented at a more advanced level than in Biology 310 or an equivalent survey course in Physiology, but at a less quantitative level than Physiology 463.
2 lectures, one term only half course.

461b. Systematic Mammalian Physiology. Special physiology of the blood and other fluids, the cardiovascular and respiratory systems.
2 lectures, one term only half course.

462a. Metabolic and Reproductive Physiology. Role of the endocrine system in regulation of metabolism and reproduction in mammals.
2 lectures, one term only half course.

463b. Advanced Neurophysiology. Selected major topics in neurophysiology will be studied in detail at an advanced and quantitative level.
Prerequisites and Corequisites: Biophysics 461a, Anatomy 464 (or equivalent approved by the Department)
2 lectures, one term only half course.

464. Systems Analysis in Physiology. The use of control system theory in physiology and a study of some examples.
1 lecture, half course.

465b. Neurophysiology of Autonomic-Somatic Integration. A study of the integrated responses of the whole animal to environmental changes in terms of the internal and external activities controlled by the nervous system.
2 lecture hours, half course.

466a. Body Water and Renal Physiology. Body fluid compartments and kidney function.
2 lectures, one term only half course.

467b. Selected Advanced Topics in Physiology. A seminar course, by arrangement with the Department of Physiology.
half course.

468. Laboratory Course in Electro- and Neurophysiology. An introduction to experimental electro- and neurophysiology. The course will be oriented towards obtaining quantitative data from experimentation for subsequent analysis. Conference sessions will be held at which results will be discussed and plans for further experimentation made.
Corequisite: Physiology 463; or equivalent by consultation with the Department
Minimum 10 hours per week.

469. Gastrointestinal Physiology. A study of gastrointestinal secretion, digestion, absorption and motility including hepatic physiology.
2 lectures, one term only half course.

480. Laboratory and Tutorial. Laboratory research projects and instrumentation in physiology. Open only to honors students in Physiology.
Minimum 10 hours per week.

ZOOLOGY

Structure

Principal Courses

Ten 300 or 400 level half courses offered by the Zoology Department. One or more courses offered outside the Department may be substituted for a Zoology course(s), with the approval of the department undergraduate advisor.

Students who plan to continue into Graduate Studies are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

Courses

422b. Comparative Histology. Comparative aspects of the structure and development of organ systems at the microscopic level.
Prerequisite: Biology 322a
2 lectures, 3 laboratory hours for one term, Half course.

424a. Insect Taxonomy. The principles and historical development of insect taxonomy and the classification of specimens by means of keys and monographs.
Prerequisite: Biology 255b
3 laboratory hours for one term, Half course.

426a. Insect Physiology. The principles of insect physiology. Insects as experimental animals.
Prerequisite: Biology 200 and 225b
2 lectures, 3 laboratory hours for one term, Half course.

427a. Comparative Neurophysiology. Principles of action of excitable tissue and neural transmission (jointly with the Department of Physiology); evolution of complexity in nervous systems, the basis of animal motor control, the variety of sensory systems of animals, primitive central nervous systems.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

428a. Comparative Endocrinology. Hormonal integration in vertebrates and invertebrates.

Prerequisite: Biology 200; 322a or concurrent registration in 322a desirable.
2 lectures, 3 laboratory hours for one term, Half course.

432b. Immunity to Parasites (given jointly with the Department of Bacteriology and Immunology). Natural and acquired resistance to animal parasites, medical and veterinary implications; serological and immunological methods; in vitro culture.
Prerequisite: Biology 332a
2 lectures, 3 laboratory hours for one term, Half course.

434a. Advanced Population Biology. Diversity and stability, developed from the dynamics of single and multiple species systems. Life history strategies. Colonization. r and K selection.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term, Half course.

436b. Advanced Behaviour. Animal social systems. Communication. Bioperiodism. Cybernetic systems.
Prerequisite: Biology 336a
2 lectures, 3 laboratory hours for one term, Half course.

438a. Advanced Developmental Biology. Mechanisms and role of cell communication and interaction during development.
Prerequisite: Biology 338a
2 lectures, 3 laboratory hours for one term, Half course.
May not be offered in 1973-74

440a. Developmental Genetics. Molecular biology of development. Regulation of genomic function. Replication and translation of information during development. Stability of clones. Somatic cell genetics.
Prerequisites: Biology 200 and 201
2 lectures, 3 laboratory hours for one term, Half course.

441b. Evolution. Concepts of species. Polymorphism, selection and gene flow. Theories of speciation. Fitness-set analysis.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term, Half course.
Not offered in 1973-74

442b. Advanced Cell Biology. Cell function. Cell and tissue specialization. Transport. Transporting epithelia. Contractility and motility.
Prerequisite: Biology 342a
2 lectures, 3 laboratory hours for one term, Half courses.
May not be offered in 1973-74

444b. Advanced Biometry. Advanced statistical methods.
Prerequisite: Biology 344a
2 lectures, 3 laboratory hours for one term, Half course.

450a. Special Topics in Experimental Biology I. A practical course within a particular field under the direction of a faculty member.
Prerequisite: Average of 70% in the preceding year. Permission of Instructor required.
See research notice boards for areas of specialization of the faculty and fields available.
8 laboratory, tutorial hours for one term, Half course.

451b. Special Topics in Experimental Biology II. As for Zoology 450a.
Prerequisite: successful completion of Zoology 450a
8 laboratory, tutorial hours for one term, Half course.

452a. Field Course in Experimental Biology. A study of living organisms in the field. Fieldwork and laboratory studies. Students should be prepared to meet part of the travel expenses.
Prerequisite: Permission of instructor
Field trip plus, 3 lab hours for one term, Half course.

453b. Political Biology. The biological consequences of human activities for the biotic world and particularly man and his institutions. Direct physical and chemical effects upon metabolism, development, adaptation, genes, and population structure. Indirect effects through climatic change, population density, social conditions and changed patterns of survival. Predictions and mechanisms for influencing the future.
Prerequisites: Biology 200 and 201
4th year only
2 lectures, 3 tutorial hours, Half course.

454a. Advanced Laboratory Techniques. A practical course in advanced techniques, including tissue culture, histology, autoradiography, stereology, photomicrography and the preparation of illustrations.
Prerequisite: Biology 200 or permission of instructor
1 lecture, 6 laboratory hours for one term, Half course.

455b. Advanced Microscopy. Phase, ultraviolet, interference, polarising, fluorescence, and Nomarski microscopy. Electron microscopy, interpretation and presentation of data.
Prerequisite: Zoology 454a or permission of instructor
1 lecture, 6 laboratory hours for one term, Half course.

470. Evolution. Concepts of species, intra, and interspecific variations including polymorphism; selection and gene flow; significance of central changes.
2 lectures, 3 laboratory, tutorial hours, Full course.

DEPARTMENT OF BIOPHYSICS

Room 122
Medical Sciences Building

Chairman of Department
Roach, Margot R. (Chairman of Department) BSc New Brunswick; MD CM McGill; PhD UWO; FRCP(C)
PROFESSOR: Burton (Part-time); Groom ASSOCIATE PROFESSORS: Inch, Taylor ASSISTANT PROFESSORS: Boughner, Canham, Duncan, Sherebrin, Sutherland LECTURERS: Gerson, Song HONORARY LECTURERS: Finlay, Johnson, Miller, Nagai Finlay, Johnson, Miller, Nagai

PROGRAMS

The Department of Biophysics offers an Honors Program leading to an Honors BSc degree after four years of study. Students who might wish to take Honors Biophysics are advised to consult the Department as soon as possible, preferably during first year. They can thus receive maximum benefit from counselling.

Admission

There are two routes to the BSc in Honors Biophysics:

(a) Admission into the Honors Program (fourth year) of students who have completed the 3-year BSc Program in Biology with an adequate standing (see regulations of the Biology Program) and who have the appropriate prerequisites (see below);

(b) Admission into the Honors Program (third year) from the second-year Program in Honors Physics or Chemistry of students with a satisfactorily high standing. (With permission of the Department of Biophysics, students may petition the Dean of the Faculty of Science for recognition of other second-year Honors Programs).

Prerequisites

(a) Entry into Honors Biophysics (fourth year) from the Biology Program:

Mathematics 24 or 27, or Applied Mathematics 20

Applied Mathematics 270 or Mathematics 278

Physics 20, 22, or 26

Biology 302

(It is advantageous to the student if he can also take Biology 303 and a second-year Physics course (256 or 253) before entering fourth year).

(b) Entry into Honors Biophysics (third year): The second-year Honors Program in Physics.

Biology 20

Chemistry 20

(Students are advised to include a physical chemistry course and as much mathematics and physics as possible among their options).

HONORS BIOPHYSICS

All course selections must be made with the approval of the Chairman of the Department.

THIRD YEAR

Principal Courses

Biology 302

Biology 303

One course from list A, and two from the combined lists A & B.

A. Biology 200 - Biology of cells

Biology 202 - Microbiology

Biology 300 - Biochemistry

Biology 309 - Mammalian Histoloty

Biology 310 - Mammalian Physiology

B. Applied Mathematics 270 or Mathematics 278

Physics 256 or 253

Chemistry 254 or 204

Other Honors Science courses at the 200 or higher level if approved by the Department.

Subsidiary Course - One option

In connection with choosing an option students who plan to continue into graduate study are reminded that many graduate schools require some knowledge of a language other than English.

Students may be permitted, in special cases, to defer this course until 4th year and to substitute another course from Lists A and B.

FOURTH YEAR

Principal Courses

Biophysics 460, 461a, 462b, 463a, 464b, 480, Science 440

Subsidiary Courses

Mathematics 255 (unless approved course in statistics already taken). One course in Physics, Applied Mathematics, Mathematics, or Physical Chemistry at the 200 level or above, except that if Biology 303 has not already been taken it must be taken instead.

Courses

302. Biology - General Biophysics (formerly Biophysics 300). Biomechanics, bioenergetics and the steady state, transport mechanisms (diffusion, bulk flow), physical properties of cells and tissues, the physical environment of life, bioelectricity, biophysics of vision and hearing, elementary radiobiology.
Prerequisites: Physics 20, 22, or 26
2 lectures, 3 laboratory hours, Full course.

303. Biology - Biophysical Analysis (formerly Biophysics 301). The application of mathematics to the functional behavior of living things. A knowledge of first year calculus is assumed.
Prerequisites: Physics 20, 22, or 26
2 lectures, Full course.

***460. Cellular Biophysics.** The Physics of cell shape and size, membrane structure and function, the role of cell water. Cells as chemical and mechanical machines and as control systems. Investigate tools and techniques.
2 lectures, Full course.

***461a. Bioelectrical Phenomena.** Bioelectric potentials, excitability and conduction in nerve and muscle mechanism of biological transducers, and cybernetics.
2 lectures, Half course.
*Courses that would be particularly suitable as options for students in other Honors Programs.

***462b. Radiobiology and Molecular Biophysics (Given in collaboration with the Department of Plant Sciences).** Nature and effects of electromagnetic radiations on biomolecular structure and on living cells. Applied radiobiology and radioecology.
2 lectures, 1 laboratory hour, half course.

463. *Environmental Biophysics. The physical environment of life: the effects, on living things, of environmental factors such as temperature, solar radiation, pressure, gaseous atmosphere, water and solutes, gravity, sound and vibration, electric and *magnetic fields.*
1 lecture, 2 terms half course.

***464b. Biothermodynamics.** The first and second laws of thermodynamics and their application in biology. Topics include open systems - properties of solutions, chemical and membrane equilibria, whole cells - radiation and photosynthesis, information and entropy, irreversible thermodynamics.
2 lectures, half course.
*Courses that would be particularly suitable as options for students in other Honors Programs.

480. Laboratory. This is the major laboratory course in experimental Biophysics for the 4th year students. Students are expected to spend as much time as possible in laboratory work.
Minimum 10 hours weekly, full course.

DEPARTMENT OF CHEMISTRY

Departmental Office: CB 119

Head of Department

Clark, H. C., BSc, MSc, PhD Auckland; PhD, ScD Cantab

PROFESSORS: Allnatt, Arnold, Bolton, Brand, Clark, Jacobs, Howell, King, de Mayo, Meath, Scott, Stothers, Ware, E. W. Warnhoff ASSOCIATE PROFESSORS: Baird, Baldwin, Bancroft, Bidinosti, Chan, Graham, Haines, Hunter, Kidd, Lorimer, Sukava, Willis ASSISTANT PROFESSORS: Dean, Demas, Guthrie, Martin, Payne, P. R. Warnhoff.

PROGRAMS

BSc DEGREE

The Department of Chemistry provides a Program leading to a BSc degree after three years of study, and an Honors Program leading to an Honors BSc degree after an optional fourth-year of study. The concentration in chemistry begins in the Second Year on successful completion of a First Year in a General Program.

The student should consult the general section of this Calendar for details of academic regulations, grades required for admission and progression, and the requirements for graduation which pertain to these programs of study in the Faculty of Science.

The Departmental requirements are outlined below.

Requirements for Admission. A First Year General Program which includes Chemistry 20 or 23, Physics 20 or 26, and one of Applied Mathematics 20, Mathematics 24, or Mathematics 27. In some instances admission may be granted to a student lacking either Physics or Mathematics; however, in such instances the missing prerequisite must be included in the Second Year of study.

All students must consult with the Chemistry Department prior to admission to this program.

Courses offered by the department usually follow a sequential form and often require some background in Mathematics and Physics. For these reasons, many senior courses have definite prerequisites and corequisites. Students are advised to study these carefully. To fulfill, in part, the requirements for a BSc in this Program, a student must complete five senior courses in chemistry, but may include additional ones. In any event, the program must include Chemistry 250, 252 and 254, and Applied Mathematics 280 or its equivalent, all to be taken in the Second Year, and Chemistry 350.

For those students intending to proceed into the Fourth Year of the Honors Chemistry Program, the inclusion of Physics 253 or Physics 250 and 256 is strongly recommended.

Second Year

Chemistry 250, 252 and 254

Applied Mathematics 280 or its equivalent

Option

Third Year

Chemistry 350

Two of Chemistry 351b, 353a, 354b, 374a.

Options: a number elected to attain a total of five full courses. Other Third Year Chemistry courses may be included if desired.

BSc HONORS (FOURTH YEAR OPTION)

Requirements for Admission: Completion of the Three Year BSc Program in Chemistry with an overall average of at least 70% in the five senior Chemistry courses, with no mark less than 60% in those five, qualifies a student for automatic admission to the Fourth Year Honors Option. Students who do not qualify for automatic admission may be allowed to proceed to the Fourth Year only with the special permission of the department.

Fourth Year

Chemistry 459

Equivalent of FIVE full courses selected from Groups A and B. These must include all courses from Group A which were not taken previously and the equivalent of at least two full courses in chemistry at the 400 level.

Group A. Chemistry 351b, 353a, 354b, 374a, Physics 253, or its equivalent, if not taken previously. (By special permission of the Department, this requirement may be met by another Honors course).

(All courses of Group A not taken in Third Year must be taken in Fourth Year).

Group B. Chemistry 451a, 461b, 453a, 463b, 454a, 464b, 474a, 484a, 456b, 484b, 477a, 494a.

Chemistry 307a, 352a, 356b, (if not previously taken)

Applied Mathematics 380

Other senior courses (numbered 300-400) from other departments in the Faculty of Science chosen in consultation with both departments concerned.

BSc DEGREE (THREE YEAR PROGRAM)

for students entering year III in September 1973 only.

To fulfil, in part, the requirements for a BSc in this Program, a student must complete a minimum of four senior courses in chemistry but may include additional ones. In any event, the Program must include Chemistry 250, 252, 254 and Physics 253. In addition the inclusion of Applied Mathematics 280, or its equivalent is strongly recommended.

Third Year

At least one full lecture and laboratory course at the Third Year Level, i.e. at least one of

Chemistry 351 with Chemistry 361

Chemistry 353 with Chemistry 363

Chemistry 354

Physics 253 (if not previously elected)

Options: a number elected to attain a total of five full courses. Other Third Year Chemistry courses may be included if desired.

BSc HONORS DEGREE

for students entering year III or IV in September 1973.

THIRD YEAR

Principal Courses

Chemistry 351, 352, 353, 354, 374

Two of: Chemistry 361, 363, 364

Subsidiary Courses

Two Options

(These are free options but may include any of Chemistry 307a, 355, 356b, 358, 362 and 384. For those electing Chemistry 454 or Chemistry 474 in the Fourth Year, Applied Mathematics 380 must be taken in the Third Year, in which case the Fourth Year Program will consist of Chemistry 459, three full courses from the Fourth Year, plus two options).

FOURTH YEAR

Principal Courses

Chemistry 459

The equivalent of FOUR FULL courses from:

Chemistry 307a, 355, 356b, 358, 362, 384, 451, 453, 454, 456, 474,

Biochemistry 400 b

Applied Mathematics 380

Physics 366

Physics 465 (if Applied Mathematics 380 has been taken)

Physics 360 (if Physics 250 has been taken)

A full Biochemistry course (if Biochemistry 300 was taken in Third Year).

Subsidiary Course

One Option

COURSES

20. General Chemistry. Primarily for students in First Year General Program (Natural Sciences) or First Year Engineering Science.
Prerequisite: Grade XIII Chemistry
2 lectures, 3 laboratory hours.

21. General Chemistry. A terminal course for students not intending to specialize in Science.
2 lectures, laboratory demonstration hours, 1 1/2 tutorial.

23. General Chemistry. Primarily for students in First Year General Program (Natural Sciences) who have not had Grade XIII chemistry.
3 lectures, 3 laboratory hours.

25. General Chemistry. For students in Home Economics and Nursing Programs only.
Prerequisite: Grade 13 Chemistry
2 lectures, 3 laboratory hours.

33. Organic Chemistry. For students in Home Economics and Nursing Programs only.
Prerequisite: Chemistry 25
2 lectures, 3 laboratory hours, first term half course.

203. Organic Chemistry. Intended primarily for students in Honors Biology and students interested in programs in the Health Sciences.
Prerequisite: Chemistry 20 or 23
2 lectures, 3 laboratory, tutorial hours.

204. Physical Chemistry. For students in Honors Biology (Familiarity with calculus is desirable for this course).
Prerequisite: Chemistry 20 or 23
2 lectures, 1 1/2 laboratory hours.

212. Fundamentals of Analytical Chemistry. An introduction to methods of quantitative chemical analysis, including instrumental techniques.
Prerequisite: Chemistry 20 or 23
Two lectures, 3 laboratory hours.

214. Elementary Physical Chemistry. An introduction to the laws of thermodynamics and their applications to chemical systems. For students in Engineering Science, Geology and Geophysics.
Prerequisite: Chemistry 20 or 23 and a full course in calculus
3 lecture hours.

250. Structure and Mechanism. For students primarily in Chemistry Programs. A study of atomic and molecular properties in terms of the principles of bonding. Reactions and an introduction to mechanisms of the compounds of the main group elements with emphasis on carbon. This course also fulfils the organic chemistry requirements for professional programs.
Corequisite: Chemistry 252
4 lecture hours, 1 tutorial hour.

252. Experimental Chemistry. For students primarily in Chemistry Programs.
Corequisite: Chemistry 250
8 laboratory hours.

254. Elementary Physical Chemistry. An introduction to thermodynamics and theoretical physical chemistry. For students in Chemistry Programs.
Prerequisite: Chemistry 20 or 23 and a full course in calculus
3 lecture hours.

304. Physical Chemistry. For students in Engineering programs. Students in programs other than Chemistry may take the course with permission of the Department. Chemical thermodynamics, kinetics, and electrochemistry.
Prerequisite: Engineering Science 204 (or Chemistry 204 with permission of instructor)
3 lectures, 1-1/2 laboratory hours.

307a. The Evolution of Chemical Thought. An introduction to the history of chemical concepts, with emphasis on the formulation of specific concepts and their evolution through to the modern era.
Prerequisite: Chemistry 250 and 252 or equivalent
Two lectures, first term half course.

351. Intermediate Inorganic Chemistry. Chemistry of the transition metals and their complexes; elementary ligand field and molecular orbital theory. For students in Chemistry Programs.
Prerequisites: Chemistry 250 and 252
2 lectures first term, 1 lecture second term, half course.
Not offered after September 1974

352. Chemical Spectroscopy. Fundamental features of molecular spectroscopic methods including ultraviolet, visible and infrared spectroscopy, magnetic resonance and mass spectroscopy.
Prerequisite: Chemistry 250 and 252, or 203
2 lecture hours, first term half course.
Not offered after September 1974

353. Intermediate Organic Chemistry. For students in Chemistry Programs.
Prerequisites: Chemistry 250 and 252
2 lectures.
Not offered after September 1974

354. Intermediate Physical Chemistry. Chemical thermodynamics, phase equilibria and electrochemistry. For students in Chemistry Programs.
Prerequisites: Chemistry 254 and Applied Mathematics 270 or equivalent
Prerequisite or corequisite: Physics 253
2 lectures first term, 3 lectures second term, 1 1/2 laboratory hours.
Not offered after September 1974

356b. Bio-organic Chemistry. Applications of organic chemistry to biological systems. Enzymes and catalysis; a brief survey of metabolism; natural products and their biosynthesis; protein structure and synthesis; drug design; enzymes in industry.
Prerequisite Chemistry 353a (In 1973-74 - Chemistry 353 is a corequisite)
2 lectures, second term half course.
(This course is not an acceptable pre-requisite for any fourth year course in Biochemistry. Students may not obtain credit for both this course and Biology 300 or 301).

358. Industrial Chemistry. Industrial applications of chemistry with emphasis on heat and mass transfer aspects. For students in Chemistry Programs.
Prerequisite: Chemistry 250,, 211 or 203
2 lectures, one term only half course.
Not offered after September 1974

361. Inorganic Chemistry Laboratory. For students in Chemistry Programs.
Corequisite: Chemistry 351
4 laboratory hours, half course.
Not offered after September 1974

362. Instrumental Methods of Analysis. An introduction to instrumental methods of quantitative analysis, including potentiometric, polarographic, and spectroscopic methods.
Prerequisite: Chemistry 250, 211 or 203
2 lectures, second term only half course.
Not offered after September 1974

363. Organic Chemistry Laboratory. For students in Chemistry programs.
Corequisite: Chemistry 353
4 laboratory hours, half course.
Not offered after September 1974

364. Physical Chemistry Laboratory. For students in Chemistry Programs.
4 laboratory hours, half course.

374. Quantum Chemistry 1. An introduction to the theory of atomic and molecular structure.
Prerequisite: Applied Mathematics 270, or equivalent
2 lecture hours.
Not offered after September 1974

384. Chemical Kinetics. Modern theories and techniques; elementary processes; fast reactions; reactions in solution and at electrodes.
Prerequisite: Chemistry 254
1 lecture, half course.
Not offered after September 1974

451. Advanced Inorganic Chemistry. Selected topics.
Prerequisite: Chemistry 351
3 lecture hours.
Not offered after September 1975

453. Advanced Organic Chemistry. Selected topics.
Prerequisites or corequisites: Chemistry 353 and 363
3 lecture hours.
Not offered after September 1975

454. Advanced Physical Chemistry. Statistical thermodynamics.
Prerequisite: Applied mathematics 380, or equivalent
2 lecture hours.
Not offered after September 1975

456. Bio-organic Chemistry. Organic Chemistry of biological molecules; mechanisms of enzyme catalyzed reactions; chemical basis of enzyme actions.
2 lectures, one term only (half course).
Not offered after September 1975.

459. Experimental Chemistry and Seminar.
12 laboratory hours.

474. Quantum Chemistry II. A continuation of Chemistry 374.
2 lecture hours.
Not offered after September 1975.
Effective September 1974 the following courses will be offered:.

477a. Molecular Group Symmetry Theory and Chemical Applications of Group Theory.
Prerequisite or corequisite: Chemistry 374a.
3 lectures, first term (half course).

350. Perspectives in Chemistry. Chemical principles related to the modern world including analysis, synthetic and natural processes, geochemistry and industrial methods.
Prerequisites: Chemistry 250, 252, and 254.
2 lectures, 4 laboratory hours.

351b. Intermediate Inorganic Chemistry. Chemistry of the transition metals and their complexes; ligand field theory and molecular orbital theory.
Prerequisites: Chemistry 250 and 252.
2 lectures, 4 laboratory hours, second term (half course).

352a. Physical Methods of Structure Determination. The principles and applications of various methods of structure determination, with special emphasis on spectroscopic techniques.
Prerequisites: Chemistry 250 and 252
2 lectures, first term (half course).

353a. Intermediate Organic Chemistry. Radical reactions, acidity and basicity, steric and solvent effects. Simple synthesis.
Prerequisites: Chemistry 250 and 252.
2 lectures, 4 laboratory hours, first term (half course).

354b. Intermediate Physical Chemistry. Electrochemistry; irreversible processes; chemical kinetics; surface chemistry.
Prerequisite: Chemistry 254 and Applied Mathematics 280 or equivalent.
2 lectures, 4 laboratory hours, second term (half course).

374a. Quantum Chemistry I. An introduction to quantum theory.
Prerequisite: Applied Mathematics 280 or equivalent.
3 lectures, first term (half course).
Effective September 1975 the following courses will be offered:.

451a. Advanced Inorganic Chemistry I. Solid State chemistry.
3 lectures, first term (half course).

461b. Advanced Inorganic Chemistry II. Selected topics.
3 lectures, second term (half course).

453a. Advanced Organic Chemistry I. Intermediates in Reaction Pathways.
Prerequisite: Chemistry 353a.
3 lectures, first term (half course).

463b. Advanced Organic Chemistry II. Stereochemistry and Synthesis.
3 lectures, second term (half course).

454a. Advanced Physical Chemistry I. Advanced thermodynamics.
Prerequisite: Chemistry 354b.
3 lectures, first term (half course).

464b. Advanced Physical Chemistry II. Statistical Mechanics.
Prerequisite or corequisite: Applied Mathematics 380.
3 lectures, second term (half course).

456b. Bioorganic Chemistry II. Chemical Origins of Enzymic Catalysis. Mechanisms for model systems related to enzymic catalysis; methods for the investigation of enzyme mechanisms; some well understood enzymes; mysteries remaining.
Prerequisite: Chemistry 356 or Biochemistry 300.
3 lectures, second term (half course).

474a. Quantum Chemistry II. A continuation of Chemistry 374a.
Prerequisite: Chemistry 374a.
3 lectures, first term (half course).

484b. Molecular Structure.
3 lectures, second term (half course).

494a. Chemical Kinetics. Modern theories and techniques; elementary processes; fast reactions; reactions in solution and at electrodes.
Prerequisite: Chemistry 354b.
3 lectures, first term (half course).

DEPARTMENT OF COMPUTER SCIENCE

Professor and Head of Department Hart, J. F., BA, PhD Toronto VISITING PROFESSOR: Elcock ASSOCIATE PROFESSORS: Beckhoff, Carroll, Gargantini, Mullin, Pylyshyn ASSISTANT PROFESSORS: Bennett, Dunham, Kuehner, Steinby LECTURERS: Colpitts, Dewdney, Dixon, Langland, MacRae, Martin, McCallum, Newkirk, Paloian, Szilard HONORARY LECTURERS: Lake, Slemon, Thierrin

PROGRAMS

Note: Students proceeding with a major in Computer Science are required to consult the Department in their choice of courses. They are advised that in courses with scheduled laboratory periods, additional time will be needed to complete the laboratory assignments. Wherever Computer Science 20 is stated as prerequisite, Computer Science 21 may be substituted with the permission of the Department.

General BA

Students may complete a Three Year General Program for a BA degree with a Computer Science major by completing four or more senior Computer Science courses. One of these must be Computer Science 31 or Computer Science 34. Prerequisites are Computer Science 20 and one of the Mathematics 20, 21, 24, 27, Applied Mathematics 20.

Three Year BSc

(a) **Requirements for Admission: Computer Science 20 and one of Mathematics 20, 24, 27, Applied Mathematics 20.**

(b) **Program Structure**

Second year

Computer Science 31, 34 and a senior Mathematics course. Two other courses.

Third year

Two of Computer Science 41, 42, 43, 44 (304 or 313 may be taken by consent of Department) and a senior mathematics course. Two other courses.

Note: It is strongly recommended that Mathematics 35 (or Economics 35) be included among the senior mathematics courses selected.

Honors BSc

(a) **Requirements for Admission**

A first year general program with Computer Science 20, one of Mathematics 24, 27 or Applied Mathematics 20, and any other course as a principal course.

(b) **Program Structure**

Caution: All students entering the Second Year should examine the prerequisites for courses which they expect to take in subsequent years.

SECOND YEAR

Principal courses

Computer Science 200, 206

Applied Mathematics 202 or Mathematics 250

One of: Mathematics 256, 278, Applied Mathematics 200

Subsidiary course

One option

THIRD YEAR

Principal courses

Computer Science 304, 313

2 full courses or equivalent chosen from Computer Science 343a/344b, any Mathematics or Applied Mathematics courses at the 300 level.

Subsidiary course

One option

FOURTH YEAR

Principal courses

Four half courses in Computer Science on the 400 level. One 400 level course in Applied Mathematics, Mathematics or one of Mathematics 350, 356. One 300 level course subject to the approval of the Department.

Subsidiary course

One option

COURSES

20. Introduction to Computer Science. Basic programming techniques and an introduction to subfields in Computer Science. Emphasis is on algorithm design and computer programming using the FORTRAN language with an introduction to assembly language programming. Other topics include computer hardware, logic design, operating system concepts, programming applications in sciences and business, and an introduction to artificial intelligence and automata theory.
Prerequisites: Two Grade XIII Mathematics courses (Calculus, Algebra, and Relations and Functions) or Grade XIII Mathematics A.
2 lectures, 2 laboratory hours.

21. Survey of Computer Science. This course provides an overall view of the field of Computer Science. It stresses the development and design of computers, the art of programming and use of algorithms for solving problems in science, social science and the humanities.
Prerequisite: Grade XII Mathematics or equivalent
3 lectures, 1 laboratory hour.
Note: Students contemplating the mathematical or physical sciences as their major field of study are strongly advised to take Computer Science 20.

30. Computers in Education. A survey of developments in Computer Science and their relevance to problems in Education. Topics include information systems for education, small computer systems and their use in problem solving, on-line computer systems and their use in instructional simulation and computer-assisted instruction, computer-managed instruction.
Prerequisite: Computer Science 20, or permission of the Department
2 lectures, 2 laboratory hours.

31. Information Processing Systems. A comprehensive introduction to the components of, analysis of, and design strategies for information systems. Topics covered include data organization and storage structure techniques, analysis of information content, retrieval systems, and dissemination; the systems method and applications in business. COBOL and/or PL1 will be used for advanced problem solving.
Prerequisite: Computer Science 20
2 lectures, 2 laboratory hours.

34. Programming Techniques. An intensive programming course using both a procedure-oriented language and an assembly language. Advanced FORTRAN programming techniques, basic searching and sorting algorithms, topics in numerical methods and analysis. Fundamentals of assembly language programming, interactive testing and debugging in a time-sharing environment. Introduction to systems software with emphasis on the basic assembler and loader.
Prerequisites: Computer Science 20 and a first year course in Mathematics at the 20 level
2 lectures, 2 laboratory hours.

37. Computer Applications. A practical course in computer programming for students majoring in an area other than Computer Science. Emphasis is placed on a standard computer language (FORTRAN) and its application to the student's major or interest. Problem solving techniques in statistics, operations research and simulation will be discussed. This course is designed for senior students who desire one course in understanding and using computers.
Prerequisite: A first year course in Mathematics
2 lectures, 2 laboratory hours.

39. Computer Art and Graphics. Study of the graphics-oriented language CRUK. Basic mathematics with an emphasis on Cartesian geometry and the graphs of various families of curves. Study of known computer art and graphics programs.

Prerequisite: None
2 lectures, 2 laboratory hours.
Note: Computer Science 39 has a limited enrolment. Preference is given to Fine Arts students.

41. Advanced Information Processing. Storage device characteristics, file structures, matching file structures to the problem, directories, hash-coding, sorting techniques. Specific data structures, such as lists, stacks, queues, trees. Languages for list and text processing. Information retrieval systems, retrieval, creation and update, indexing techniques, interpreters, operating system data structures.
Prerequisite: Computer Science 31
2 lectures, 2 laboratory hours.

42. Scientific Applications of Digital Computers. The structure and basis of algorithms for solving scientific problems on the computer. Topics will include linear programming, selected problems from statistics, and discussion of the practice of scientific programming in industry and research. One term will be spent studying simulation.
Prerequisites: One senior Computer Science course and one senior Mathematics course.
2 lectures, 2 laboratory hours.

43. Computer Logic and Programming. Theory of Boolean algebra and switching circuits, basic logical elements of a digital computer, logical design of computer components. Introduction to the theory of programming languages.
Prerequisites: Computer Science 20 and a course in Mathematics at the 20 level
2 lectures, 2 laboratory hours.

44. Advanced Software Systems. A systems programming course using assembly language programming. Topics include information structures, machine organization, input-output programming of typical third generation systems, construction of assemblers, loaders, and compilers, operating systems, high level languages. Laboratory sessions cover assembly language programming techniques.
Prerequisite: Computer Science 34
2 lectures, 2 laboratory hours.

200. Introduction to Algorithms. Recursive definitions: induction, Euclid's algorithm, Fibonacci numbers, Chinese remainders, modular arithmetic, optimal algorithms, evaluation of polynomials. Numerical algorithms: integration, solution of equations, interpolation, statistical algorithms, errors. Non-numerical algorithms: sorting and searching, data structures, arrays, push-down stacks, lists, trees, symbolic differentiation, shortest path, hill climbing. Algorithms in business: COBOL, data conversion, file manipulation and file organization. Software, compilers, advanced FORTRAN.
Prerequisites: Computer Science 20 and a First year course in Mathematics at the 20 level
3 lectures, 1 laboratory hour.

206. Machine-oriented Theory and Programming. An introduction to the mathematics and mathematical systems relevant to machine theory, and to machine-level programming. Number systems, numeric data representation and machine arithmetic, codes. Boolean algebra. Assembly language programming techniques (MACRO-10), interactive testing and debugging (DDT) in a time-sharing environment. Introduction to systems software with emphasis on the basic assembler and loader.
Prerequisites: Computer Science 20 and a course in Mathematics at the 20 level
2 lectures, 2 laboratory hours.

304. Systems Programming and Software Engineering. Systems Programming: Review of assembly language programming, macros and their use, input-output programming, basic data structures for system programs, construction of useful and basic systems programs.

Software Engineering: large program management, construction of assemblers, loaders and compilers, operating systems, benchmarking operating systems.
Prerequisite: Computer Science 206
2 lectures, 2 laboratory hours.

313. Computer Logic and Design. A study of combinational and sequential circuits, the basic components and design principles of memory, control and processor systems in a digital computer. Introduction to finite automata.
Prerequisites: CS-206 and a senior course in Mathematics
2 lectures, 2 laboratory hours.

343a. Combinatorial Mathematics. Existence and enumeration problems, permutations and combinations, recursion and generating functions; linear programming; block designs. (This course is the same as Mathematics 343a).
Prerequisites: Mathematics 250 and one of 256 or 278; or Applied Mathematics 200 and 202
3 hours for one term, (half course).

344b. Computer Combinatorics. Computational tools, enumerative algorithms, detection algorithms, restricted optimization problems, coding and information theory, formula manipulation algorithms, tree-search strategies.
Prerequisites: Computer Science 343a (Mathematics 343a) and 200 or permission of department
2 lectures, 2 laboratory hours for one term, (half course).

420a. Computing Algorithms. A study of software and hardware used to implement numerical algorithms. Error analysis.
Prerequisites: A senior course in computer programming, in matrix algebra and in advanced calculus.
2 lectures, 2 laboratory hours, (half-course).

421b. Computing Algorithms. A study of algorithms in Numerical Analysis.
Prerequisite: Computer Science 420a
2 lectures, 2 laboratory hours, (half-course).

430a. Automata Theory and Formal Languages. The course covers the concept of a language, finite representations for a language, grammars, including regular, context-free, context-sensitive and type o, types of automata, both deterministic and non-deterministic, including finite automata, pushdown automata, linear bounded automata and Turing machines.
Prerequisite: An honors course in Computer Science and in Abstract Algebra
2 lectures, 2 laboratory hours, (half-course).

431b. Automata Theory and Formal Languages. Specific topics in context-free languages, Chomsky and Greibach Normal forms, self-embedding, ambiguity and inherent ambiguity, deterministic languages, LR(k) grammars, precedence grammars, parsing algorithms.
Prerequisite: Computer Science 430a
2 lectures, 2 laboratory hours, (half-course).

440a. Artificial Intelligence. A survey of attempts to mechanize intelligent behavior. Pattern recognition, game playing and theorem proving programs. Problems of domain dependent reasoning. Use of a high-level symbol manipulating language.
Prerequisite: Computer Science 206
2 lectures, 2 laboratory hours.

441b. Mechanized Deductive Systems. Formal reasoning in first order logic. Applications to theorem proving, question answering and plan formation. Limitations of formalism. Motivation and philosophy of informal reasoning. Current research in knowledge-based deductive and perceptive systems. Use of a high-level symbol manipulating language.
Prerequisite: Computer Science 206
2 lectures, 2 laboratory hours.

460a. Computer Simulation. Introduction to simulation languages. Methods for generating and testing pseudo-random number sequences to probability functions. Introduction to queueing theory. Principles of mathematical modelling.
Prerequisites: A senior course in computer programming and in statistics
3 lectures, 1 laboratory hour, (half-course).

461b. Simulation Laboratory. Structure of simulation problems. Programming digital simulations. Design of simulation experiments, and selected topics in statistical analysis.
Prerequisite: Computer Science 460a
2 lectures, 2 laboratory hours, (half-course).

480b. Project. Approval by the Department is needed
(half-course).

DEPARTMENT OF GEOLOGY

Departmental Office B & G 128A

Chairman of Department

Fyfe, W. S., BSc, MSc, PhDD Otago, New Zealand. F. R. S. PROFESSORS EMERITUS: Reavely, Suffel PROFESSORS Dreimanis, Fyfe, Hutchinson, Emeridi, Winder ASSOCIATE PROFESSORS Church, Edgar, Fleet, Hodder, Lenz, MacRae, Starkey, Sutterlin, Young INSTRUCTOR Gyorok VISITING LECTURER Fryer HONORARY LECTURERS Bancroft, Palmer, Quigley, Whiteside.

PROGRAMS

General BA Program

Students may complete a 3-year General Program for a BA degree with an area of concentration in Geology by completing four or more Honors courses. Normally Geology 20 or 21 with a B minimum grade is prerequisite for second year courses. Minimum Geology Department requirements for the 3-year BA are Geology 219 and three other Geology courses. Geology 211 and 311 are designed for students in Geophysics and are not acceptable as part of the Geology BA program.

Three-year BSc Program

Normal requirements for admission:

Successful completion of a First Year General Program including Geology 20 (with Departmental permission students who have taken Geology 21 may be allowed to enter second year), Chemistry 20, and Mathematics 24 or Mathematics 27, or Applied Mathematics 20. The student should consult the general section of this Calendar for details of academic regulations, grades required for admission and progression which pertain to the 3-year BSc degree in the Faculty of Science. Specific course requirements of the Department of Geology for the 3-year BSc program are:

SECOND YEAR

Geology 219, 260

Chemistry 214

Options: a number elected to attain a total of five full courses.

THIRD YEAR

Geology 320, 340

One of: Geology 310, 450, 467, 475

Options: a number elected to attain a total of five full courses.

Students intending to continue into the Fourth Year Honors BSc program should choose their options with due regard to the prerequisites outlined below for entry into the Honors program.

Students who register before 1973 in the programs previously offered by the Department of Geology may either complete the original program or they may transfer to the Geology BSc three-year program provided they fulfil the requirements of that program.

A counselling service is provided in the Faculty of Science to assist students in selecting a program.

Honors BSc Program (Fourth Year)

Requirements for automatic admission:

Entry into the Fourth Year Honors program requires that the student have completed: a) 3-year BSc program including six senior geology courses, with an overall average of 70% in the last two years, and an average of at least 70% in all the senior geology courses with no mark less than 60%; b) two of: Biology 20, Physics 20, and Engineering Science 21; c) one of: Applied Mathematics 270, Biology 206, 207 and Physics 250, 256.

Course requirements for the Fourth Year Honors program are:

Principal Courses

Geology 400, 410

Three of: Geology 415, 420, 425, 430, 440, 450, 463, 467, 475; Geophysics 302; Engineering Science 426; Geography 436.

Subsidiary Courses

One senior science option, which may be a Geology course.

All students must consult with the Geology Department concerning their choice of courses before registering for the Honors Program. Students are also expected to have completed at least one summer of field experience before entering the Fourth Year Program.

For graduation a student must have a grade average of at least 60% in the principal courses of the Fourth Year, and a passing grade in every course. A student who has a grade average below 60% in the Principal courses of the Fourth Year but has a grade average of at least 60% in all Geology courses of the Third and Fourth Years may graduate with an Honors degree only on the special recommendation of the Department.

COURSES

20. Introductory Geology. Minerals and rocks; geological processes and their results; structure of the earth; fossils; interpreting the earth's history; economic mineral deposits.
2 lectures, 3 laboratory hours.

21. Geological Science. A survey emphasizing Canada; Origin of earth and solar system; Earth's internal structure; Origin and geological evolution of continents and oceans, mountain building, volcanism; Radiation and atmosphere, hydrosphere, lithosphere; Surficial processes,

...eathering, wind, water, ice; Earth resources and man, energy, minerals, soil; Time, life, biological evolution and change.
2 lectures, 2 laboratory hours.

60. Earth History. Principles of rock nomenclature and correlation, Geologic time, Mountain building. Principle of uniformitarianism, The Evolution of life, History of the earth's surface from Precambrian to the present with emphasis on the Paleozoic and Mesozoic. Recent theories of continent and ocean basin development.
Prerequisite: Geology 20 or 21
Extension only.

211. Earth Materials and Earth Processes. An introduction to minerals and rocks, their chemistry, reactions such as melting and phase changes, an elementary introduction to thermodynamic and kinetic principles governing such changes over the pressure-temperature range of the earth. Methods of determining structure and composition of earth materials. Introduction to aspects of geodynamics and geologic time.
Primarily for Geophysics and other students of science and engineering.
2 lectures, 1 hour per week extra for those who have not had Geology 20.

219. Elements of Mineralogy. Elements of crystal symmetry, stereographic projection, crystal classes; introduction to morphological crystallography. Study of light transmission in minerals. Introduction to crystal chemistry and paragenesis of rock forming minerals and their identification in hand specimen and thin section. (This is intended as a first course in mineralogy for all students of Geology.)
2 lectures, 2 laboratory hours.

260. Stratigraphy, Historical Geology and Paleobiology. Classification, morphology, ecology of invertebrates and of some vertebrates and plants; evolution; index fossils. Principles of stratigraphy. Phanerozoic history of North America and selected parts of the world. In early May a 10-day field camp will be held as part of the course in the region of Whitefish Falls and Manitoulin Island north of Lake Huron, or in the Sherbrooke region of the Quebec Appalachians. Students will have the opportunity to examine igneous, sedimentary and metamorphic rocks and learn various techniques of mapping.
2 lectures, 3 laboratory hours.

310. Mineralogy. Systematic morphological crystallography, point groups, Bravais lattices: introduction to X-ray diffraction, chemical bonding and packaging models, structure and crystal chemistry and identification of important mineral groups.
Prerequisites: Geology 219 and Chemistry 214
2 lectures, 3 laboratory hours.

311. Resources of the Earth. Concepts of Geology emphasizing sedimentary and tectonic structures favorable for the localization of petroleum and mineral deposits. The study of mineral deposits emphasizing their physical and chemical characteristics as targets for exploration geophysics and geochemistry. Primarily for Geophysics 1 (Physical) and other students of science and engineering.
2 lectures.

320. Igneous and Metamorphic Petrography. Classification of igneous and metamorphic rocks. Study of their mineralogy, textures and field occurrences and modes of formation. Laboratories include microscopic and macroscopic studies of selected rock suites.
Prerequisite: Geology 219
2 lectures, 3 laboratory hours.

340. Structural and Sedimentary Geology. Theory and techniques of structural analysis and petrology; strain analysis and rock mechanics; map interpretation. Primary and secondary structures of sedimentary rocks; petrography of selected sedimentary rock suites.

Prerequisite: Geology 219
2 lectures, 3 laboratory hours.

391. Geology for Engineers. Introduction to minerals, rock, weathering, transportation, deposition and glacial geology. Engineering properties of geologic minerals. Application of principles of weathering to the deterioration of construction materials. Ground water seepage conditions and their influence on slope stability. Glacial soils and their importance in engineering practice. Case histories of engineering projects markedly influenced by site geology.
5 hours, one term, (Half course).

400. Senior Thesis. An original study including field observations, laboratory investigations and literature survey.
One and one-half courses.

410. Field Investigation. Field study of the geology of the Precambrian in a region extending from Kirkland Lake to Sault Ste. Marie. The field study will include examination of rocks and their associated mineral deposits of Archean, Aphebian, Helikian and Hadrynian age, and the tectonics of the Superior, Southern and Grenville Provinces.
Offered in the Field prior to the first semester of the Fourth Year.
(Half Course).

415. Advanced Mineralogy and Introductory X-ray Crystallography. Universal Stage, its mineralogy and petrographic uses. Advanced mineralogical concepts illustrated by reference to the crystal chemistry and structural crystallography of selected mineral groups, introductory X-ray crystallography, powder methods.
2 lectures, 3 laboratory hours.

420. Igneous Petrogenesis. Principles of silicate phase equilibria, theories of igneous differentiation with examples from selected localities. Laboratory study of petrographic methods and problems, seminars.
2 lectures, 3 laboratory hours.

425. Metamorphic Petrogenesis. Principles, classification and the facies concept. Physical-chemical principles involved in their genesis. Laboratory study of petrographic methods and calculations, seminars.
2 lectures, 3 laboratory hours.

430. Geochemistry. Origin and abundancies of the elements, Trace element geochemistry, Application of thermodynamics to geological problems, Sedimentary geochemistry, Isotope geochemistry, Exploration geochemistry.
3 lectures.

440. Regional Geology. Phanerozoic geology of the world with special emphasis on interpretation of stratigraphic and structural problems of orogenic belts; plate tectonics and geosynclinal models. Evolution of the Precambrian crust, using the Canadian Shield for comparison with other shield areas of the world.
Prerequisite: Geology 219, 260
2 lectures, 3 laboratory, tutorial hours.

450. Mineral Deposits Geology. Economic importance and descriptive geology of mineral deposits. Theories and problems of metallogenesis in relationship to lithologic, stratigraphic and tectonic processes. Laboratory work includes use of the reflecting light microscope and study of selected rock suites.
Prerequisite: Geology 219
2 lectures, 3 laboratory hours.

463. Sedimentation and Stratigraphy. Types of sediments and their habitat, conditions within the environment. Stratigraphic concepts of unit nomenclature, correlation and facies. Laboratory exercises in sediment analysis and map interpretation.
2 lectures, 3 laboratory hours.

467. Glacial and Pleistocene Geology. Glaciers and their work, Glacial and extraglacial deposits, their structure and landscape forms. Pleistocene stratigraphy, especially of eastern

North America. Economic aspect of Pleistocene deposits. Laboratory exercises, field trips, and a field-laboratory project.
Prerequisite: Geology 20 or 21 and permission
5 hours.

475. Invertebrate Macropaleontology. Advanced study of rugose corals, graptolites and Paleozoic brachiopods, with emphasis on stratigraphic occurrence, morphology and classification. Study of principles of taxonomy, evolutionary concepts, use of fossils in zonation and environmental influence.
2 lectures, 3 laboratory hours.

DEPARTMENT OF GEOPHYSICS

Departmental: Office B & G 62

Beck, A. E., BSc London; PhD Australian National University
PROFESSORS: Beck, Carmichael, Mereu, ASSOCIATE PROFESSORS: Mansinha, Palmer, Schloessin ASSISTANT PROFESSORS: Hayatsu VISITING PROFESSOR: Stacey.

Geophysics is the study of problems associated with the earth using the methods of Mathematics, Physics and Geology. The physical properties of the earth's interior, the earth's magnetic field, the rotation of the earth and the history of the earth are some of the topics covered in pure geophysics. Topics in applied geophysics deal with methods of locating oil deposits, ground water, and mineral deposits using various instruments and techniques of interpretation.

The opportunities for geophysicists are so broad that many areas of emphasis are available. Students should consult with the Department Head when choosing a program and specific course options. However, in general, for students with an interest in earth sciences and a talent, or additional interest, in Physics and Mathematics the Honors Geophysics I program is recommended; for students with an interest in earth sciences and a talent, or an additional interest, in Geology the Honors Geophysics II program would be recommended. For a student who becomes interested in Geophysics at a relatively late stage in his advance through the university, the Honors Geophysics III program would be recommended but for the student who intends to go on to graduate work there may be a small penalty at this and most other universities in the form of extra course work at the graduate level to make up for what he has missed at the undergraduate level. For the student who wishes to obtain a deeper knowledge of the earth sciences than can be obtained by one or two survey courses and yet does not want to commit himself to an Honors Program, the Three Year BSc with a major or a minor in Geophysics would be recommended. Occasionally, substitution of one course by another may be allowed but such requests will be treated individually and a decision made on the basis of merit and ability to schedule the work.

PROGRAMS

Degree programs offered within the Department of Geophysics:
Three Year BSc
Honors BSc (Geophysics I, II, III)

Three Year BSc

Requirements for Admission

Candidates must satisfy the general regulations for the BSc degree and include in their program the following courses:

Physics 20

Applied Math 20, or Math 24, or Math 27

Applied Math 270

Geophysics 202, 302, 304

Physics 256

Geology 211*

Geology 20 and Geophysics 21 are recommended but are not obligatory

A candidate should consult the Head of the Department to arrange his program which may begin either at the end of the First Year or the Second Year.

*This is regarded as a Geophysics course for the purposes of subject area concentration.

Honors BSc

Geophysics I (Physical)

Requirements for Admission First Year General Program with Physics 20 and Applied Mathematics 20 or Mathematics 24 or 27 as principal courses. Geology 20 is recommended as a subsidiary course. Students planning to enter a graduate school are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

SECOND YEAR

Principal Courses

Geology 211

Geophysics 202

Physics 250, 264, 265

Subsidiary Courses

Applied Mathematics 200, 202 OR

Applied Mathematics 270 and one option OR

One of:

(a) Second year of Program in Honors Physics

(b) Second year of Program in Honors Mathematics

(c) Second year of Program in Honors Applied Mathematics

(d) Second year of Program in Honors Engineering

(e) Second year of Program in Honors Astronomy

Students who wish to enter the Third Year Honors Geophysics program after taking one of these programs must first consult the Head of the Geophysics Department who will give him advice on options and subsidiary courses.

THIRD YEAR

Principal Courses

Geophysics 302, 303, 304

Geology 311

Subsidiary Courses

Applied Mathematics 300, 370 or 380

Physics 366

One option (excluding Geophysics 21)

FOURTH YEAR

Principal Courses

Geophysics 400, 401, 470

One of Applied Mathematics 340, 360 or Fourth year Courses

Subsidiary Courses

Geophysics 458

One senior option from Physics or Astronomy or Geology

One option (excluding Geophysics 21)

Geophysics II (Geological)

Requirements for Admission First year General Program with Physics 20 and Geology 20 as principal courses, Applied Mathematics 20 or Mathematics 24 or 27 and Chemistry 20 or 23 as subsidiary courses.

Students planning to enter a graduate school are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

SECOND YEAR

Satisfies requirements of second Year Geology programs with permission of Head of Geology Department

Principal Courses

Geology 219, 260

Physics 256

Geophysics 202 or Chemistry 214

Subsidiary Courses

Applied Mathematics 270

THIRD YEAR

Principal Courses

Geophysics 302, 304

Geology 320, 340

Subsidiary Courses

One of Geophysics 303, Applied Mathematics 370, 380

One option (Geophysics 202 if not taken in 2nd year)

FOURTH YEAR

Principal Courses

Geophysics 400, 401, 470

Geology 350

Subsidiary Courses

Geophysics 458

One senior option from Physics, Astronomy, Mathematics, Applied Mathematics, or Geology

One option (excluding Geophysics 21)

Geophysics III (after Three Year BSc)

Requirements for admission Three year BSc with *Geophysics major* plus departmental permission; permission to enter this program will not be granted to students graduating with an average of less than 75% (or equivalent grade point average) in their Three Year BSc program.

FOURTH YEAR

Principal Courses

Geophysics 303, 400, 401, 470

Geology 311

Subsidiary Courses

Applied Mathematics 370

Physics 366

Geophysics 458

COURSES

21. Geophysics Physics of the Earth. A survey of: origin and development of the earth and solar system, constitution of the earth, tectonophysics, oceanography, meteorology, application of physical and chemical methods to oil and mineral exploration.

202. Geophysics Seismology. Fundamentals of seismology and wave propagation with applications to seismic exploration methods, studies of the earth's interior and earthquakes.
Prerequisites: Applied Mathematics 20 (or equivalent), Physics 20
2 lectures.

302. Geophysics Exploration Geophysics. An introduction to gravitational, magnetic, electromagnetic, electrical and radioactive exploration methods.
Physics 264, 265 (or 256); Applied Mathematics 270 or equivalents are helpful backgrounds.
2 lectures.

303. Geophysics Potential Theory. Application of potential theory to problems concerning the earth's gravitational and magnetic field.
Prerequisites: Physics 264, 265 (or Physics 256), Applied Mathematics 270 or equivalents
2 lectures.

304. Geophysics Laboratory. Covers various problems in exploration geophysics, earthquake seismology and computer programming and instrumentation.
Geophysics 302 is a corequisite; Physics 264, 265 (or Physics 256), Applied Mathematics 270 or equivalents are helpful backgrounds
4 laboratory hours.

400. Geophysics Communication theory. Introduction to time-series analysis and digital filtering with applications to geophysical problems.
Prerequisites: Applied Mathematics 270 (or equivalent) Geophysics 202 (or equivalent)
2 lectures, 2 laboratory hours.

401. Geophysics Physics of the earth's interior. Application of mechanics, thermodynamics and atomic physics to problems of the earth.
Prerequisites: Geophysics 202, 302, 303, 304 or equivalents
2 lectures.

458. Geophysics Geophysics Seminars. This is a course in which the students are required to prepare and present orally, papers on specified topics; the papers are also written in a style normally used for published papers.
For Honors Geophysics students (4th year)

470. Geophysics Thesis. A report on a field or laboratory study conducted by the student.
For Honors Geophysics students (Fourth Year)

One full course.
NOTE: Geology 211 and 311 are regarded as Geophysics courses for the purposes of subject area concentration.

DEPARTMENT OF MATHEMATICS

Departmental Office - Room 3005
Engineering and Mathematical Sciences Building
Phone - 3654

Chairman of Department: Borwein, D., BSc Witwatersrand: PhD, DSc London, FRSE.
PROFESSORS: Ali, Borwein, Cole, Moore, Ritcey, Thierrin; ASSOCIATE PROFESSORS: Bode, Bryan, Cass, Chan, Florence, Haq, McKay, Robinson, Shawyer, Wonnacott; ASSISTANT PROFESSORS: Baskerville, Biggs, Bruen, Cass, Dawes, Delkin, Florence, Heinicke, Klass, Miller, Milnes, Rankin, Reis, State, Strube, Vranch; LECTURERS: Callaghan, Horrocks, Mereu, Rinco.

PROGRAMS

Mathematics may be elected as the subject of concentration within the following degree programs:

Three Year BSc, General BA, Honors BA, Honors BSc.

Departmental requirements pertaining to these programs are specified below.

Three Year BSc Programs

Two basic programs are offered:

(a) Mathematics 30, 32, 34 and at least one of Mathematics 31, 35, 36, 40, 44.

(b) Mathematics 250, 256, 278 and at least one Mathematics course numbered 300 or above.

Other programs may be set up in consultation with the Department. A prerequisite for any Three Year BSc Program is Mathematics 24 or 27 or Applied Mathematics 20.

General BA Program

A prerequisite for this program is Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20.

HONORS BA and BSc Programs

Requirements for Admission, Progression and Graduation: The requirements for admission to an Honors Program in Mathematics are the First Year General Program with Mathematics 24 or 27 or Applied Mathematics 20 and any two other courses as principal courses. See also for requirements concerning the joint Honors Program in Philosophy and Mathematics and for the Honors Program in Economics, Mathematics option.

In order to qualify for the Honors BA degree, a student must successfully complete one of Programs 1, 2, 3 or 4 listed below.

In order to qualify for the Honors BSc degree, a student must successfully complete one of Programs 1, 2 or 3 with at least TWO of the five subsidiary courses chosen from Honors courses offered by the Faculty of Science.

Students who plan to continue into graduate studies are advised to take French or a foreign language if they have not already done so in their First Year.

SECOND YEAR

Principal Courses

Mathematics 250, 256, 278

Subsidiary Courses

Two options. A student intending to proceed in the Actuarial Mathematics Program should choose Mathematics 253 as one of these options.

THIRD AND FOURTH YEARS

In the Third and Fourth Years, a student may elect one of four programs.

A student who has completed the Second Year of the Computer Science Program may be permitted to enter one of the Programs 1, 2 or 3 provided he has taken Mathematics 256. Such a student must take Mathematics 278 before the end of Third Year.

MATHEMATICS (Program 1)

THIRD YEAR

Principal Courses

Mathematics 350, 356

One other Mathematics course numbered 300 or above

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Two of Mathematics 450, 456, 460

Two Mathematics courses numbered 300 or above

Subsidiary Courses

One option

ACTUARIAL MATHEMATICS (Program 2)

Program 2 will prepare students to write the Preliminary Actuarial Examinations, Parts 1 and 2, prepared by the Educational Testing Service, and also to write Parts 3 and 4 of the Actuarial Examinations. Each year these examinations, which may be written in London, will be held in May and November. Applications to write the examinations must be received by the Society of Actuaries not later than April 1 and October 1 respectively.

THIRD YEAR

Principal Courses

Mathematics 353, 355, 356

Subsidiary Courses

Two options

One of these options must be Mathematics 253 if it has not been taken previously.

FOURTH YEAR

Principal Courses

Mathematics 463

Three Mathematics courses numbered 300 or above

Subsidiary Course

One option

MATHEMATICAL STATISTICS (Program 3)

THIRD YEAR

Principal Courses

Mathematics 355, 356

One Mathematics course numbered 300 or above

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Two of Mathematics 445, 453, 455, 465

Two Mathematics courses numbered 300 or above, one of which must be Mathematics 350 if not taken previously.

Subsidiary Courses

One option

MATHEMATICS, ECONOMICS OPTION (Program 4)

Requirements for Admission. First Year General Program with Mathematics 24 or 27 or Applied Mathematics 20, and Economics 20 as principal courses.

SECOND YEAR

Principal Courses

Economics 230, 255

Mathematics 250, 256, 278

THIRD YEAR

Principal Courses

Economics 340

Mathematics 355, 356, 378

One of Economics 237, 351

FOURTH YEAR

Principal Courses

Economics 360

Mathematics 350, and 445 or 455

One Mathematics or Economics course numbered 300 or above

Subsidiary Course

One option

COURSES

10. Calculus with Analytic Geometry. Topics in algebra, trigonometry and analytic geometry followed by an introduction to differential and integral calculus. Any student who has two credits in grade 13 Mathematics including a credit in Calculus may not take Mathematics 10.
Prerequisite: Grade 12 Mathematics
3 lectures, 1 tutorial hour.

20. Introductory Calculus and Algebra. An introduction to calculus; a study of logic, set theory, probability theory, and the algebra of vectors and matrices.
Prerequisites: Mathematics 10 or two credits in grade 13 Mathematics including a credit in Calculus.
3 lectures.
NOTE: *Mathematics 20 is not accepted as a prerequisite for most Honors Programs offered by the Faculty of Science.*

21. Mathematics for the Social Sciences. A problem-centred course with major emphasis on calculus, linear algebra, and probability. This course is primarily designed for students registered in the Faculty of Social Science.
Prerequisites: Mathematics 10 or two credits in grade 13 Mathematics including a credit in Calculus.
3 lectures, 1 tutorial hour.

24. Calculus. Differential and integral calculus with applications.
Prerequisites: three credits in grade 13 Mathematics.
3 lectures, 1 tutorial hour.

27. Calculus. Differential and integral calculus with applications.
Prerequisites: Mathematics 10 or two credits in grade 13 Mathematics including a credit in Calculus.
3 lectures, 1 tutorial hour.

30. Algebra. An introduction to abstract algebra, with principal emphasis on the structure of groups, rings, integral domains and fields.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

31. Synthetic Geometry. Groups of transformations of the Euclidean plane, inversion, and coaxal systems; the projective plane.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

32. Linear Algebra with Applications to Geometry. Vector spaces, linear transformations and matrices, determinants. Applications to Euclidean geometry of two and three dimensions.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

33. Intermediate Calculus. Differentiation of functions of one variable including trigonometric, exponential, hyperbolic functions and their inverses. Techniques of integration of functions of one variable with applications. Functions of several variables; partial derivatives, multiple integrals. Infinite sequences and series. Ordinary differential equations.
Students who have taken Mathematics 24 or 27 or Applied Mathematics 20 may NOT take Mathematics 33.
Prerequisite: Mathematics 20 or 21
3 lectures.

34. Calculus. Review of anti-differentiation; uniform continuity, Riemann integral, indeterminate forms, improper integrals, Taylor's formula; functions of several variables, partial differentiation, multiple integration; line and surface integrals; infinite sequences and series; ordinary differential equations.
Prerequisite: Mathematics 24 or 27 or Applied Mathematics 20
3 lectures.

35. Statistics. Standard probability distributions; sampling distributions; estimation; test of hypothesis, analysis of variance; regression and correlation.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

36. Elementary Operations Research with Applications. Linear programming, dynamic programming; the shortest route problem, the maximal flow problem; probability and theory of games.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

37a. Statistical Methods. An introduction to frequency distributions, measures of central tendency, correlation, probability and hypothesis testing. Intended primarily for students in the Social Sciences, and cannot be taken for credit by students in Mathematics programs.
3 lectures, first term (half course).

38b. Statistics. Distributions, hypothesis testing, multiple regression, prediction and experimental design. Intended primarily for students in the Social Sciences, and cannot be taken for credit by students in Mathematics programs.
Prerequisite: Mathematics 37a.
3 lectures, second term (half course).

40. Elementary Theory of Numbers. Euclidean algorithm, congruences, indices, continued fractions, Gaussian integers, partitions and Diophantine equations.
Prerequisite: Mathematics 20 or 21 or 24 or 27 or Applied Mathematics 20
3 lectures.

44. Complex Variable. Complex numbers, elementary point set topology, sequences and series, Cauchy-Riemann conditions, integration. Cauchy's theorem, Taylor and Laurent expansions, residue calculus and applications.
Prerequisite: **Mathematics 34**
3 lectures.

45a. Statistical Analysis I. Multiple regression, time series analysis, sampling theory and designs.
Prerequisite: **Mathematics 35 or permission of department.**
3 lectures, first term (half course).

46b. Statistical Analysis II. Design of experiments, analysis of variance, standard statistical tests, nonparametric tests.
Prerequisite: **Mathematics 35 or permission of Department.**
3 lectures, second term (half course).

HONORS COURSES

NOTE: Associated with the group of principal Second Year honors mathematics courses is a two-hour problem session. A student taking any of these courses (i.e. Mathematics 250, Mathematics 256, Mathematics 278) is advised to fit at least one hour of this session into his timetable.

250. Linear Algebra. Vector and matrix algebra, determinants, linear equations, canonical forms. Applications to bilinear forms, quadratic forms, geometry.
Prerequisite: **Mathematics 24 or 27 or Applied Mathematics 20**
3 lectures.

253. Mathematics of Finance. Compound interest, annuities certain, amortization, sinking-fund, bonds; the mortality table; life annuities, standard forms of life insurance; commutation functions.
Prerequisites: **Mathematics 24 or 27 or Applied Mathematics 20**
3 lectures.

254. Mathematics for the Social Sciences. Advanced calculus and linear algebra. Topics include maximizing functions, differential and difference equations, and the algebra of n-dimensional vector spaces as far as

eigenvectors and quadratic forms. Cannot be taken for credit by students in Mathematics programs.
Prerequisite: Mathematics 21 or Applied Mathematics 22
3 lectures.

255b. Statistical Methods. An introductory, practical course intended primarily for honors students in departments other than Mathematics. Topics include sampling, confidence intervals, analysis of variance, regression and correlation. Cannot be taken for credit by students in Mathematics programs.
2 lectures, second term (half course).

256. Analysis I. Elementary point set topology, sequences, limits, continuity - these topics to be discussed with reference to Euclidean n-space. Differentiation, mean value theorems. Basic properties of the Riemann integral. Series: tests for convergence, uniform convergence, multiplication of series, power series.
Prerequisite: Mathematics 24 or 27 or Applied Mathematics 20
3 lectures.

278. Advanced Calculus. Functions of several variables, partial differentiation, co-ordinate transformations, Taylor's theorem, extrema, vectors, integral as a function of a parameter, multiple integration, line and surface integrals, integral theorems, ordinary differential equations.
Prerequisite: Mathematics 24 or 27 or Applied Mathematics 20
3 lectures.
Prerequisites for courses with numbers between 300 and 400 are Mathematics 250 and 256 or 278 or the permission of the Department. For courses numbered 400 or above the permission of the Department is required.

340. Number Theory. Divisibility, congruences, quadratic reciprocity, some functions of number theory, Diophantine equations, continued fractions, the distribution of primes, algebraic numbers, partitions.
3 lectures.

343a. Combinatorial Mathematics. Existence and enumeration problems; permutations and combinations, recursion and generating functions; linear programming; block designs.
3 lectures, first term (half course).

344b. Combinatorics and Graph Theory. Hamiltonian circuits; extremal graphs; switching circuits; Kuratowski's, Menger's and Konig's theorems.
Prerequisite: Mathematics 343a or permission of the Department.
3 lectures, second term (half course).

345. Sampling Theory and Design of Experiments. Simple random sampling, cluster sampling, stratified multi-stage sampling, stratified multi-stage cluster sampling, regression estimates, double sampling. Randomised experiments, randomised blocks, latin square, missing observations, factorial experiments; factors at two levels and three levels, confounding, split-plot design, balanced incomplete blocks, incomplete latin square. Problems may require computer solution.
3 lectures.

350. Algebra I. Introduction to abstract algebraic systems; elementary theory of groups, rings, fields.
3 lectures.

351. Geometry I. Synthetic Euclidean geometry; synthetic and analytic methods in projective geometry.
3 lectures.

353. Finite Differences. Advancing differences, interpolation, divided differences, central differences, inverse interpolation, summation, approximate integration; applications to life contingencies; theory of graduation.
3 lectures.

355. Statistics I. Standard distributions; sampling distributions; sampling from finite population; estimation; test of hypothesis; design of

experiments; analysis of variance and regression analysis; nonparametric methods; sequential analysis.
3 lectures.

356. Analysis II. Discussion of the real number system. Metric space topology and selected topics in real variable theory, including the Riemann-Stieltjes integral. Complex variable theory differentiation and integration, Cauchy's theorem, Taylor and Laurent expansions, residue calculus and applications. Fourier and Laplace transforms.
4 lectures.

363. Numerical Methods
Not offered 1973-74
See Applied Mathematics 360.

378. Differential equations. Ordinary differential equations, solution in series, matrix systems, Green's functions, eigenvalue problems, simple eigenvalue expansions. Non-linear systems, stability, phase plane, Liapounov functions.
3 lectures.
- not offered 1973-74

445. Theory of Probability. Probability measure, Lebesque-Stieltjes and Riemann-Stieltjes integrals for n variables; Fourier integrals, matrices and quadratic forms; Beta and Gamma functions; orthogonal polynomials; mathematical expectation; correlation and regression, distribution theory; limit theorems, asymptotic distributions; significance tests.
3 lectures.

450. Algebra II. Elementary factorization theorems; field theory; Galois theory; groups with operators, semisimple rings, general factorization theorem.
3 lectures.

452. Geometry II. Algebraic Geometry. Affine and projective varieties; divisors; Riemann-Roch Theorem; additional topics to be selected.
3 lectures.
- not offered 1973-74

453. Methods of Operations Research. Optimization (linear, quadratic, and dynamic programming, Lagrange multiplier, etc.). Applied probability (queuing theory, Markov chains, etc.). Miscellaneous topics (theory of games, graphs, etc.).
Prerequisites: Mathematics 250, and 256 or 278
3 lectures.

455. Statistics II. Distributions in Rn; sampling theory and distributions; theory of estimation; fiducial inference; testing of hypothesis; analysis of variance; design of experiments and balanced designs; multiple correlation and regression; multivariate analysis; time series.
3 lectures.

456. Analysis III. Topics in point set theory. Introduction to measure and integration theory with applications.
3 lectures.

460. Introductory Topology. Metric spaces, topological spaces, connectedness, compactness, separation axioms, product spaces, function spaces, nets and convergence; simplicial complexes, elementary simplicial homology, classifications of compact 2-manifolds.
3 lectures.

463. Life Contingencies. General Life annuities and insurances, net and gross premiums, reserves, non-forfeiture values, combination benefits, joint annuities, last survivor annuities, generalized multiple life annuities, contingent assurances, reversionary annuities, population tables, multiple decrement tables.
3 lectures.

464. Ordinary Differential Equations. Existence theorems; general linear equation, matrix systems, adjoint systems, Green's function, expansion problems; stability theory.
3 lectures.

465. Multivariate Statistical Analysis. Matrix theory; normal distributions; correlations.
3 lectures.

468. Differential Geometry and Tensor Calculus. Theory of curves, Serret-Frenet formulae; curvilinear co-ordinates, first and second fundamental forms, geodesics, Codazzi equations, Gauss-Bonnet theorem. Introduction to differential geometry in the large. Introduction to n-dimensional Riemann geometry tensor analysis and general relativity.
3 lectures.
- not offered 1973-74

470. Foundations of Mathematics. Formal systems; first-order theories, the completeness theorem, one of the standard axiomatic set theories. Development of mathematics from set theory emphasizing the number systems of mathematics. Discussion of various philosophies of Mathematics.
3 lectures.

478. Linear Operators. Continuous operators in normed spaces, linear functionals, contraction mappings, Hilbert space, adjoint operators, completely continuous operators, fixed point theorems, applications to integral equations and boundary value problems.
3 lectures.
- not offered 1973-74

488. Complex Analysis. Harmonic, entire and meromorphic functions, infinite products, the Gamma function, normal families, conformal mapping and Riemann mapping theorem. Elliptic functions, Picard Theorem, analytic continuation and Riemann surface of a function.
3 lectures.

DEPARTMENT OF PHARMACOLOGY

Departmental Office MS 275

Professor and Head of the Department: Gowdey, C. W., BA, MSc UWO: DPhil Oxon

PROFESSORS: Hamilton, Parker; ASSOCIATE PROFESSORS: Colhoun, Hirst, Philp; ASSISTANT PROFESSOR: Hersey; LECTURERS: Borda, Lovegrove, Meltzer, Spoerel, White; INSTRUCTORS: Dinel, Geddes, Hansford.

PROGRAMS

The Department of Pharmacology does not offer undergraduate degree programs at this time. In cooperation with the Department of Physiology, however, it does provide a Pharmacology option in the Fourth Year of the Honors Physiology Program; for further details, consult the listings of the Department of Physiology.

HONORS COURSES

Prerequisites for Fourth Year courses: Successful completion of previous year's program or permission of the Head of the Department.

311. Biology (formerly General Physiology and Pharmacology). (Given in cooperation with the Department of Physiology). A survey of the principles of general physiology and pharmacology.
2 lectures, full course.

441. Seminar. The preparation of essays and the presentation of scientific reports or papers on assigned topics in pharmacology.
1 hour - all year, half course.

460b. Selected Topics in Pharmacology at an advanced level. This course will deal with contemporary problems in pharmacology with stress upon environmental toxicology.
Prerequisite: enrolment in Pharmacology 462
2 lectures, half course.

461. Chemical Pharmacology. Pharmacological screening, pharmacodynamics, structure-activity relationships, metabolism and toxicology of selected drug classes. enrolment limited.
2 lectures, full course.

462a. Survey of Pharmacology. Classification of the major drugs with emphasis on their absorption, metabolism, excretion, mechanism of action and importance.
2 lectures, half course.

480. Laboratory and Tutorial. A course of training in the techniques employed in modern pharmacological investigations. Opportunity for original projects will be provided. The tutorial will supplement both lecture and lab-will supplement both lecture and laboratory work. enrolment limited.
Minimum of 10 hours/week, full course.

DEPARTMENT OF PHYSICS

Room PB 125; Tel. 679-2283

(Acting Chairman of Department) Lyon, G. F., BA, MA, PhD Saskatchewan

PROFESSOR EMERITUS: Durnford PROFESSORS. Brannen, Ferguson, Forsyth, Hay, Lyon, Moorcroft, Nuttall, McGowan, Rose, Vogan. ASSOCIATE PROFESSORS: Bow, Froelich, Fulford, Jarmain, John, Jones, Lowe, Murty, Stewart, Tong, Whippey. ASSISTANT PROFESSORS: Gaily, Gallaher, Lane-Smith, Rosner, Tunaley. INSTRUCTOR: Chefurka. SESSIONAL LECTURERS: Dawson, MacDonald, Marton.

PROGRAMS

The Physics Department offers a program leading to a BSc degree after three years of study and an Honors Program leading to an Honors BSc after four years of study. The Honors program is designed to allow the study of basic Physics as well as its relationship to other academic disciplines. With a suitable choice of optional courses, the student may progress to graduate research, secondary school teaching, or employment in industry or government. Students should consult the appropriate section of this calendar for details of academic regulations and grades required for admission, progression and graduation in these programs.

THREE YEAR BSc PROGRAM

Requirements for Admission: A First Year General Program which includes one of Physics 20, 22 or 26 and one of Applied Mathematics 20 or Mathematics 24 or 27. Admission to this program will be granted only after consultation with the Department prior to registration. To meet the requirements for this program a student must complete at least four senior courses in Physics. A program is outlined below:

SECOND YEAR

Physics 252 and 256

Applied Mathematics 270 or 202* or

Mathematics 278

Plus two options

THIRD YEAR

Physics 367 and one of Physics 203, 353, 366. Plus 3 options. Other programs may be set up in consultation with the Physics Department but must contain P252, 256, 367 or equivalent.

*The student must take AM200 concurrently or in his third year.

HONORS BSc

Requirements for Admission: First Year General Program with Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27 as principal courses. Students who fail to maintain the required standing to continue, or decide not to continue, in this program may transfer to a Three Year Program, provided that they meet all or equivalent requirements of that program.

All students must consult with the Physics Department concerning their choice of courses before registering in each year of the program. Normally, six courses will be taken each year. Competence in computer programming is highly recommended for all Physics students.

SECOND YEAR

PRINCIPAL COURSES

Applied Mathematics 200 and 202 or equivalent

Physics 250, 254, 255

SUBSIDIARY COURSE

One Option

THIRD AND FOURTH YEARS

PRINCIPAL COURSES

Applied Mathematics 300

Physics 353, 357, 359, 451a and 458

Plus any other five Honors courses (or half-course equivalents), two of which must be Physics courses numbered 300 or higher.

SUBSIDIARY COURSES

Any two options

COURSES

20. Introductory Physics. This course is a suitable prerequisite for all science programs and is required for those students intending to specialize in the Physical Sciences. Grade XIII Physics is strongly recommended.
Prerequisite: Grade XIII Calculus plus either Grade XIII Algebra or Relations and Functions
Corequisite: One of Applied Mathematics 20, Mathematics 24 or 27
2 lectures, 3 laboratory/tutorial hours.

21. Introductory Modern Physics. A treatment at the elementary level of the experimental facts of modern physics and the interpretation of these facts in terms of atoms and molecules, electrons and other particles, and quantized energy. The necessary concepts from classical physics are reviewed and conservation laws are stressed.
This course may not be taken by a freshman student registered in the Faculty of Science. This course is not a laboratory course in physics.
3 lecture/laboratory hours.

22. Introductory Physics. For students intending to pursue most programs in the Biological and Health Sciences; this course has no corequisites and is not generally acceptable as a prerequisite for Honors Programs

in the Physical Sciences. Physics 22 is an acceptable prerequisite for the 15 course BSc programme in Physics.
Prerequisite: Grade XIII Calculus plus either Grade XIII Algebra or Relations and Functions
2 lectures, 3 laboratory/tutorial hours.

26. Introductory Physics. For students in First Year Engineering Sciences.
Prerequisite: Grade XIII Calculus plus either Grade XIII Algebra or Relations and Functions
Corequisite: Applied Mathematics 20
2 lectures, 3 laboratory/tutorial hours.

33. The Physics of Music and Sound. An introduction to acoustics with applications to the production and transmission of musical sounds; including wave motion; sound waves and their characteristics; vibratory sources of sound; harmony and scales; hearing; electronic recording, reproduction and synthesis of sound; acoustics of buildings and building materials. Open to students in the Faculty of Music, and those students with some formal musical training who are not pursuing a major in Physics.
3 lecture/laboratory hours.

34. Physics of Speech and Hearing. An introduction to the Physics of Sound primarily for students in the Communication Disorders program of the Faculty of Medicine. Topics will include simple harmonic motion, vibration, resonance, waves, transducers, acoustic measurements, and electronic devices.
2 lectures, 2 laboratory hours.

38. Selected Readings in Physics. Intended for non Physics majors. A historical survey of major advances in Physics and discussion of their significance and their practical applications today. Emphasis is on understanding of the basic principles of these astonishing discoveries and the extent of their impact in our times, with a minimum of mathematics.
Prerequisite: One of Physics 20, 21, 22 or 26
2 lectures.

HONORS COURSES

203. Fundamentals of Meteorology. The atmosphere, the how and why of the basic meteorological measurements. A physically oriented treatment of air masses and fronts, cyclones and anticyclones, with applications of thermodynamics to adiabatic changes in dry and moist air; stability, instability, convection and turbulence. Special topics such as severe types of storms, and the problems posed by both deliberate, and inadvertent, climate modifications.
Prerequisites: Physics 20, 22 or 26 and Applied Mathematics 20 or Mathematics 24 or 27; or permission.
2 lectures.

204. Intermediate Physics for Biologists. Material on the mechanics of solids and fluids, sound, optics, DC and AC circuits, atomic and nuclear physics, with applications and examples pertinent to biological and medical situations.
Prerequisite: Physics 20, 22 or 26
2 lectures, 3 laboratory hours alternate weeks.

250. Classical Mechanics. The dynamics of systems of particles described via Lagrange's equations and Hamilton's principle with applications to rigid body motion, central force motion, vibrating systems and normal mode analysis.
Prerequisites: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 and 202 or equivalent
3 lectures.

252. Classical Mechanics. Vector algebra. A critical analysis of Newton's laws and their application to rotational motion, rigid body motion, central force motion and simple systems of particles. An introduction to relativistic mechanics.

Prerequisites: Physics 20, 22 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 270 or 200 or Mathematics 278
2 lectures.

253. Intermediate Physics for Chemists. Essential topics in electricity and magnetism, classical mechanics and physical optics with emphasis where possible upon instrumentation.
Prerequisite: Physics 20 or 26
3 lectures, 3 laboratory hours.

254. Waves. A general but rigorous treatment of electromagnetic and sound wave phenomena including the wave equation, reflection, impedance, dispersion, diffraction, interference, coherence, polarisation and birefringence. Plane-wave solutions of Maxwell's equations and electromagnetic radiation from a point charge. This course is intended for Honors Physics students. (See Physics 264 for other Natural Science Honors students).
Prerequisites: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 or 202 or equivalent
2 lectures, 3 laboratory hours.

255. Electricity and Magnetism. A detailed discussion of the basic laws of electrostatics, magnetostatics and electromagnetic induction leading towards an empirical derivation of Maxwell's equations followed by a study of the effects of electric and magnetic fields in matter. This course is intended for Honors Physics students. (See Physics 265 for other Natural Science Honors students).
Prerequisites: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisites: Applied Mathematics 200 and 202 or equivalent
2 lectures, 3 laboratory hours.
NOTE: The laboratory of 254 and 255 will include the study of error analysis, numerical analysis and elementary computer programming and their applications to specific experiments.

256. Light; Electricity and Magnetism. An intermediate course in geometrical and physical optics; electrostatics, magnetism; and electromagnetism.
Prerequisites: Physics 20, 22 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
3 lectures, 3 laboratory hours.

264. Waves. Lectures are those of Physics 254 but the laboratory is 3 hours, alternate weeks. This course is intended for Natural Science Honors students other than Honors Physics students.
Prerequisites: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisites: Applied Mathematics 200 or 202 or equivalent
2 lectures, 3 laboratory hours, alternate weeks.

265. Electricity and Magnetism. Lectures are those of Physics 255 but the laboratory is 3 hours, alternate weeks. This course is intended for Natural Science Honors students other than Honors Physics students.
Prerequisites: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisites: Applied Mathematics 200 and 202 or equivalent
2 lectures, 3 laboratory hours, alternate weeks.

353. Statistical and Thermal Physics. An introduction to the basic concepts of statistical mechanics; the interpretation of temperature and entropy in equilibrium systems and derivation of the laws of thermodynamics. The quantum statistics of Bosons and Fermions with applications to black body radiation and transport phenomena.
Prerequisite: Physics 250 or 252
2 lectures.

357. Quantum Physics. An introduction to atomic, molecular, nuclear and particle physics. The course combines elementary quantum mechanics with experimental illustrations drawn from modern physics.
Prerequisite: Physics 250, 254 and 255 or equivalent
3 lectures.

359. Modern Physics Laboratory. A comprehensive laboratory designed to familiarise the student with the basic concepts of modern physics, with emphasis on the development of experimental skills.
Prerequisites: Physics 254 and 255, or equivalent
6 laboratory hours.

360. Advanced Classical Mechanics. Given in collaboration with the Department of Applied Mathematics (AM350). A logically connected development of classical mechanics including a thorough treatment of Lagrangian and Hamiltonian methods. Special relativity may be included.
Prerequisites: Physics 250, Applied Mathematics 200 and 202 or equivalent
3 lectures.

364a. Applied Optics. A discussion of the design, operation and uses of optical devices including spectrographs, spectrometers and interferometers. Material on sources and detectors of optical radiation, including lasers and photomultipliers.
Prerequisite: Physics 254 or 264
2 lectures, 1 term (half course).

365b. Electromagnetic Theory 1. A study of static electric and magnetic fields using vector calculus; time varying electric and magnetic fields, Maxwell's equations and solutions; wave propagation in continuous and discontinuous media, wave guides; retarded potentials, radiation.
Prerequisite: Physics 255 or 256
Corequisite: Applied Mathematics 300
3 lectures, second term only (half course).

366. Applied Electronics. A study of the operation and applications of electronic and solid state devices and circuits.
Prerequisite: Physics 253, 255 or 256
2 lectures, 2 laboratory hours.

367. Advanced General Physics. Topics in (a) electromagnetic theory (b) atomic and molecular physics (c) the physics of solids and (d) nuclear and particle physics. Quantum mechanical ideas are introduced in (b), (c) and (d).
Prerequisites: Applied Mathematics 270 or 202 or Mathematics 278, Physics 252 and 256 (or equivalent), or permission.
3 lectures, 3 laboratory hours.

451a. Quantum Mechanics 1. An introductory course in quantum mechanics to include discussion of the free particle, barrier penetration, the harmonic oscillator and the hydrogen atom.
Prerequisites: Physics 357 and Applied Mathematics 300
3 lectures, first term (half course).

458. Seminar. Students will conduct seminars on topics of current interest and write an essay upon an assigned topic.
1 hour, (half course).

461b. Quantum Mechanics II. Time-independent and time-dependent perturbation theory, scattering and radiation processes.
Prerequisite: Physics 451a.
3 lectures, second term (half course).

462a. Nuclear Physics. An introduction to nuclear and particle physics.
Prerequisite: Physics 357
2 lectures, 1 term (half course).

463b. Atmospheric Physics. Basic concepts of physics applied to atmospheric phenomena.
Prerequisite or corequisite: Physics 353
2 lectures, 1 term (half course).

464b. Atomic and Molecular Physics. A study of simple atomic and

molecular systems with emphasis upon their interactions with each other and with the electromagnetic field.
Prerequisites: Physics 254 and 357
2 lectures, 1 term (half course).

466b. Radio Physics. A discussion of selected topics in circuit analysis, transmission line theory and the propagation of radio waves.
Prerequisite: Physics 365b
2 lectures, second term (half course).

467a. Solid State Physics. An introductory course covering the thermal, electric and magnetic properties of crystalline matter.
Prerequisite: Physics 357
2 lectures, one term (half course).

468b. Plasma Physics. An introduction to the theory of highly ionised gases, their properties, production, diagnostics and application to thermonuclear fusion.
Prerequisite: Physics 365b
2 lectures, second term (half course).

469. Laboratory. A laboratory in which the student selects or suggests a project and works under the supervision of a faculty member. This may include instruction in workshop practice, electronics instrumentation and the techniques of high-vacuum or low temperature physics.
Prerequisite: Physics 359
9 laboratory hours.

DEPARTMENT OF PHYSIOLOGY

Health Sciences Centre
University of Western Ontario

CHAIRMAN: Brooks, V. B., BA Toronto, MS chicago, PhD Toronto
PROFESSORS: Armstrong, Brooks, Calaresu, Mogenson; ASSOCIATE PROFESSORS: Bondy, Critz, Dellow, Harding, Mercer, Seguin, Squires, Vanderwolf, Wiesendanger; ASSISTANT PROFESSORS: Cooke, Cunningham, Girvin, Lodge, O'Hea, Weick; VISITING ASSISTANT PROFESSOR: Swart; LECTURER (SESSIONAL): Sellery; HONORARY LECTURERS: Chess, Manning, Rounthwaite; INSTRUCTOR: Bolter.

PROGRAMS:

The Department of Physiology participates in the Three Year Biology BSc program. For complete details the student is referred to the Biology listing of this Calendar.

The Department of Physiology offers a program leading to the Honors BSc Degree. In Fourth Year of this program, the students may choose either the Physiology option or the Physiology and Pharmacology option.

In conjunction with the Department of Psychology, the Physiology Department offers an Honors Program leading to the BSc degree in Psychology and Physiology.

Honors BSc Program:

Physiology:

Concomitant with the introduction of the new Three Year Biology BSc program the present Honors BSc program will be phased out and replaced by a new Fourth Year Honors Program.

SECOND YEAR

See year 2 Biology BSc

THIRD YEAR:

Principal Courses:

Biology 310 (formerly Physiology 300)

Biology 311 (formerly Physiology 301)

Two of:

Biology 202 (formerly Microbiology 300)

Biology 300 or 301 (formerly Biochemistry 300 or 406)

Biology 302 (formerly Biophysics 300)

Biology 309 (formerly Anatomy 300)

Subsidiary Courses:

Two Options:

Chemistry 203 or 250 will be required for students who have not previously taken Organic Chemistry.

Applied Mathematics 20 or Mathematics 20, 24 or 27 is required of students who have not previously taken a university course in Mathematics.

FOURTH YEAR:

Requirements for admission into the Honors Programs in Physiology and Physiology and Pharmacology for all students graduating from the three-year Biology BSc Program in 1974, besides the general prerequisites for entrance into the Honors Programs in Biological Sciences have the following additional prerequisites:

Physics 20 or 22

Biology 310 (formerly Physiology 300)

Biology 311 (formerly Physiology and Pharmacology 301)

Two of:

Biology 202 (formerly Microbiology 300)

Biology 300 or 301 (formerly Biochemistry 300 or 406)

Biology 302 (formerly Biophysics 300)

Biology 309 (formerly Anatomy 309)

Students may choose either the Physiology option or the Physiology and Pharmacology option in this last year of the program.

Students may choose one of the following options:

Not all courses and options will be offered every year. Consult the Department before registering.

PHYSIOLOGY OPTIONS:

Systemic Physiology Option:

Principal Courses:

Science 440a

Physiology 441a, 480

Three of: Physiology 442a, 443b (formerly 442b), 461b, 462a, 464, 465b, 466a, 467b, 469b

One full course and a half course or three half courses at a senior level with permission of the Department.

Subsidiary Courses:

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Neurophysiology Option:

Principal Courses:

Science 440a

Physiology 441a, 463b, 468

Biophysics 461a, Anatomy 464 (or equivalents approved by the Department of Physiology).

One full course and a half course or three half courses at a senior level with permission of the Department of Physiology.

Subsidiary Courses:

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Endocrinology Physiology Option:

Principal Courses:

Science 440a

Physiology 441a, 462a, 480

Two of:

Physiology 442a, 443b (formerly 442b)

Physiology 461b, 464, 465b, 466a, 467b

Physiology 469b

One full course and a half course or three half courses from the following list, selected in consultation with the Department of Physiology.

Biochemistry 460

Biochemistry 464b

Biophysics 462b

Bacteriology 470a

Bacteriology 471b

Bacteriology 472b

Other senior courses which may meet specific interest or requirements.

Subsidiary Courses:

Math 255 (or equivalent)

If a course in Statistics not previously taken.

Physiology And Pharmacology Option:

Principal Courses:

Science 440

Pharmacology 441, 460, 461, 462, 480

Two of:

Physiology 443b, 461b, 463b

Physiology 464, 465b, 466a

Physiology 467b

Subsidiary Courses:

One option from:

Biology 205 (formerly Plant Sciences 300)

Psychology 281 (formerly Psychology 255)

Mathematics 255

Biology 312 (formerly Zoology 465)

(If a course in Statistics not previously taken).

One additional option

PSYCHOLOGY AND PHYSIOLOGY 1973-74

Honors Psychology and Physiology

Requirements for Admission:

First Year

General Program

(Science) with Psychology 20, Biology 20, Chemistry 20, or 23 and Physics 20 as principal courses. Applied Mathematics 20 or Mathematics 24 or 27 is recommended as an option.

SECOND, THIRD AND FOURTH YEARS

After the first year, this programme requires six full honors courses (or half course equivalents) in Psychology, seven full honors courses (or half course equivalents) in Biology/Physiology, and two full courses in other Departments. The normal load is five full courses (or half courses equivalents) per year. All courses taken in any year will be considered principal courses.

SECOND YEAR:

Required Courses:

Psychology 221a and 222b

Psychology 281

Chemistry 203

Biology 200 or 206

One of:

Physics 204, 256

Applied Mathematics 20, 200

Mathematics 20, 24, 27, 250

or other course selected in consultation with programme advisors.

THIRD YEAR:

Required Courses:

Biology 310

Biology 311

Biology 301 or 309

One full (or two half courses) from:

Psychology 240 through 279 or

Psychology 340 through 379

Two of:

Psychology 223b, 224b, 225a, 226b, 227b

(all are half course).

FOURTH YEAR:

Principal Courses:

Physiology 443b or 463b, 480

Three of: Physiology 461b, 462a, 464, 465b, 466a, 467b, 469b. (all are half courses).

Two full courses, to be made up from:

Psychology 201a, 202b, 211, 223b, 224b, 225a, 226b, 227b

(or any other Psychology honors courses selected in consultation with programme advisors.

Students in this program will undertake a major project in behavioral physiology or sensory processes as part of their experimental work in Physiology 480.

Courses:

30. Human Physiology. A survey course of lectures, demonstration and laboratory exercises outlining the principles of mammalian physiology with emphasis on human physiology: general properties of the living cell and internal environment, nerve and muscle, cardiovascular, respiratory and gastrointestinal system; metabolism and nutrition; body fluids and the kidney; the nervous system; endocrine glands; reproduction; controls regulations and homeostasis.
Enrolment limited.
2 lectures, 3 laboratory hours.

342. Human Physiology. A survey for students in Honors Physical and Health Education.
2 lectures, 3 laboratory hours.

310. Biology (formerly Physiology 300). Mammalian Physiology. A survey of the physiology of various systems (e.g. cardiovascular, digestive, respiratory, etc.) of the mammal.
(Prerequisites: Chemistry 203 or equivalent; Physics 20 or 22;
One of Mathematics 20, 24, 27 or Applied Mathematics 20, Biology 20, or by permission of the Department).
2 lectures, 3 laboratory hours.

311. Biology (formerly Physiology and Pharmacology 301). General Physiology and Pharmacology. A survey of cellular and general physiology and general pharmacology.

(Prerequisites: Chemistry 203 or equivalent; Physics 20 or 22;
One of Mathematics 20, 24, 27 or Applied Mathematics 20; Biology 20; or by permission of the Department).
2 lectures.

441a. Seminar. The presentation of scientific papers and reports and the writing of essays on assigned topics.
2 hours, (half course).

442a. Physiology of Exercise. A study of the response and regulation of the human cardiovascular, respiratory and neuromuscular systems to acute and chronic exercise.

(Prerequisite: Physiology 342 or equivalent)
1 lecture, 3 laboratory hours, (half course).

443b. Neurophysiology. A study of the physiology of the central and peripheral nervous systems. In this course, neurophysiology will be presented at a more advanced level than in Biology 310 or an equivalent survey course in Physiology, but at a less quantitative level than Physiology 463.
2 lectures, one term only (half course).

461b. Systematic Mammalian Physiology. Special physiology of the blood and other fluids, the cardiovascular and respiratory systems.
2 lectures, one term only (half course).

462a. Metabolic and Reproductive Physiology. Role of the endocrine system in regulation of metabolism and reproduction in mammals.
2 lectures, one term only (half course).

***463b. Advanced Neurophysiology.** Selected major topics in neurophysiology will be studied in detail at an advanced and quantitative level.
(Prerequisites and Corequisites: Biophysics 461a, Antomy 464 (or equivalents approved by the Department).
2 lectures, one term only (half course).

464. Systems Analysis in Physiology. The use of control system theory in physiology and a study of some examples.
1 lecture, (half course).

465b. Neurophysiology of Autonomic-Somatic Integration. A study of the integrated responses of the whole animal to environmental changes in terms of the internal and external activities controlled by the nervous system.
2 lecture hours, (half course).

466a. Body Water and Renal Physiology. Body fluid compartments and kidney function.
2 lectures, one term only (half course).

467b. Selected Advanced Topics in Physiology. A seminar course, by arrangement with the Department of Physiology.
(half course).

468. Laboratory Course in Electro- and Neurophysiology. An introduction to experimental electro- and neurophysiology. The course will be oriented towards obtaining quantitative data from experimentation for subsequent analysis. Conference sessions will be held at which results will be discussed and plans for further experimentation made.
Minimum 10 hours per week.
(Corequisite: Physiology 463; or equivalent by consultation with the Department).

***469. Gastrointestinal Physiology.** A study of gastrointestinal secretion, digestion, absorption and motility including hepatic physiology.
2 lectures, one term only (half course).

480. Laboratory and Tutorial. Laboratory research projects and instrumentation in physiology. Open only to honors students in Physiology.
Minimum 10 hours per week.

DEPARTMENT OF PLANT SCIENCES

B.G. 232

Chairman of Department: Bancroft, G.M., BSc, MSc Manitoba: PhD.
PROFESSORS: Bancroft, Cook, Hickman, McKeen, McLarty, Orloci, Walden, Wilson; ASSOCIATE PROFESSORS: Cavers, Fahselt, Greyson, Hopkins, van Huystee, Jancey, Phipps, Wellman; ASSISTANT PROFESSOR: Day; VISITING ASSISTANT PROFESSORS: Cummins, Gittins, Harle, Hayden, Maun, Scott; INSTRUCTORS: Day, Elgie, Howard, King, Scott. HONARARY LECTURER: Lee.

The Department provides for study in many areas of the plant sciences including: ecology, genetics, morphogenesis, mycology and plant pathology, phycology, plant biochemistry and physiology, radiobiology, systematics. The programs lead to a General BA degree, a BSc Biology degree or to an Honors BSc Plant Sciences degree. The latter provides a basis for professional work in academic, government and industrial fields.

PROGRAMS

GENERAL BA DEGREE

A BA degree with an area of concentration in Plant Sciences is no longer offered, but some biology and plant sciences courses are available to students taking a BA degree. Students who registered prior to September 1972 in a BA program with an area of concentration in Plant Sciences may complete their program by substituting the appropriate new courses (as specified by the Department) or may transfer to the new BSc Biology three year program, provided they fulfill the requirements of that program. Please consult the Department prior to registration.

GENERAL COURSES

21. Biology. The fundamental principles of biology with stress on the cell as a unit, the origin and preservation of the individual and the race, the mode of inheritance, and the application of biology to social and economic problems.
The course is given both in the Department of Plant Sciences and in the Department of Zoology.
2 lectures, 2 demonstration/laboratory hours, Full Course.

35. Genetics. Principles of heredity discussed at various levels of cellular organization, from the chromosome within the cell nucleus to populations of multicellular organisms, using plants and animals as illustrative material.
Prerequisites: Biology 20, or Biology 21
2 lectures, Full Course.

36. Microbiology. Morphology, biology, classification and economic importance of microorganisms.
Prerequisite: Biology 20, or Biology 21
4 lecture, laboratory hours.

36y. Microbiology. (For registrants in the Home Economics Program only. The lectures are the same as those of Plant Sciences 36.)
Morphology, biology, classification and economic importance of microorganisms.
Prerequisite: Biology 20, or Biology 21
1 lecture hour both terms, 3 laboratory hours second term, Half Course.

Students not registered in the BSc Biology or Honors BSc Biology or Honors BSc Plant Sciences programs but who wish to take Honors level Plant Sciences courses must first obtain permission from the Chairman of the Department.

THREE YEAR

BSc BIOLOGY PROGRAM

The Department of Plant Sciences participates in the BSc Biology three year program. For complete details the student is referred to the Biology listing of this calendar.

Students who have successfully completed a First Year Program which included Biology 20 and Chemistry 20 may register in the second year of the BSc Biology program.

COURSES FOR BSC BIOLOGY THREE-YEAR PROGRAM

Although some of the courses in this program are open to students from other programs, if space and facilities become limiting in courses at the two hundred level or higher, preference will be given to three-year BSc Biology students.

BIOLOGY CORE COURSES

20. Biology of Organisms* (given cooperatively with other biological science departments). Growth, development, integration, organization, reproduction, and heredity of unicellular, colonial and multicellular organisms.
2 lectures, 3 laboratory hours, Full Course.

*Students who have done well in Biology 21 and wish to transfer to the three-year BSc program, may, with the permission of the Dean of the Faculty of Science, substitute Biology 21 for Biology 20.

200. Biology of Cells (given cooperatively with other biological science departments). The organization and the physiological, genetical and biochemical processes occurring in cells.
Prerequisites: Biology 20 and Chemistry 20
2 lectures, 3 laboratory hours, Full Course.

201. Biology of Populations (given cooperatively with other biological science departments). The distribution, genetics and evolution of populations and their growth, regulation and interactions with other populations and their environment.
Prerequisite: Biology 20 or Biology 21
A student may be permitted to take this course at the discretion of the Dean of the Faculty of Science on evidence of satisfactory standing in Biology.
2 lectures, 3 laboratory hours, Full Course.

Biology Options

202. Microbiology (given by the Department of Bacteriology and Immunology and Plant Sciences). A comparative study of the morphology, biology and relationships of algae, bacteria, fungi, protozoa and viruses.
Co-requisite or prerequisite: Biology 200
2 lectures, 3 laboratory hours, Full Course.

203a. Plant Ecology (given by the Department of Plant Sciences). An experimental approach to interrelations between an individual plant and various factors in its environment.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

204b. Plants and the Changing Environment of Ontario (given by the Department of Plant Sciences). A study of the natural flora of Ontario, with emphasis on Southwest Ontario. This course will deal with plants and their distribution patterns as affected by past and modern climates and

technological change. Some field work included.
Prerequisite: Biology 20
5 lecture, laboratory hours, Half Course.

205a. Growth and Development in Plants (given by the Department of Plant Sciences). An experimental approach to tissue differentiation and organogenesis in vascular plants. Growth patterns and their regulation in sporophytic and gametophytic phases. Morphogenesis. Patterns and symmetry.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

209. Genetics (given by the Department of Plant Sciences). Principles of heredity discussed at various levels of cellular organization, from the chromosome within the cell nucleus to populations of multicellular organisms.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Full Course.

215b. Biostatistics (given by the Department of Plant Sciences). A course in applied statistics directed to the beginner with an interest in a survey of the elementary concepts and methods of probability and statistics as applied to Biology.
Prerequisites: Mathematics 20, 24, 27 or Applied Mathematics 20 or equivalent standing in Mathematics.
2 lectures, 3 laboratory hours, Half Course.

216a. Survey of the Plant Kingdom (given by the Department of Plant Sciences). A comparative study of the main groups of plants. Emphasis will be on their characteristic features, including morphology, life cycles, physiology and general biology and on major adaptive-evolutionary strategies.
Prerequisite: Biology 20
5 lecture, laboratory hours, Half Course.

217b. Plants in the Service of Man (given by the Department of Plant Sciences). An introduction to economically important plants and their products, especially as sources of food, fuel, drugs and industrial raw materials. National and international programs relating to food and other plant resources.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Half Course.

304a. Evolution of Plants (given by the Department of Plant Sciences). This course will concentrate on aspects of evolution relatively little dealt with in Biology 201 - origin of life, geological background, biosystematics of plant populations, biochemical and physiological evolution, the logical problems of deducing evolutionary pathways.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours, Half Course.

305b. Plant Physiology (given by the Department of Plant Sciences). Principles of 'plant function', including nutrition, water relations, adaptation to environmental stress, mechanisms of dormancy and hormonal action, and the physiology of growth and reproduction.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, Full Course.

307. Applied Microbiology (given by the Departments of Bacteriology and Immunology, and Plant Sciences). A survey of selected topics in agricultural and industrial microbiology with reference to food microbiology, germentation reactions, single cell protein synthesis, the principles of plant disease control and applied immunological techniques.
Prerequisites or co-requisites: Biology 200 and Biology 202 or 306, and Biology 300 or 301
2 lectures, 3 laboratory, tutorial or demonstration hours, Full Course.

308. Advanced Genetics (given by the Departments of Plant Sciences and Zoology). Critical analyses of recent concepts of the gene and chromosomes.
Prerequisites: Biology 200, 201 and 209
2 lectures, 3 laboratory hours, Full Course.

313b. Bioenergetics of the Ecosystem (given by the Department of Plant Sciences). A study of the ecosystem with emphasis on primary production, the degrading influences of pollution and the necessity of conservation practice.
Prerequisite: Biology 203a
2 lectures, laboratory hours, 3 tutorial, Half Course.

315a. Advanced Plant Cell Biology (given by the Department of Plant Sciences). Plant cell ultrastructure in relation to basic metabolism of plant cells. Biochemical pathways which are unique in plants including detailed study of photosynthesis.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours, Half Course.

317. Micro-organisms and Plant Pathology (given by the Department of Plant Sciences). Morphology, classification, physiology and general biology of micro-organisms with emphasis on plant pathogens. Plant diseases parasitic and non-parasitic. Relationships between host and pathogen, epidemiology. Methods of control.
Prerequisite: Biology 202
2 lectures, 3 laboratory hours, Full Course.

HONORS PLANT SCIENCES (FOURTH YEAR)

Principal Courses

Any four of Plant Sciences 402, 403, 404, 405 and one of Genetics 433 or 467.

A total of 2 full courses from Plant Sciences 420a or 430a or any Biology course offered by the Plant Sciences Department at the 200-300 level.

One full course from Faculty of Science at the 200-400 level. Students should arrange their program in consultation with the fourth year Plant Sciences coordinator.

The principal courses are arranged into a coordinated series of lecture/laboratory blocks for the intensive investigation of the current status of the various areas of Plant Sciences. Visiting speakers and a year-end week-long symposium will focus attention on the various roles available to plant biologists.

Honors Courses

402. Advanced Microbiology. Selected Topics of current interest in microbiology.
10 lectures, laboratory, tutorial hours for 5 weeks, Half Course.

403. Advanced Ecology. Detailed consideration of sampling and experimental design, plant responses to environment under extreme condition, plant competition and evolution with emphasis on ecology.
10 lecture, laboratory, tutorial hours for 5 weeks, Half Course.

404. Modern Approaches in Systematics. Consideration at the advanced level of species delimitation, biochemical systematics and introduction to numerical taxonomy.
10 lecture, laboratory hours for 5 weeks, Half Course.

405. Advanced Growth and Development. Current topics in plant physiology and biochemistry.
10 lecture, laboratory, tutorial hours for 5 weeks, Half Course.

420a. Field Course in Experimental Biology. This course will consist of a field project with subsequent laboratory. The laboratory work may include further sampling, data analysis and report preparation. Students should be prepared to meet part of their travelling expenses.
3 laboratory hours for 1 term, Field Trip, Half Course.

430a. Independent Study in Experimental Biology. This course will enable a student to pursue any topic of his own interest in the Plant Sciences. It could consist of a library project or research project.
5 hours for 1 term, Half Course.

450a. Selected Topics in Biology. Available by prior arrangement with the Plant Sciences Program co-ordinator.
5 lecture, laboratory/discussion hours, Half Course.

460b. Selected Topics in Biology. Available by prior arrangement with Plant Sciences Program co-ordinator.
5 lecture, laboratory/discussion hours, Half Course.

462b. Radiobiology and Molecular Biophysics (given by the Departments of Biophysics and Plant Sciences) . Nature and effects of electromagnetic radiations and biomolecular structure on living cells. Applied radiobiology and radioecology.
2 lectures, 1 laboratory hours, one term only, Half Course.

DEPARTMENT OF ZOOLOGY

Department Office: BG 344
Telephone: 679-3155

Chairman of Department: Locke, M., MA, PhD Cantab

PROFESSOR EMERITUS: Battle. PROFESSORS: Bourns, Judd, Keenleyside, Locke, Scott. ASSOCIATE PROFESSORS: George, MacInnes, McMillan, Misra, Ogilvie, Purko, Steele. ASSISTANT PROFESSORS: Atkinson, Eggleston, Holsworth, Kidder, Owen, Planck, Roth, Shivers, Tam, Wiebe. LECTURERS: Bignell, Caveney, Millar, Mullins. INSTRUCTORS: Ankney, Day, Mobbs, Moulton, Scott. HONORARY PROFESSORS: Stinson. HONORARY LECTURERS: Bond, Brown, Chefurka, Colhoun, Harris, McLeod, Nagai, Vardanis.

The Zoology Department teaches and does research upon the Biology of Animals. Members of the Department have a wide array of interests from parasitic flukes to mammals and at levels of organization from organelles to animal behaviour and population dynamics. The Department has special strengths in Population Biology and Ecology, Ethology, Reproductive Biology and Endocrinology, Developmental Biology and the Physiology of Adaptation, Comparative Physiology - particularly Insect Physiology and Neurobiology, and Cell Biology especially experimental studies on Ultrastructure. A summer field station equipped for ecological studies is maintained near Eskimo Point, N.W.T. The facilities of the Huntsman Marine Laboratory in St. Andrews, New Brunswick, are available to research workers in the department, and for summer field courses.

The Zoology Department participates in the Three Year Biology BSc program. The courses offered cover the broad spectrum of modern biology appropriate both for a liberal education and for many present day careers. In the second and third year the emphasis is upon biology as an essential cultural background as well as a preparation for the Honors year. The courses available in the fourth year of the Honors program allow a choice of topics more closely related to a future career.

Students should consult with the Department's undergraduate curriculum advisors, Drs. D.M. Scott, T.K.R. Bourns, and J.A. George when choosing their second year courses. Fourth year students, and potential Honors students from the second or third years who have a special interest in Zoology, may ask in the Department Office for a career advisor to help them personally in their selection of courses appropriate for particular careers.

PROGRAMS

General Courses

An understanding of the principles of Biology has become increasingly important in everyday life. To meet this need the Department of Zoology offers sections A and C of Biology 21 which are intended as general introductions to Biology for the non-Biologist. Each section has its own emphasis. Students should consult the course outlines available in the Department Office to see which they prefer. Biology 21 is not intended for students going on in Biology, although they may do so with the Dean's permission and an outstanding record.

21a. Biology. An introduction to molecular and cellular biology, energetics and physiology, heredity and evolution, animal behavioor, ecology and population biology. Emphasis is on facts and principles of particular relevance to mankind.
2 lectures, 3 laboratory or tutorial hours, Full course.

21c. Biology. The fundamental principles of biology, with stress on cells, individuals and populations, the mode of inheritance and the applications of biology to social and economic problems.
2 lectures, 3 laboratory or demonstration hours, Full course.

3 Year BSc Program

All courses other than Biology 21 (and numbered below 400) lead to the three year BSc in Biology. The undergraduate teaching builds upon the three core courses devoted to the Biology of Organisms (20), the Biology of Cells (200) and the Biology of Populations (201). These courses are a preparation for the series of 32 half-year courses given in the second, third and fourth years. The choice of half-courses will vary with your career objective -- High School Teaching, Medicine, Dentistry, Graduate Studies in Ecology, Wildlife, Physiology, Medical Technology, Cell and Developmental Biology, or just a general cultural background in Biology. The variety of courses will enable a student to opt for a broadly based degree or one tailored to his special interests. Students should ask the Department Office for outlines of the courses recommended as preparation for various careers.

Biology Core Courses

20. Biology of Organisms* (given together with the Department of Plant Sciences). Growth, development, integration, organization, reproduction and heredity of unicellular, colonial and multicellular organisms.
2 lectures, 3 laboratory hours, Full course.

*Students who have done well in Biology 21 and wish to transfer to the 3 Year BSc program may, with the permission of the Dean of the Faculty of Science, substitute Biology 21 for Biology 20.

200. Biology of Cells. (given together with the Department of Plant Sciences). The organization and the physiological, genetical and biochemical processes occurring in cells.
Prerequisite: Biology 20 and Chemistry 20
2 lectures, 3 laboratory hours, Full course.

201. Biology of Populations. (given together with the Department of Plant Sciences). The distribution, genetics and evolution of populations and their growth, regulation and interactions with other populations and their environment.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours, Full course.

Biology Options

For a complete list of optional Biology courses please refer to Biology Program. The prerequisites are such that courses numbered 202 and above can be taken in second or third year, and 300 level courses would normally be taken in third year.

220a. Vertebrate Biology I (given by the Department of Zoology). The principles of design of vertebrates. Emphasis will be placed on structural adaptations to aquatic and terrestrial environments.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours for one term, Half course.

221b. Vertebrate Biology II (given by the Department of Zoology). The physiological basis for environmental adaptation in selected vertebrate types.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours for one term, Half course.

224a. Invertebrate Biology (given by the Department of Zoology). An introduction to the invertebrates. A survey of the invertebrate phyla, their radiation and evolutionary relationships.
Prerequisite: Biology 20
2 lectures, 3 laboratory hours for one term, Half course.

225b. Arthropod Biology (given by the Department of Zoology). The characteristic structure, function and adaptations of the arthropods. The mechanisms of support and movement. Economic and medical importance.
Prerequisite: Biology 224a
2 lectures, 3 laboratory hours for one term, Half course.

308. Advanced Genetics (given by the Departments of Plant Sciences and Zoology). Critical analysis of recent concepts of the gene and chromosomes.
Prerequisites: Biology 200, 201 and 209
2 lectures, 3 laboratory hours, Full course.

322a. Vertebrate Histology (given by the Department of Zoology). An introduction to comparative aspects of the microscopic structure and development of tissues and organs in the various vertebrate classes.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

*(Note - a student cannot normally obtain credit for both Biology 309 and Biology 322a)..

323b. Vertebrate Physiology (given by the Department of Zoology). The principles of homeostasis with emphasis placed on functional relationships in diverse vertebrate types.
Prerequisite: Biology 221b
2 lectures, 3 laboratory hours for one term, Half course.

329b. Comparative Physiology of Growth and Nutrition in Animals (given by the Department of Zoology). Analysis of growth processes. Principles of nutrition.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

332a. Parasitology (given by the Department of Zoology). Parasitism as a way of life. Structures, life histories and host-parasite relationships of some representative animal parasites.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

335b. Physiological Ecology of Animals (given by the Department of Zoology). Mechanisms of adaptation to different environments. Environmental control of physiological processes. Rhythmic phenomena.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term, Half course.

336a. Animal Behaviour (given by the Department of Zoology). Introduction to animal behaviour with emphasis on social organization and the adaptive nature of behaviour.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term, Half course.

338b. Animal Development (given by the Department of Zoology). Principles of development and cell specialization. The embryology of selected vertebrates and invertebrates.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

342a. Cell Biology of Animals (given by the Department of Zoology). Molecules to biological structures. Ultrastructure and life history of cells and organelles.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term, Half course.

344a. Biometry (given by the Department of Zoology). Methods of measurement and sampling and the application of statistical methods to biological data.
Prerequisite: Biology 200 or 201; a Mathematics course at the 20 level
2 lectures, 3 laboratory hours for one term, Half course.

Fourth Year Honors BSc in Zoology

Ten 300 or 400 level Zoology half-courses should be taken in the fourth year for graduation with Honors. One or more courses offered by other departments may be substituted for Zoology courses with the approval of the department's undergraduate advisors. Biology 344a, Biometry, is the only required course and should usually be taken in the third year.

The Honors year continues the objectives of the three year degree - a broadly based education in Biology or a deeper training for a particular career. It is very important for potential Zoology Honors students to get the help of the department's advisors in choosing appropriate courses during their second and third years.

Students planning to finish their Honors Zoology program under the course and program structure existing before inception of the 3 year BSc in Biology, must confer with a department advisor before registering in 4th year.

Students who plan to continue into Graduate Studies are advised to select courses which will satisfy the foreign language credit required by many graduate schools.

Honors Courses

422b. Comparative Histology. Comparative aspects of the structure and development of organ systems at the microscopic level.
Prerequisite: Biology 322a
2 lectures, 3 laboratory hours for one term. Half course.

424a. Insect Taxonomy. The principles and historical development of insect taxonomy and the classification of specimens by means of keys and monographs.
Prerequisite: Biology 255b
3 laboratory hours for one term. Half course.

426a. Insect Physiology. The principles of insect physiology. Insects as experimental animals.
Prerequisite: Biology 200 and 225b
2 lectures, 3 laboratory hours for one term. Half course.

427a. Comparative Neurophysiology. Principles of action of excitable tissue and neural transmission (jointly with the Department of Physiology); evolution of complexity in nervous systems, the basis of animal motor control, the variety of sensory systems of animals, primitive central nervous systems.
Prerequisite: Biology 200
2 lectures, 3 laboratory hours for one term. Half course.

428a. Comparative Endocrinology. Hormonal integration in vertebrates and invertebrates.
Prerequisite: Biology 200; 322a or concurrent registration in 322a desirable
2 lectures, 3 laboratory hours for one term. Half course.

432b. Immunity to Parasites (given jointly with the Department of Bacteriology and Immunology). Natural and acquired resistance to animal parasites, medical and veterinary implications; serological and immunological methods; in vitro culture.
Prerequisite: Biology 332a
2 lectures, 3 laboratory hours for one term. Half course.

434a. Advanced Population Biology. Diversity and stability, developed from the dynamics of single and multiple species systems. Life history strategies. Colonization. r and K selection.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term. Half course.

436b. Advanced Behaviour. Animal social systems. Communication. Bioperiodism. Cybernetic systems.
Prerequisite: Biology 336a
2 lectures, 3 laboratory hours for one term. Half course.

438a. Advanced Developmental Biology. Mechanisms and role of cell communication and interaction during development.
Prerequisite: Biology 338a
2 lectures, 3 laboratory hours for one term. Half course.
May not be offered in 1973-74.

440a. Developmental Genetics. Molecular biology of development. Regulation of genomic function. Replication and translation of information during development. Stability of clones. Somatic cell genetics.
Prerequisites: Biology 200 and 201
2 lectures, 3 laboratory hours for one term. Half course.

441b. Evolution. Concepts of species. Polymorphism, selection and

gene flow. Theories of speciation. Fitness-set analysis.
Prerequisite: Biology 201
2 lectures, 3 laboratory hours for one term, Half course.
Not offered in 1973-74.

442b. Advanced Cell Biology. Cell function. Cell and tissue specialization. Transport. Transporting epithelia. Contractility and motility.
Prerequisite: Biology 342a
2 lectures, 3 laboratory hours for one term, Half courses.
May not be offered in 1973-74.

444b. Advanced Biometry. Advanced statistical methods.
Prerequisite: Biology 344a
2 lectures, 3 laboratory hours for one term, Half course.

450a. Special Topics in Experimental Biology I. A practical course within a particular field under the direction of a faculty member.
Prerequisite: Average of 70% in the preceding year Permission of Instructor required.
See research notice boards for areas of specialization of the faculty and fields available..
8 laboratory and tutorial hours for one term, Half course.

451b. Special Topics in Experimental Biology II. As for Zoology 450a.
Prerequisite: successful completion of Zoology 450a
8 laboratory and tutorial hours for one term, Half course.

452a. Field Course in Experimental Biology. A study of living organisms in the field. Fieldwork and laboratory studies. Students should be prepared to meet part of the travel expenses.
Prerequisite: Permission of instructor
Field trip plus, 3 lab hours for one term, Half course.

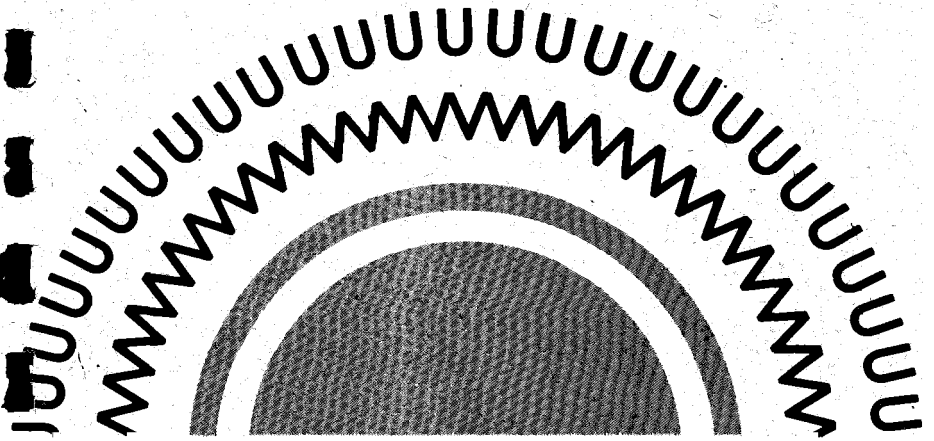
453b. Political Biology. The biological consequences of human activities for the biotic world and particularly man and his institutions. Direct physical and chemical effects upon metabolism, development, adaptation, genes, and population structure. Indirect effects through climatic change, population density, social conditions and changed patterns of survival. Predictions and mechanisms for influencing the future.
Prerequisites: Biology 200 and 201
4th year only
2 lectures, 3 tutorial hours, Half course.

454a. Advanced Laboratory Techniques. A practical course in advanced techniques, including tissue culture, histology, autoradiography, stereology, photomicrography and the preparation of illustrations.
Prerequisite: Biology 200 or permission of instructor.
1 lecture, 6 laboratory hours for one term, Half course.

455b. Advanced Microscopy. Phase, ultraviolet, interference, polarising, fluorescence, and Nomarski microscopy. Electron microscopy, interpretation and presentation of data.
Prerequisite: Zoology 454a or permission of instructor
1 lecture, 6 laboratory hours for one term, Half course.

470. Evolution. Concepts of species, intra and interspecific variations including polymorphism; selection and gene flow; significance of central changes.
2 lectures, 3 laboratory or tutorial hours, Full course.

Faculty of Social Science



Dean:
Grant L. Reuber, BA UWO; AM, PhD Harvard, FRSC, Professor of Economics
Office: Room 9438, Social Science Centre
Telephone: 3711

Faculty of

Associate Dean:
David A. Chambers, BA British Columbia; MSc, PhD McGill, Associate Professor of Psychology
Office: Room 9438, Social Science Centre
Telephone: 3712

Assistant Dean:
Thomas N. Guinsburg, BA, MA, PhD Columbia, Assistant Professor of History
Office: Room 9438, Social Science Centre
Telephone: 6365

Director, Social Science Computing Laboratory:
Edward H. Hanis, AB Cornell, PhD Indiana
Office: Room 1022, Social Science Centre
Telephone: 6378

ACADEMIC COUNSELLING

Office: Room 2040, Social Science Centre
Telephone: 3097

The Faculty of Social Science maintains a full-time counselling service for all students registered, or intending to register, in the Faculty. Students are urged to use this service as well as to consult with individual Departments in the Faculty. Inquiries should be directed to the Office of the Dean or to the Chairman of the Department concerned.

PROGRAMS OF STUDY

The Faculty of Social Science offers the following programs leading to a Bachelor of Arts (BA) degree:

Three-year Programs with an area of concentration in the following fields: Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology.

Three-year Program in Secretarial Science

Four-year Honors Programs in: Anthropology; Economics, Economics with History options, Economics with Mathematics options; Geography; History, History and Economics, History and German, History and Philosophy, History and Russian; Journalism; Political Science, Political Science and French; Psychology, Psychology and Philosophy, Psychology and Physiology; Sociology.

One-year post-BA Program leading to a Diploma in Journalism.

Availability of Options

The student's choice of course options within any academic program is subject to the constraint of the lecture timetables.

Accuracy of Registration

It is the responsibility of the student to ensure the completeness and accuracy of his registration.

FIRST YEAR

The first year is intended to provide one year of general education in the social sciences, leaving it open to the student to select those areas of social science on which he wishes to focus in subsequent years after he has taken University courses in subjects not normally available in the secondary schools. On the successful completion of the first year, the student is eligible to register in the second year of the Three-year Program or the second year of an Honors Program, provided that course prerequisites are fulfilled.

The First-year Program in the social sciences is intended to lead primarily to programs offered by the Departments within the Faculty of Social Science. It does not, however, preclude admission to programs in other Faculties (Arts, Science), provided that course prerequisites are fulfilled. Similarly, students who have successfully completed a First-year Program in Arts or in Science are eligible to enrol in social science programs in subsequent years.

Election of First Year Courses. See the section of this calendar on academic regulations and the General Information Booklet.

HONORS PROGRAMS - ADMISSION TO SECOND AND SUBSEQUENT YEARS

A student will be automatically accepted if he has an average of at least 70 per cent with no grade of less than 60 per cent in the courses listed as principal courses by the Department(s) of the subject(s) in which he is specializing. He must also have a passing grade in each of the courses listed as subsidiary courses by the Department(s) concerned.

MATHEMATICS, STATISTICS, COMPUTER SCIENCE

In most branches of social science it is important for students to take courses in Mathematics, Statistics and Computer Science. Such courses should be taken as soon as possible upon entering the University. The following courses, offered in the Faculty of Science, have been specially designed to meet the needs of social science students. Some of these courses require very little background training in Mathematics; others require Grade XIII Mathematics.

22. Applied Mathematics. Introductory Mathematics for Social Science. A problem-centred course based upon basic algebra, linear algebra and calculus. The course is designed for students registered in Social Science. May not be taken for credit by students who are eligible for Mathematics 21.
3 lectures, 1 tutorial hour.

233. Applied Mathematics. Statistics for Honors Social Science. Standard distributions, statistical inference, regression analysis, experimental design and other topics. This course is designed for Honors students in Social Science and cannot be taken for credit by students in Mathematics programs.
Prerequisite: Applied Mathematics 22 or Mathematics 20, or 21, or consent of the instructor.
3 hours.

21. Mathematics. A problem-centred course with major emphasis on calculus, linear algebra, and probability. This course is primarily designed for students registered in the Faculty of Social Science.
Prerequisite: Grade 13 Mathematics A, or Grade 13 "Calculus" plus one of Grade 13 "Algebra" or Grade 13 "Relations and Functions".
3 lectures, 1 tutorial hour.

37a. Mathematics. Statistical Methods. An introduction to frequency distributions, measures of central tendency, correlation, probability and hypothesis testing. Intended primarily for students in Social Science and cannot be taken for credit by students in Mathematics programs.
3 hours for one term, (half-course).

38b. Mathematics. Statistics. Distributions, hypothesis testing, multiple regression, prediction and experimental design. Intended primarily for students in Social Science and cannot be taken for credit by students in Mathematics programs.
Prerequisite: Mathematics 37a.
3 hours for one term, (half course).

254. Mathematics. Advanced Mathematics for Honors Social Science. Advanced calculus in linear algebra. Topics include maximizing functions, differential and difference equations, and the algebra of n-dimensional vector spaces up to eigenvectors and quadratic forms. Cannot be taken for credit by students in Mathematics programs.
Prerequisite: Mathematics 21 or Applied Mathematics, or permission of the instructor.
3 hours.

21. Computer Science. The course provides an over-all view of the field of Computer Science. It stresses the development and design of computers, the art of programming and use of algorithms for solving problems in science, social science and humanities.

Note: Students contemplating the mathematical or physical sciences as their major field of study are strongly advised to take Computer Science 20.
Prerequisite: Grade 13 Mathematics or equivalent.
3 lectures, a laboratory hour.

LANGUAGE SKILLS

English is the language of instruction in most courses. Students whose command of English is inadequate are asked to seek advice from the Office of the Dean about remedial instruction in English.

Because of the bilingual nature of Canadian society as well as for cultural and academic reasons, it is important that social science students have some command of French. Which courses are most appropriate to achieve this objective will depend upon the student's background and should be worked out in consultation with the Department of French. For most students a sequence of courses including French 20 and French 31 or French 271, as listed in the Department's offerings, will enable them to speak and write in French.

Most graduate programs at this and other Universities require a degree of competence in at least one foreign language, and some require proficiency in two. Students who may wish eventually to enter a graduate program should prepare themselves to meet such language requirements in their undergraduate work.

HISTORY OF SCIENCE

A number of courses, which may be taken as options, are offered by the Department of History of Medicine and Science, Faculty of Medicine, in co-operation with the Faculties of Science and Social Science. The following courses may be of particular interest to Social Science students: History of Evolutionary Thought (311b); Science and Medicine in Canada (314a); Science, Scientists and Society (316b); Development of the Scientist's Self-Image (318b). *See Faculty of Medicine course listings* for detailed information.

DEPARTMENT OF ANTHROPOLOGY

Chairman and Associate Professor:
D. L. Guemple, BA, MA, PhD Chicago
Telephone: 3476
Departmental Office: Room 3322, Social Science Centre

ASSOCIATE PROFESSOR: Guemple. ASSISTANT PROFESSOR: Spence. LECTURERS: Freedman, Piggott, Tobias. INSTRUCTOR: Miller (Part-time).

GENERAL PROGRAM

Students who wish to elect an area of concentration in Anthropology will be required to complete Anthropology 20 and attain a grade of no less than 65 per cent in that course. They will also be required to complete the equivalent of at least four full Anthropology honors courses numbered 200 or 300, excluding 250 and 350.

GENERAL COURSES

20. Introduction to Anthropology. A survey of the basic concepts and methods of Anthropology with topical consideration of questions such as the development of man's capacity for culture, the study of culture history, the comparative study of social systems, languages, religions, and other institutions. The ethnography of various societies is discussed.
2 hours lecture, 1 hour discussion.

HONORS PROGRAM

Requirements for Admission: First year general program (Arts, Social Sciences, or Sciences) with Anthropology 20 and four other courses as principal courses. Continuance in the honors Anthropology program is in accordance with University regulations. Students who fail to meet these requirements will be allowed to continue with Anthropology as an area of concentration in the general program. Not all of the courses shown may be offered in 1973-74. Students should obtain a *copy of "Course Offerings in Anthropology for 1973-74" from the Departmental* Office before selecting their courses.

SECOND YEAR

Principal Courses

Anthropology 200, 250 and one other 200 level course or equivalent

Subsidiary Courses

Three approved options

THIRD YEAR

Principal Courses

Anthropology 300, 350 and one other 300 level full course or equivalent

Subsidiary Courses

Three approved options

FOURTH YEAR

Principal Courses

Anthropology 400, 410a, 411b, 450

Subsidiary Courses

Two approved options

HONORS COURSES

200. Traditional Societies. Intensive study of a single society or community with emphasis on the holistic character of their social and cultural life.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

210a. Native Cultures. Intensive study of a single local or regional culture with emphasis on development of the cultural system.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

220b. Anthropological Profiles. Intensive study of the contributions of a single individual or group of anthropological scholars to the discipline. The course will consist of reading and evaluating the entire works of some individual or "school", together with the comments of their principal critics.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

230a. Prehistoric Societies. A detailed archeological study of the development of prehistoric societies. Topics considered will include evolutionary process, ecological adaptations, contacts and interrelationships among various societies, and the social organization of prehistoric peoples.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

235b. Language and Culture History. Analysis of the historical growth and development of language families and their relation to patterns of migration. Emphasis will be placed on one cultural or linguistic area.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

241. Anthropological Linguistics. Systematic study of the basic properties of language in the light of modern linguistic theory with emphasis on the social dimensions of language use.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

250. Workshop in Anthropology. A problem oriented course focusing on a subject that is of current interest to staff members and students. This course is required of honors Anthropology students and open to others with consent of the Department Chairman.
3 hours.

300. Topics in Social Anthropology. A discussion of the models used by social anthropologists to analyze traditional social systems. Some attention may be given to the application of these models to complex societies.
Prerequisite: Anthropology 200 or consent of Instructor.
4 hours.

310. Topics in Archeology. An examination of the techniques used to obtain and analyze information in archeology, together with some of the major theoretical contributions to that field. Topics include the role of ecology in shaping prehistoric societies and the effects of their social compositions.
Prerequisite: Anthropology 210a or 220b or consent of Instructor.
4 hours.

320a. Topics in Language and Culture. Culture is investigated using linguistic methods and techniques. Topics include: the analysis of lexical sets, cognitive categories, language as a symbolic communicative process.
Prerequisite: Anthropology 241 or consent of Instructor.
4 hours.

321b. Topics in Language and Society. An investigation of the interrelationship between language and social structure with particular attention to linguistic differentiation on this basis and the direction of language change. The speech of minority groups will be investigated.
Prerequisite: Anthropology 241 or consent of Instructor.
4 hours.

330a. Native Peoples of Canada. A survey of the traditional lifeways of the autochthonous peoples of Canada including the development of major cultural differences between these and their social and cultural adaptations.
Prerequisite: Anthropology 20 or consent of Instructor.
4 hours.

331b. Contemporary Natives of Canada. A survey of the conditions under which native peoples live in modern Canada, including consideration of their intercultural contacts with whites, acculturation to greater Canadian society, the development of a pan-Indian culture, and the current problems facing Indians in living in the present era. The course serves in part as a vehicle through which local native peoples can present their own interpretation of their traditional ways and air their views on contemporary Indian problems.
Prerequisite: Anthropology 330a or consent of Instructor.
4 hours.

350. Seminar in Anthropology. A research oriented course focusing on a topic formulated by individual students. This course is required of honors Anthropology students and others with the consent of the Department Chairman.
3 hours.

400. Anthropological Methods and Techniques. A critique on the use of anthropological methods and techniques for collecting and analyzing research data.
Prerequisite: Consent of Instructor.
4 hours.

410a. Structural Anthropology. The comprehensive study of the concepts of structure and process in Anthropology.
Prerequisite: Anthropology 300 or consent of Instructor.
4 hours.

411b. Anthropological Thought. Exploration of the application of general theoretical models to the synthesis of anthropological thought.
Prerequisite: Anthropology 410a or consent of Instructor.
4 hours.

420a. Readings in Anthropology.

421b. Supervised Research in Anthropology.

450. Colloquium in Anthropology. A joint faculty-student seminar.
3 hours.

DEPARTMENT OF ECONOMICS

Chairman and Associate Professor:
J. C. Leith, BA Toronto; MSc, PhD Wisconsin
Telephone: 3592
Departmental Office: Room 4071, Social Science Centre

PROFESSORES EMERITI: Harvey, Inman, Reilly. PROFESSORS: Bodkin, Brown, Burley, Courchene, Melvin, Reuber, Wonnacott. ASSOCIATE PROFESSORS: Berry, Saraydar. ASSISTANT PROFESSORS: Avio, Baumann, Bhatia, Blomqvist, Boyer, Burgess, Carter, Clark, Davies, Dick, Frankena, Fried, Fujii, Gately, Gaudet, Haessel, Howitt, Johnson, Jondrow, Ketchum, Kirkham, Kuch, May, McFetridge, Oaxaca, Palmer, Parai, Plourde, Rao, Scheffman, Smith, Toda, Vickery, Woodward. LECTURERS: Bosch-Domenech, Conklin, Markusen, Romer, Vermeeren.

GENERAL PROGRAM

All students who wish to make Economics their area of concentration will be required to take any four senior Economics courses. Students who may plan later to enroll for a two-year MA program are required to take Economics 30 and 33.

Students who have received credit for Economics 37 prior to 1971-72 may not receive credit for Economics 49. Students who have received credit for Economics 30 prior to 1970-71 may not receive credit for Economics 33. Honors courses are generally restricted to students in the Honors Economics program. However, with permission of instructors, general students in limited numbers will be allowed to enroll in Honors courses. Students will not be given credit for both Honors courses and Pass courses which are equivalent.

GENERAL COURSES

20. Introduction to Economics. National income, unemployment and inflation; distribution of income; balance of payments and the exchange rate; the competitive firm, profit maximization and monopoly; supply and demand with applications to the minimum wage, agricultural programs and neut control; the government's role in regulating business, stabilizing the economy and transferring income to the poor.
3 lectures, Full Course.

21. Introduction to Economics. A mathematical treatment of introductory economics. Topics covered are the same as those in Economics 20.
Prerequisite: Must have, or be taking concurrently, one of Mathematics 20, 21, 24, 27 or Applied Mathematics 20.
3 lectures, 1 optional tutorial hour, Full Course.

30. Intermediate Microeconomic Theory. A survey of microeconomic theory including theories of the firm, consumer behavior, market organization, distribution and welfare.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

31. International Trade and Finance. A discussion of the principles of international economics and their application to contemporary problems in the international economy.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

32. Soviet Economics. Theory and practices of socialist economies in comparison with capitalism Topics include the introduction to Marxian economics, theories of centralized planning, the institutions and the current reforms in the USSR and Eastern Europe, the development of the Chinese economy.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

33. Money and Income. A course in intermediate macroeconomic theory and policy. Topics will include national accounts, income determination, banking theory and practice, monetary theory, stabilization policies in closed and open economics.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

35. Introduction to Econometrics.. Introduction to statistics and econometrics including such topics as index numbers, time series analysis, survey sampling, probability, sampling, estimation theory, hypothesis testing, simple and multiple regression models.
Prerequisite: Economics 20 and a 20-level Mathematics course, or Economics 21, or permission of the instructor.
3 lectures, Full Course.

36. Labor Economics. A survey of labor economics and industrial relations. Topics include labor force participation, the demand for labor, unemployment, wage determination, poverty and the distribution of income, the history of the trade union movement, the economics of trade unions, labor law, and labor relations.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

37. Economic History of Canada. An analysis of the strategic factors determining growth and welfare in Canada's past from colonial times to the present. Topics include the staple trades, transportation, industrialization, regional growth and the emergence of a national market, and the public-private mix of institutional arrangements.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

38. Economic Development. A review of the principles of economic development and their application to contemporary problems.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

39. Regional Economics and Fiscal Federalism. An analysis of theoretical and policy issues relating to Canada's regions. Topics will include regional income disparities, manpower policies, incentives for industrial location, intergovernmental tax-sharing agreements, the theory of intergovernment grants.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

40. Seminar in Economic Policy. A discussion of policy issues of current interest.
Prerequisite: Economics 30 or 33.
3 seminars, Full Course.

41. Introduction to Mathematical Economics. An introduction to the basic tools of mathematical economics with examples and exercises in the form of relevant economic problems. (Honors credit)
Prerequisite: Economics 20 and a 20-level Mathematics course, or Economics 21.
3 lectures, 1 optional tutorial hour, Full Course.

43. Public Finance. A survey of the role of government, the economic effects of taxes and public expenditures, fiscal policy for stability and growth and intergovernmental relationships.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

45. Urban Economics. A policy-oriented analysis of the economic problems of cities. Topics include urbanization, location of economic activity in cities and suburbanization, housing and slums, transportation and congestion, pollution, urban poverty, crime, and fiscal problems.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

47. The International Economy in Historical Perspective. A study of the emergence of the international economy in the late nineteenth century, its contraction during the inter-war years, and the attempts at revival since 1945.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

48. Special Topics in Economics. For 1973-74, distribution of income, causes of income inequality and poverty, and measures to achieve a more equal distribution. Topics include: theories of income distribution, education, discrimination, class structure, property rights, theories of the state and the political economy of inequality, critiques of capitalism and socialism.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

49. Economic History of the United States. An historical analysis of the economic development of the United States since about 1790. Topics include labor and the economy, the role of government, transportation, the evolution of a national market, technological change, the structure of industry, savings and capital formation, agriculture, industrial concentration, and economic fluctuations.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

HONORS PROGRAMS

Requirements for Admission

First Year General Program (Arts, Social Science or Science) with a 20-level Economics, a 20-level Mathematics, and one other course as principal courses.

Students who receive a grade of 70 or higher in a 20-level Mathematics course will be encouraged to take Economics 41 in the second year. Alternatively, Mathematics 254 or an Honors Mathematics course may be taken.

In the special case of a student who has not taken a 20-level Mathematics course in his first year, the Department may grant conditional entry into the Second Year of the Honors Economics program provided that the 20-level Mathematics requirement is met in the second year.

Students already in the program, and who in 1973-74 are in their final year, will be required to take five courses in the manner prescribed, and will not be allowed to offer any course completed in their second or third year for credit in their fourth year.

Second Year

Principal Courses

Economics 230, 255 and one other Honors Economics course

Subsidiary Courses

Two options

Third Year

Principal Courses

Economics 340, 360

One other Honors Economics course

Subsidiary Courses

Two options

Fourth Year

Principal Courses

Economics 400

Two other Honors Economics courses

Subsidiary Courses

Two options

ECONOMICS WITH HISTORY OPTIONS

Requirements for Admission

First Year General Program (Arts, Social Science or Science) with a 20-level Economics course, a 20-level History course and one other as principal courses. It is recommended that a 20-level Mathematics course be taken.

Second Year

Principal Courses

Economics 230, 237 and either Economics 255 or another Honors Economics course

Two Honors History courses

Subsidiary Courses

One option

Third Year

Principal Courses

Economics 340

One of Economics 437, 447, 497 and one other Honors Economics course

Two Honors History courses

Fourth Year

Principal Courses

Economics 360, 400 and one of 437, 497, 447

One Honors History course

Subsidiary Courses

One option

ECONOMICS WITH MATHEMATICS OPTIONS

Requirements for Admission

First Year General Program (Arts, Social Science or Science) with a 20-level Economics course, and Mathematics 24, 27 or Applied Mathematics 20 as principal courses.

Second Year

Principal Courses

Economics 230, 255

Mathematics 250 and 256 or 278

Subsidiary Courses

Two options

Third Year

Principal Courses

Economics 340, 360

One other Honors Economics course

Mathematics 355, 363

Fourth Year

Principal Courses

Economics 400

Two Honors Economics courses

Mathematics 453

Subsidiary Courses

One option

HONORS COURSES

Honors courses are generally restricted to students in the Honors Economics program. However, with permission of instructors, general students in limited numbers will be allowed to enroll in Honors courses.

Students who have received credit for Economics 437 prior to 1971-72 may not receive credit for Economics 497. Mathematics 35 may not be credited as a subsidiary course in the Honors Economics program. Students will not be given credit for both Honors courses and Pass courses which are equivalent.

200. Introductory Seminar in Economic Policy. The analysis of contemporary problems and discussion of the relevance of economic principles and policies to deal with these problems. The topics of discussion depend upon current problems and interest of the students.
Prerequisite: A 20-level Economics
rse.
seminars, Full Course.

230. Economic Theory. An outline and survey of microeconomic and macroeconomic theory, taught at an intermediate level.
Prerequisite: A 20-level Economics course.
3 lectures, Full Course.

237. The Economic History of the Modern World. A study of the economic history of major nations in the recent past concentrating on Europe, North America, and the development of the emerging nations in more recent years. Topics include changing attitudes to international economic cooperation.
Prerequisite: A 20-level Economics course.
2 lectures, Full Course.

255. Introduction to Econometrics. Introduction to statistics and econometrics including such topics as probability, random variables, sampling, estimation theory, hypothesis testing, simple and multiple regression models, serial correlation, and estimation of systems of equations.
Prerequisite: A 20-level Economics course. Student must have or be taking concurrently one of Applied Mathematics 20, 22, Mathematics 20, 21, 24, 27, Computer Science 20 or 21.
3 lectures, Full Course.

300. Intermediate Seminar in Economic Policy. An introduction to techniques of economic research with emphasis on their application to policy issues.
Prerequisite: Economics 230.
2 seminars, Full Course.

336. Labor Economics. A study of the labor market, wage determination and the relationship among wages, employment and prices.
Prerequisite: Economics 230.
3 lectures, Full Course.

339. Regional-Urban Economics. Theoretical and policy issues relating to Canadian cities and regions. Urban topics include urban growth, location of economic activity in cities, housing, urban transportation, pollution. Regional topics include industrial location, regional income disparities, migration, fiscal federalism.
Prerequisite: Economics 230.
3 lectures, Full Course.

340. Intermediate Macroeconomic Theory. An analysis of general equilibrium models of national income and the price level in both a static and dynamic context. The aims and techniques of macroeconomic policy will be discussed with respect to employment, inflation and growth.
Prerequisite: Economics 230.
3 lectures, Full Course.

351. International Trade and Finance. Topics to be covered include the pure theory of international trade, the theory of balance of payments adjustment, stabilization policies for open economics, the economic consequences of various commercial policies, and the problem of international liquidity.
Prerequisite: Economics 230.
3 lectures, Full Course.

360. Resource Allocation and Economic Welfare. An intensive survey of microeconomic theory, including theories of the firm, consumption, market organization, distribution and welfare.
Prerequisite: Economics 230.
3 lectures, Full Course.

400. Senior Seminar in Economic Policy. An analysis of economic policy issues of current interest.
Prerequisite: Economics 340.
2 seminars, Full Course.

410. Mathematical Economics. A course designed to give the student the ability to use the basic tools of static mathematical economics.
Prerequisite: Economics 360 or permission of the instructor.
3 lectures, Full Course.

433. Advanced Monetary Theory and Policy. A detailed analysis of the foundations of monetary theory as well as a survey and analysis of recent advances in both monetary theory and policy.
Prerequisite: Economics 340.
2 lectures, Full Course.

434. Industrial Organization. An application of basic microeconomic theory to areas such as firm size and structure, price discrimination, resale price maintenance, advertising, innovation, foreign ownership, etc. Part of the course will be devoted to the objectives and performance of Canadian antitrust policy.
Prerequisite: Economics 230.
2 lectures, Full Course.

437. Economic History of Canada. An analysis of selected topics concerned with growth and welfare in the Canadian past. Topics include the role of theory and measurement in economic history, colonial economic growth, industrialization, the development of a national economy, and the public-private mix of institutional arrangements.
Prerequisite: Permission of the instructor.
2 seminars, Full Course.

447. The Economic History of Europe. A study of economic change in Europe since the eighteenth century, with special reference to the economic history of England, France and Germany. Topics include: the problems of transforming traditional societies and the creation of a sophisticated manufacturing sector; the economics of imperialism; and the growth of the international economy.
Prerequisite: Permission of the instructor.
2 lectures, Full Course.

450. History of Economic Thought. Survey of economic theories of earlier thinkers, with emphasis on the topics of value and distribution, money, aggregate income determination, growth and development, and scope and method. Course commences with ancient economic thought, surveys the medieval scholastics and then focuses on developments in the last three centuries.
Prerequisite: Economics 230 or permission of the instructor.
2 lectures, Full Course.

455. Econometrics. Development of statistical ideas and concepts as employed in testing economic theories. First term is devoted to the classical regression model and second term to developments and extensions. Topics covered include serial correlations and simultaneous equation systems.
Prerequisite: Economics 255 or permission of the instructor.
3 lectures, 1 tutorial hour, Full Course.

463. Public Finance. An economic analysis of the role of government in a market economy. The principles of resource allocation in the public sector, cost-benefit analysis, and topics in taxation will be examined in a Canadian setting.
Prerequisite: Economics 230.
3 lectures, Full Course.

470. Economic Development. A policy-oriented application of economic theory to problems of developing countries. Topics include peasant and commercial agriculture, industrialization and foreign trade, development planning, income distribution, unemployment, population, and edubshom
Prerequisite: Economics 230.
3 lectures, Full Course.

497. *Economic History of the United States.* The historical development of economic activity in the United States since 1790. Lectures and student discussion papers focus on the evolution of the national market during the nineteenth century and changes in the urban, industrial and agricultural sectors during the twentieth century.
Prerequisite: Permission of the instructor.
2 lectures, Full Course.

498. Current Topics in Economics. An analysis of current problems in the national and international economy.
Prerequisite: Permission of the instructor.
2 lectures, Full Course.

499. Special Topics in Economics. An analysis of selected problems in resource allocation.
Prerequisite: Permission of the instructor.
2 lectures, Full Course.

DEPARTMENT OF GEOGRAPHY

Chairman and Professor:
W. Warntz, BS, MA, PhD Pennsylvania.
Telephone: 3428
Departmental Office: Room 2433, Social Science Centre

PROFESSORS: Hossé, Nelson, Nicholson, Packer, Philbrick, Pleva, Warntz. ASSOCIATE PROFESSORS: Bjorklund, Day, Goodchild, Janelle, Langtvet, McDaniel, Sim, Taylor, Whebell, Wightman. ASSISTANT PROFESSORS: Butler, Code, King, Smith, Troughton, White. LECTURERS: Cecil, Fieguth, Luckman, Mutambirwa.

GENERAL PROGRAM

General BA students wishing to elect an area of concentration in Geography must consult with the Department.

20. Introduction to Geography. A systems introduction to Geography; investigation of the spatially interacting systems within the limits of human habitability.
2 lectures, 2 hours practical work.

30. Process of Landscape Development. Examination of the landscape of selected Canadian regions with particular emphasis on the relationship between climate and the geomorphic processes which are presently active. Some attention will be given to the role of man in altering the natural landscape.
Prerequisite: Geography 20 or permission.
2 lectures, 2 hours practical work.

***31. Cartology.** The study of maps, map makers and map making techniques. A review of the development of maps and mapping with special reference to techniques and inventions in mapping, survey and printing from
the primitive fold maps to computer maps.
(Proposed 1973-74).

32. The Geography of Culture. Theory, exemplification, and application of *models of perception, the processes* of culture, and the formation of regional cultures.
2 lectures, 2 hours practical work.

33. Introduction to Urban and Regional Development. A study of the spatial structure of cities and systems of cities; the processes of generating this structure; premises and principles of land use planning; planning problems.
2 lectures, 1 hour tutorial.

***35. Environment, Resources and Planning.** Study of human use of and impact on landscape, with emphasis on Canada; the interpretive model integrates ecology, strategies and institutional arrangements, perception and attitudes and technology.
Field trip and report each term, 2 hours lecture, 1 hour tutorial each term. (Proposed 1973-74).

37. Geography of Developing Countries. An examination of the environmental, human and economic factors that interact in developing countries. Systematic analysis of spatial aspects of urbanization, industrialization, agriculture, resources, population and related factors. Special emphasis is placed on the implications of change. Spatial concepts and models are used to study the development process, and reference is made to selected case studies.
Prerequisite: 1 course in Geography or permission.
2 lectures, 2 hours of seminar/workshop.

39. Elements of Economic Geography. A conceptual interpretation of the factors influencing the spatial distribution of economic activities.
2 lectures, 2 hours practical work.

40. Political Geography. The human geography basis of the world's territorial divisions: concepts, selected regional examples, and some applications.
Prerequisite: 1 course in Geography.
2 lectures, 1 hour tutorial.

45. Geography of North America. The geographic basis of human occupance in North America with particular attention to regional analysis and practical case studies. The natural wealth of North America and its conservation through wise development and use.
Prerequisite: Geography 20 or permission.
2 lectures, 2 hours practical work.

46. World Regional Geography. A comprehensive systematic survey in world regional geography.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

47. Geographical Aspects of North American History. An introduction to the main themes of the historical geography of North America to 1900, with special attention in the second term to the detailed attributes of these themes as applied to Southern Ontario.
Prerequisite: 2 courses in Geography (preferably Geography 20) or permission.

HONORS PROGRAM

Requirements for Admission.

First year General Program (Arts, Social Science or Science) with Geography 20 and any two others as principal courses. A student who wishes to enter Second Year and has not taken Geography 20 will cover a prescribed reading program during the summer before Second Year, pass a written and/or oral examination during the first week of lectures in September, complete the laboratory exercises for Geography 20 during the academic year and write the Geography 20 Spring examination.

SECOND YEAR

Principal Courses

Geography 200, 230, 232, 241

During the first two years the following courses must be completed: Economics 20 or 21, Geology 20 or 21, and one 20 level course in either Mathematics, Applied Mathematics or Computer Science.

Options must be selected in consultation with a Departmental Adviser.

Subsidiary Courses

Two options

THIRD YEAR

Principal Courses

Geography 339, 343

Two of: Geography 345, 346, a 400-level Geography course

Subsidiary Courses

Three options. One of these options may be any Geography course, including a 400-level course.

FOURTH YEAR

Principal Courses

Geography 443 (half course), 448 (half course), 450 (one and one-half courses)

One of: Geography 430, 431, 432, 433, 434, 435, 437, 439, 440, 447, 451

One of: Geography 451, 460, 461, 462, 463, 464, 465, 466, 467, 468

Subsidiary Courses

One option

HONOURS COURSES

200. Quantitative Methods in Geography. Methods of analyzing geographical data; an introduction to statistical methods. A 20 level mathematics, applied mathematics or computer science course is strongly recommended in the first year.
2 lectures, 2 hours practical work.

230. Physical Geography. Studies of the environmental factors, meteorology, climatology, geomorphology, hydrology, vegetation, and soils, their interrelationships, techniques of measurement and classification.
Prerequisite: Geography 20 or equivalent.
2 lectures, 2 hours practical work.

232. Cultural Geography. An introduction to the spatial behavior of different cultures, the cultural processes occurring among people, and the conceptual and theoretical framework for interpretation.
2 lectures, 2 hours practical work.

241. Cartographic Representation and Photo Interpretation. Scales and projections, map making, surveying on the ground and from the air, official and professional maps, cartographic specialties. Techniques in the use of air photos in geographic analysis.
Prerequisite: Geography 20 or permission.
1 hour lecture, 4 hours practical work.

339. Economic Geography. A systems analysis of the spatial organization of natural resources, agriculture, manufacturing, transportation and communication and tertiary activity.
Prerequisite: Geography 200 or permission.
Computer Science 20 or 37 is strongly recommended..
2 lectures, 2 hours practical work.

343. Field Methods and Practices. Departmental field camps and field trips as arranged; attendance at geographical meetings as required; special studies and practical problems in field techniques.
Sessions and hours by arrangement, (half course).

345. Geography of North America. A detailed analysis of the regional geography of North America, case studies and type areas; special attention to major geographical regions shared by Canada and the United States.

Prerequisite: Geography 20 or permission.
2 lectures, 2 hours practical work.

346. World Regional Geography. A systematic analysis of the major environments with emphasis on problems of resource use. Regional samples are analyzed in detail emphasizing culture and cultural progression. Practical work includes map analysis and seminars on selected problems.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

430. Meteorology and Climatology. The basic meteorological processes; readings in climate classification, regional climate, microclimatology, climatic change, and applied climatology.
Prerequisite: Geography 30, 230 or permission.
2 lectures, 2 hours practical work.

431. Geomorphology. Examination of recent periodical literature with particular emphasis on geomorphic process, current research techniques, and the physiographic development of selected Canadian regions.
Prerequisite: Geography 230 or permission.
2 lectures, 2 hours practical work. (Offered in alternating years with Geography 436).

432. Advanced Cultural Geography. Seminar lectures and discussions towards the development of quantitative theoretical world cultural geography.
Prerequisite: 3 courses in Geography, including Geography 232.
2 lectures, 2 hours practical work.

433. Urban Geography. Systems of cities; urban land use; social, cultural and political patterns within the city; urban problems.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

434. Agricultural Geography. Identification and study of the components of the agricultural system; emphasis on the level of the operational farm unit; models of agricultural location, land use and decision making; the development of projects investigating the local farm system and changes taking place in agricultural and related rural structure.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

435. Introduction to Resources Geography. Human use of and impact on mineral, soil, biotic, water and other resources. A critical review of selected theory and practice with emphasis on the effects of technology.
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

436. Soil Geography. An examination of soils as three-dimensional natural bodies. The factors affecting soil formation and areal differentiation. The processes giving rise to soil profile development. Techniques of soil classification, horizon nomenclature and soil survey, and their practical applications.
Prerequisite: Geography 230 or permission.
2 lectures, 2 hours practical work.

437. Recreation Geography. Examination of leisure resources, comparison of urban and rural recreational land use patterns; the areal and seasonal variations in intensity of use of land; case studies of the impact of recreation upon various areas.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

439. Advanced Economic Geography. The techniques of Regional Science, including the application of input-output analysis, linear programming, the gravity model and graph theory to the analysis of spatial systems.
Prerequisite: Geography 339 or permission.
2 lectures, 2 hours practical work.

440. Advanced Political Geography. Examination in depth of selected aspects of political geography with special reference to applications of current theories and models.
Prerequisite: 3 courses in Geography.
2 lectures, 2 hours practical work.

443. Field Methods and Practices. Departmental field camps and field trips as arranged; attendance at geographial meetings as required, special studies and practical problems in field techniques.
Mandatory for Fourth Year Honors.
Sessions and hours by arrangement, (half course).

447. Historical Geography. Studies and methodological approaches to historical geography with special reference to Ontario.
Prerequisite: 2 courses in Geography or permission.
2 lectures, 2 hours practical work.

448. Senior Seminar in Geography. An examination of the methodology of Geography. Of central concern are diverse interpretations of the field and various problems of explanation in Geography.

450. Senior Report. A report on a geographical problem including the results of field work, cartographic representation, and a study of the relevant literature.
Restricted to and mandatory for Fourth Year Honors..
Hours by arrangement, (One and one-half courses).

451. Tutorial in Geography. An advanced reading course in a regional or systematic field of interest to the student. Normally, it will be expected that the applicant will have taken, during his Third Year, the regular 400 level lecture course in his field of interest.
Prerequisite: Permission of the instructor in the field of interest. (No exam).

SENIOR STUDIES IN THE REGIONAL GEOGRAPHY OF SIGNIFICANT WORLD AREAS

460. Current Issues in Canadian Geography. Geographical problems in the regional and national development of the human and natural resources of
Canada
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

461. United States. A study of the geographic factors in the regional development of the United States; a systematic
analysis of the overall occupance and economy with ten detailed type studies of selected areas to
illustrate problem solving techniques.
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

462. Latin America. Regional study of economic and cultural geography; analysis of economic, cultural and political
development in the Latin American context.
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

463. Western Europe. A systematic analysis of the regional geography of Western Europe; type studies.
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

464. U.S.S.R. and Eastern Europe (Not given 1973-74).

465. Middle East (Southwest Asia and North Africa)
(Not given 1973-74).

466. Africa
(Not given 1973-74).

467. Australasia and the Pacific. An examination of the growth and structure of regional systems in Australia, New Zealand and associated areas of the Pacific. Selected sub-regional areas will be discussed in detail, and some comparisons with North America will be noted.
Prerequisite: 3 courses in Geography or permission.
2 lectures, 2 hours practical work.

468. South, East and Southern Asia (Particularly India, China, Japan)
(Not given 1973-74).

DEPARTMENT OF HISTORY

CHAIRMAN AND ASSOCIATE PROFESSOR:
C. A. Ruud, BA Willamette; AM Harvard; PhD Berkeley
Departmental Office: Room 4328, Social Science Centre
Telephone: 3645

PROFESSORS EMERITI: Dorland, Ferguson, Maine. PROFESSORS: Balderston, Kerr, Lander, Rowe, Talman, Zaslow. ASSOCIATE PROFESSORS: Armstrong, Dreyer, Emerson, Flaherty, Gwynne-Timothy, Hilborn, Hohner, Hyatt, McLaughlin, Metcalf, Neary, Ogelsby, Ruud, Steele, Stockdale, Zoltvany. ASSISTANT PROFESSORS: Emery, Guinsburg, Hahn, Metzger, Pospielovsky, Santosuosso, Simpson. LECTURERS: Avery, McCullough, Sea, Soranaka.

FIRST YEAR COURSES

Any course in the History 20 series fulfills the first-year principal course requirement in History leading to a General or Honors History program. Only one History course at the 20 level may be taken in the first year, or for credit towards a 15-course BA degree. No particular History 20-series course is a prerequisite for any senior History course. History 21, History 23, History 24, History 26, History 27, History 28, and History 29 are courses with limited enrollment.

20. Modern Europe, 1715 to the Present. Analysis of the evolutionary and revolutionary development of Modern Europe, with intensive treatment of the great landmarks in the formation of Western society and culture./Staff
3 hours.

21. Totalitarianism in the 20th Century. A study of totalitarian systems, 1917 to the present, with emphasis on Nazism and Soviet Communism. The course will examine the similarities and differences of Nazis, Communists and Italian Fascists both in theory and in practice and with respect to foreign policy as well as domestic affairs.
Lectures and discussion.
(Limited enrollment)./Hilborn.
3 hours.

23. An Introduction to the Study of American Hi story: Selected Problems. Studies in the critical use of historical sources, problems in research and writing, and readings on the nature of historical inquiry. Intensive study of selected topics, such as the clash at Lexington in 1775, the Nat Turner slave insurrection of 1831, and the Sacco-Vanzetti case of the 1920's.
(Limited enrollment)./Hohner.
3 hours.

24. Selected Problems in American History. An examination of specific historical events and the controversies which have developed around them in an effort to explore the principal themes of American history. Through extensive use of primary source materials, the course will also

focus on such problems as verification and the proper use of evidence. Procedural emphasis will be on discussions and written exercises.
(Limited enrollment)./Simpson.
3 hours.

25. Canada: A Survey, From the Beginning of the French Regime to the Present. Not open to students holding credit for History 31 or 231./Staff
3 hours.

26. The Two World Wars. An examination of the causes, course and consequences of the First and Second World Wars, stressing comparison of the two conflicts. Students will be asked to consider a variety of historical analyses of both wars and to study the process of interpretation as well as events.
(Limited enrollment)./Hyatt.
3 hours.

27. Ethnic Groups and the Problems of Racism in Canadian Development, 1600-1970. Role of major ethnic groups in the development of Canadian society. Basic themes will include relations between Amerindians and Europeans, between English and French, and among the established population (both English and French) and immigrants of diverse origins.
(Limited enrollment).
(Not offered in 1973-74).
3 hours.

28. Asian Revolutions. A comparative analyses of the revolutionary experiences of China, Japan, and Southeast Asia. Emphasis on the kinds of revolutions which these areas had and are having, the way different kinds of Western imperialism affected these revolutions and the process by which their traditional civilizations modernize.
(Limited enrollment)./McCullough.
3 hours.

29. The Duel for Empire: Anglo-French Colonial Rivalry, 1688-1904.
(Limited enrollment)./Gwynne-Timothy.
3 hours.

GENERAL COURSES

General BA students wishing to elect an area of concentration in History must earn credit in four senior history courses.

Students in programs other than History who wish to take a History option may take any History general course except those from which they are excluded by *prerequisites*.

The Department of History offers numerous combined courses intended equally for students in the 15-course (General) BA and Honors BA programs. To obtain credit towards a 15-course degree, students need not achieve a standard higher than that required in general courses. Since the courses have Honors status, however, general students who complete them with at least B standing will enjoy an advantage should they wish to transfer to the Honors program.

These combined courses are:

205-209. Military and Strategic Studies

231. Canada

236. Europe and England

320. China

321. Japan

322. Modern Southeast Asia

332. British Social History

338. Latin America

340. Modern Italy

356. Modern Germany

372. The Reformation

381a. International Relations since 1943

382b. International Relations since 1943

383b. Revolutionary War in International Politics

These courses are open to students in the 15-course (General) program without special permission. Any other Honors course may be taken with the Instructor's permission.

See descriptions of these Honors courses for details.

All courses numbered 50 and above will have limited enrollment.

After completion of second year, a General student who wishes to enter the third year as an Honors student in History may be granted Honors credit, on a recommendation of the Instructor approved by the Chairman of the Department and the Dean of Social Science, for any General History course above the 20 level in which the student has performed with distinction (normally, a good B grade).

30. Mediaeval Europe. From the 4th to the 15th Centuries./Lander
3 hours.

32. England to 1688. An introduction to English history from the Anglo-Saxons./Balderston
3 hours.

33. British Empires. A comparative study of the theory, practice, and legacy of British Imperialism in America, India, and Africa./Steele
3 hours.

34. The United States, Colonial Period to the Present. Emphasis first term upon the emergence of the American nation, the equalitarian impulse, national expansion and sectional conflict; second term, upon the great transformations of the modern era: the growth of industrialism, big government, a pluralistic society, and international predominance./Flaherty, Simpson, Hohner
3 hours.

35. England since 1688. English political, social, economic, and diplomatic development./Stockdale
3 hours.

37. A History of Russia From the Earliest Times through the Soviet Period. An introductory course which analyzes the principal political, social, economic, and cultural issues of the course of Russian and Soviet history. Emphasis on the modern period./Ruud
3 hours.

41. Post-Confederation Canada, 1867-1972. Emphasis on important topics such as the settlement of the west, French-English relations, and Canadian-American relations. (Not to be taken simultaneously with History 231)./Staff
3 hours.

50. Selected Topics in Canadian History. Canada 1759-1880. Urbanization, business growth and formation of elites./Armstrong
3 hours.

51. Canadian Party Politics, 1867-1957.
Prerequisite: History 25 or 31 or permission of the instructor.
(Not offered in 1973-74).
3 hours.

52. Canadian Social History. The Impact of Industrialization, 1870-1960./Avery
Prerequisite: History 25 or 31 or permission of the instructor.
3 hours.

53. French Canada in the Modern Period. A survey history of French

Canada from 1791 to the present with special emphasis on the changing character of nationalism from the period of Papineau to that of the Quiet Revolution./Igartua
3 hours.

60. Selected Topics in American History./Staff.
Prerequisite: History 34 or 234, or permission of the instructor.
(Not offered in 1973-74).
3 hours.

. The United States, 1841-1901: Prelude to Modern America.
Prerequisite: History 34 or 234, or permission of the instructor.
(Not offered in 1973-74).
3 hours.

62. The United States in the 20th Century. Emphasis on Progressivism, Woodrow Wilson, the 1920's and Black Protest./Hohner
Prerequisite: History 34 or 234, or permission of the instructor.
3 hours.

70. Selected Topics in European History
(Not offered in 1973-74).
3 hours.

71. Mediaeval Europe
(Not offered in 1973-74).
3 hours.

74. Modern France since 1815./Gwynne-Timothy.
3 hours.

76. English Thought and Society, 1870-1914
(Not offered in 1973-74).
3 hours.

90. Selected Topics in Latin American History. Students will do a major research project each term on a subject chosen in consultation with the instructor./Ogelsby
Prerequisite: History 38 or 338, or permission of the instructor.
3 hours.

HONORS PROGRAMS

HISTORY

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with a 20-level History Course and two other courses as principal courses.

TYPE A CERTIFICATE IN HISTORY

A student who wishes to qualify for a Type A certificate in History should consult the Registrar of Althouse College.

COURSE REQUIREMENTS FOR AN HONORS DEGREE IN HISTORY

Nine (9) Honors courses in History as principal courses and six (6) options, approved by the Department, must be taken over the second, third and fourth years. A normal program is three honors courses in history and two options each year. The nine Honors courses in History must include History 234, History 236, one course in Canadian history at the 200 level, and at least one course at the 400 level. Not more than two (2) additional 200 level courses may be taken, except as options if the Department approves. History 234, History 236 and the 200 level course in Canadian history must be completed before entering fourth year. One of the Honors courses (other than History 236) taken in third or fourth year must be in the field of British or European history. A student not in fourth year can take a 400 series course only with approval of the instructor.

NOTE: Classical Studies 275 (Greek and Roman History) can be offered as a principal course in the Honors History program.

In selecting options, students intending to pursue graduate studies should bear in mind that a language other than English is generally required for the MA and that

two languages other than English are generally required for the PhD. Not more than three courses in Military and Strategic Studies may be counted towards a degree. Students in Honors programs other than History but in the Faculty of Arts or the Faculty of Social Science, may take as an option any History course except those from which they are excluded by prerequisites or by limitation of enrollment. Students interested in the History of Science and Medicine should consult the offerings of that Department listed at the beginning of the Faculty of Social Science section of the calendar.

SECOND YEAR

Principal Courses

A 200-level Canadian History course, 234, 236

Subsidiary Courses

2 options

THIRD YEAR

Principal Courses

Three honors courses in History

Subsidiary Courses

2 options

FOURTH YEAR

Principal Courses

Three Honors courses in History

Subsidiary Courses

2 options

HISTORY AND ECONOMICS

The Department of History offers a combined honors program with the Department of Economics that enables students to emphasize either (i) mathematical and theoretical economics or (ii) economic history.

I. Requirements for Admission. First Year General Program (Arts, Science or Social Science) with a 20-level History course, Economics 20 and Mathematics 20 or 24 as principal courses. ***History Courses.*** Students are required to take History 236 and either 231 or 234 before the end of the third year. In addition, they are to take two honors courses in modern European history and two honors courses in modern North American history before the end of the fourth year. ***Economics Courses.*** Students are required to take Economics 230 and 255 in the second year; 340 and one other honors Economics course, to be selected in consultation with the Department, in the third year; and 360 plus one other honors Economics course in the fourth year. Optional Courses. One unrestricted option is permitted in each of the second, third and fourth years.

II. Requirements for Admission. First Year General Program (Arts, Science or Social Science) with a 20-level History course, Economics 20 and one other as principal courses. Either Mathematics 20 or 24 is strongly recommended. ***History Courses.*** Students are required to take History 236 and either 231 or 234 before the end of the third year. In addition, they are to take two honors courses in modern North American history and two courses in modern European history before the end of the fourth year. ***Economics Courses.*** Students are required to take Economics 230 and 237 in the second year; 255 (or 35 for those who have not taken a university mathematics course) in the third year; plus two of 437, 447, or 497 and one further honors Economics

course in the third and fourth year. Optional Courses. One unrestricted option is permitted in each of the second, third and fourth years.

HISTORY AND FRENCH

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with French 20, a history course at the 20 level, and one other course as principal courses.

Second Year. Three courses chosen from the History 200 and 300 series. (A student who chooses to proceed in honors history, with or without concentration in French, must complete History 234, History 236, and a course in Canadian History at the 200 level before entering fourth year.) French 271 and 290.

NOTE: On successful completion of second year, students may choose to continue in the normal Honors History program, or in Honors French language and literature (with the possibility of concentration in History), or in Honors History with concentration in French. For Honors French language and literature (with concentration in History), see the listings of the Department of French.

Honors History (with concentration in French) third and fourth years: students will be expected to meet all the requirements of the normal Honors History program, with the additional requirement that one of their third or fourth year courses must be chosen from History 336, 346, 361 (unless one of these courses has been completed in second year).

Two courses in French must be chosen from the following: French 232, 378, 381, 396, 398. One course is to be taken each year.

Two options, one to be taken each year.

HISTORY AND GERMAN

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with a 20-level History course and German 20 or 22 and one other course as principal courses. After the First Year the program consists of a total of at least fifteen courses, a minimum of seven honors German courses, seven honors History courses and one option.

NOTE: There is to be a total of seven German honors courses in the three senior years. Students are normally required to take the three language courses German 291, 391, and 481. Students fully proficient in spoken and written German are required to include as their only language course, German 481. A comprehensive examination in the spring, designated as German 495, is recommended in addition to the seven German honors courses for all students planning to do graduate work in German.

SECOND YEAR

Principal Courses

History 231, 236

German 290 and either 291, 391 or 481

Subsidiary Courses

One option (an additional German or History course may be selected).

THIRD YEAR

Principal Courses

Two of History 330, 335, 337, 346, 356

Three of German 333, 390, 391, 420, 425, 430, 444, 480, 481, 482

FOURTH YEAR

Three of History 330, 337, 356, 436, 460

Two of German 333, 390, 391, 420, 430, 444, 480, 481, 482

HISTORY AND PHILOSOPHY

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with three principal courses including Philosophy 20, if taken, and a History course at the 20 level. With the permission of the Philosophy Department, a student who has not taken Philosophy 20 may enter this program. After the first year, this program requires a minimum of six honors Philosophy courses, six honors History courses and three options. Some of these options may be additional Philosophy or History courses, and probably should be in the case of a student contemplating graduate work.

The Philosophy courses must include: Philosophy 254, taken in second year; at least one 400 level Philosophy course. The History courses must include at least four 300 or 400 level History courses. History 231 and 236 are recommended, but not required, in second year.

For the rest, the student makes his own selection of courses in consultation with the Departments, and with their approval. The normal load is five courses each year including two honors Philosophy and two honors History courses. Additional courses may be taken with the approval of the Departments. All honors Philosophy and History courses taken in any year will be considered principal courses. A student who wishes to qualify for a Type A certificate in History must choose additional honors or general History courses as options after consultation with the Registrar of Althouse College.

HISTORY AND RUSSIAN

See Russian and History, Russian Studies Section, Faculty of Arts.

*HISTORY AND THE HISTORY OF SCIENCE

Proposed to begin Sept., 1974

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with a 20-level History course and a 20-level course in a science or mathematics, and one other principal course. After the first year, students are required to take six honours courses in history, four honours courses in history of science, including History 414, one course in a science at level 200 or above, one additional course in any of the preceding areas, and three unrestricted options.

Second year: History 200 is recommended as one of the history of science courses.

Third and Fourth year: History of science courses should be chosen from History 310a, 312b, 314a, 316b, 318b, 470, and Science 210.

Fourth year: History 414 is required. Each student should define a special area of concentration within which he investigates some historical developments related to a science whose modern aspect he has also studied, and should select at least one of his history courses so that it is related in time and place to these developments. The area of concentration can be developed by a combination of choices of courses and of individual projects within the Departmental seminar. In case the student chooses to concentrate on the history of a social science or on a topic such as the development of scientific institutions, the science requirements can be met by courses in the social science appropriate to such a program.

OTHER COMBINED PROGRAMS

In addition to formal Combined Programs, other combinations may be arranged by Honors students in consultation with the departments concerned.

HONORS COURSES

Students in Honors programs other than History who wish to take a History option may take any History course except those from which they are excluded by prerequisites.

200. The History of Scientific Thought (Science 200). A survey of scientific thinking from Babylonian Science to the beginning of the 20th century./Plotkin
3 hours.

205-209. Military and Strategic Studies: Selected Topics. A lecture course also open to students in the general program. One course in the series will be offered each year. Consult the History Department for details of the current offering./Visiting Professor of Military History.
3 hours.

231. Canada. From the beginning of the French Regime to 1957. Not open to students who have taken History 25. Open to students in the general program./Staff
3 hours.

232. Canada: From the Beginning of the French Regime to Confederation
(Not offered in 1973-74).
3 hours.

233. Canada: From Confederation to the Present./Staff.
3 hours.

234. The United States, Colonial Period to the Present. Emphasis first term upon the emergence of the American nation, the equalitarian impulse, national expansion and sectional conflict; second term, upon the great transformations of the modern era: the growth of industrialism, big government, a pluralistic society, and international predominance./Flaherty, Simpson, Hohner.
3 hours.

236. Europe and England in the 16th and 17th Centuries. Open to students in the general program./Metzger, Sea.
3 hours.

237. History of Russia-USSR. From the early beginnings (pre-historical, Kievan, and later) through the Soviet period, but with emphasis on the pre-18th century period of Russian history. Pospielovsky
3 hours.

Classical Studies 275. Greek and Roman History. This course, taught by the Department of Classical Studies, can be taken for Honors History credit as a principal course. (Students may not count for credit Classical Studies 275 and either Classical Studies 40 or 41).

320. Survey of Chinese History. The political, economic, social and cultural history of China from prehistoric times to the present. Open to students in the general program. Not open to students with credit for History 39 or 339./McCullough
3 hours.

321. Survey of Japanese History. The political, economic, social and cultural history of Japan from prehistoric times to the present. Open to students in the general program. Not open to students with credit for History 39 or 339./Soranaka
3 hours.

322. The History of Modern Southeast Asia. The traditional political systems of the area, the course of western involvement and the development of colonial control, Southeast

Asian responses to this challenge, and the resulting processes of change that led to the emergence of the modern nations of Southeast Asia. Open to students in the general program./Radcliffe
3 hours.

330. The High Middle Ages. Charlemagne to the end of the 13th Century./Rowe
3 hours.

332. British Social History, 1660-1820. A study of changing social structures and the emergence of new elites. Open to students in the general program./Emerson
3 hours.

333. The First British Empire. Seminar on selected areas; Elizabethan expansion to the American Revolution./Steele
3 hours.

334. Foreign Policy of the United States since 1775. A study of the interaction between domestic forces—ideological, political, and economic—and external forces in the development of United States foreign policy./Guinsburg
Prerequisite: History 34 or 234, or permission of the instructor.
3 hours.

335. England, 1715-1914. A study of English history in the 18th and 19th centuries, stressing as a central theme the development of the modern state. The course will be based mainly on the writings of the following contemporary authors: Locke, Bolingbroke, Burke, Adam Smith, Paine, Bentham, James Mill, Engels, Robert Owen, Newman, and the Fabian Essayists./Staff
3 hours.

336. Absolutism and Society. France and Spain, ca. 1550-1700. A seminar on the social causes and consequences of absolutism in 16th and 17th century France and Spain./Metzger
3 hours.

337. Russia. The 18th, 19th and early 20th centuries, with emphasis on intellectual history. The course culminates with a detailed study of the events of 1917./Ruud
3 hours.

338. Latin America. An introduction to Latin America. The first term emphasizes the colonial foundations of Spanish and Portuguese civilization in the New World; the second term emphasizes the growth of the individual republics, personalist rule, federalism vs. centralism, revolution, and the 'static society'. Open to students in the General Program./Ogelsby
3 hours.

340. History of Modern Italy. Revolution, counter-revolution, and democracy, 1789-1946. Nationalism, liberalism, socialism, and fascism in Italy from the origins of the movement of unification to the collapse of the Fascist regime. The great personalities of the period, i.e., Mazzini, Garibaldi, Cavour, and Mussolini. Lectures and discussion. Open to students in the general program./Santosuosso
3 hours.

344. The United States, 1783-1877. The Development of the American Nation. The framing of the Constitution, the emergence of political parties, the growth of nationalism and sectionalism, the impact of equalitarianism, and the disintegration and restoration of the Union./Simpson
Prerequisite: History 34 or 234, or permission of the instructor.
3 hours.

346. France, 1715 to the Present. The social and political structure of eighteenth century France and its collapse, the revolutionary and Napoleonic impact, the conflict between order and liberty in the nineteenth century, social rifts and political instability, and the new balance of forces under the Fifth Republic after 1958. Lectures, seminars, and book discussions./McLaughlin
3 hours.

356. Modern Germany, 1815 to the Present. Open to students in the general program./Hahn
3 hours.

360. The Evolution of Canadian Political Parties 1867-1968. An examination of the factors which have influenced party politics in Canada (including economic nationalism, continentalism, imperialism, regionalism, industrialism and urbanism)./Neary
3 hours.

361. New France. A detailed study of th ırly history of French Canada: its pc ical, legal, and religious institutions, socio-economic organization, territorial expansion, and its evolution during the first half century of British rule.
(Not offered in 1973-74).
3 hours.

362. Selected Social Problems in Canadian History From the French Regime to the Present. An examination of ethnic minorities, religious institutions, class consciousness and other features of Canadian society./Emery
3 hours.

363. The Development of Western Canada.
Prerequisite: History 25 or 231 or permission of the instructor.
(Not offered in 1973-74).
3 hours.

372. The Reformation. An examination of the religious upheavals of the 16th century with emphasis on the interplay between ideas and their socio-economic context. Open to students in the general program./Sea
3 hours.

378a. European International Relations, 1871-1918./Hahn.
3 hours.

379b. European International Relations, 1919-1939./Hahn.
3 hours.

381a. International Relations since the Dissolution of the Comintern, 1943 to the Present. A survey. Lectures and discussions. Open to students in the general program./Hilborn
(Not offered in 1973-74).
3 hours.

382b. Selected Problems in International Relations, 1943 to the Present. Emphasis is on such topics as the Berlin crises, the strategic arms race, Rhodesia and other issues in southern Africa, Sino-Soviet relations and U.S. policies towards China and Cuba. Offered in alternate years. Open to students in the general program./Hilborn
(Not offered in 1973-74).
3 hours.

383b. Revolutionary War in International Politics, 1943 to the Present. Emphasis on Southeast Asia. Lectures and seminars. Offered in alternate years. Open to students in the general program./Hilborn
(Not offered in 1973-74).
3 hours.

400. Senior Thesis. With permission of the Department.

405-409. Seminar in Military and Strategic Studies: Selected Topics. One course in the series will be offered each year. Consult the History Department for details of the current offering./Visiting Professor of Military History.
3 hours.

410. Urban. A study of the city in History, its evolution, problems, and influence on civilization./Armstrong
3 hours.

420. The Intellectual History of China. An intensive study of the major intellectual currents in Chinese history from Confucius to Mao. Emphasis on understanding the role of philosophy in Chinese government and society, as well as on the ideas which have shaped China's civilization./McCullough
Prerequisite: History 39 or 339 or 320, or permission of the instructor.
3 hours.

421. Modern Japan. The development of Japan from a feudal society in the nineteenth century to its place as one of the world's leading industrial nations to-day. Emphasis will be on the analysis of economic, social and political change leading to and after the Meiji Restoration which altogether made this transformation possible. The impact of this change on the thought and everyday lives of the Japanese people will also be analyzed./Soranaka
Prerequisite: History 39 or 339 or 321, or permission of the instructor.
3 hours.

431. Canada since 1867. Selected topics and seminar discussions./Kerr
3 hours.

432. England, 1399-1642. A political, social and constitutional study of England from the 15th century to the mid-17th century./Lander
3 hours.

433. The Second British Empire and Commonwealth./Gwynne-Timothy.
3 hours.

434. The United States, 1841-1901. The Prelude to Modern America. Economic, social, and constitutional developments against the general background of the period.
Prerequisite: History 34 or 234, or permission of the instructor.
(Not offered in 1973-74).
3 hours.

435. Slavery in the Atlantic World, 1500-1860. Topics include origins of the British slave trade, the planter-slave societies of the New World, effects of the trade upon the peoples of west Africa, profits of the trade to the metropolitan powers, abolition, aftermath./Metcalf
3 hours.

436. Selected Topics in European Intellectual History 1660-1900.
Prerequisite: History 236 or permission of the instructor.
(Not offered in 1973-74).
3 hours.

437. The Soviet Union. Social, political, intellectual, cultural, and economic history of the USSR, beginning with a detailed study of the Russian revolutions of the 20th century./Pospielovsky
Prerequisite: History 237 or the permission of the instructor.
3 hours.

442. The Opening of the Canadian North./Zaslow.
3 hours.

444. The United States in the Twentieth Century. Emphasis on Progressivism, Woodrow Wilson, the 1920's and Black Protest./Hohner
Prerequisite: History 34 or 234, or permission of the instructor.
3 hours.

448. Selected Topics in Latin American History./Ogelsby.
Prerequisite: History 338 or permission of the instructor.
3 hours.

451. Canada. Urbanization and the Formation of Elites, 1759-1914. Concentration on the earlier period and the eastern half of Canada. The course will explain how and why cities grew, their economic and social interconnections and the composition and formation of urban elites./Armstrong
(Not offered in 1973-74)
3 hours.

452. English Constitutional History. A study of the development of the English constitution from the Anglo-Saxon monarchy to 1688./Balderston
3 hours.

454. Origins of the United States. American society in the seventeenth and eighteenth centuries, including the period of settlement and the American Revolution. Lectures and discussions./Flaherty
(Not offered in 1973-74)
3 hours.

455. United States Legal History. The major developments in the history of law from the first settlements to the mid-twentieth century. Open to students in the Faculty of Law./Flaherty
3 hours.

457. Warfare. With emphasis on the relations between warfare and modern political, economic, and social conditions./Hyatt
3 hours.

460. The Age of the Renaissance. Thematic approach to the intellectual, cultural, social, and political heritage of the Renaissance and its relationship to Western civilization. Emphasis on the thought and achievements of many great thinkers of the age, i.e., Leonardo, Michelangelo, Machiavelli, Thomas More, Erasmus, Montaigne, and Cervantes. The course covers roughly the period from the second half of the fourteenth century to the beginning of the seventeenth century. Lectures, seminars and discussion of student papers. /Santosuosso
3 hours.

470. British Science and Society in the 17th and 18th Centuries. A study of the development of modern science and its impact on British society. Reading of original material will be emphasized. Lectures, class discussion, essays./Balderston
(Not offered in 1973-74)
3 hours.

487. Directed Readings in History. The subject will be selected by the student in consultation with an instructor of his own choice. The student will discuss his reading with the instructor and write at least one examination. Permission of the Department is required.

490-499. Specialized Historical Studies. A course on a special topic, normally taught by a visiting professor. One course in the series will be offered each year.
Consult the History Department for details of t he current offering.
3 hours.

DEPARTMENT OF JOURNALISM

Chairman and Professor:
J. L. Wild, BA UWO; MA Michigan
Telephone: 2441
Departmental Office: Room 218, Middlesex College

PROFESSOR: Wild ASSOCIATE PROFESSORS: Key, Wilson ASSISTANT PROFESSORS: Bambrick, Laing, Laplante LECTURERS (Part-time): Collins, Heine, Lockyer, O'Neail

GENERAL COURSES

21. Survey of Mass Communication. The structure of the media of mass communication: relationship of the media to the social, economic, political and cultural environment; elements of mass communication theory; critical analysis of the media with reference to the main issues in the news.
3 hours, Lecture, Full Course.

31. Media Analysis. An examination of mass media functions, motives, processes, effects and feedback mechanisms; general media theories and behavioral-social hypotheses as applied to print, broadcasting and film.
Prerequisite: Journalism 21 or permission of instructor.
3 hours, Lecture, Full Course.

42. Theoretical Applications To Media Design, Production, Effectiveness, and Analysis. An exploration into the theoretical and critical literature which can be applied to enhance the growth, efficiency, and effectiveness of mass communication media.
Prerequisite: Journalism 21 or 31, or permission of instructor.
3 hours, Lecture, Full Course.

HONORS PROGRAM

Requirement for Admission: First Year General Program (Arts, Science or Social Science) with any four courses as principal courses.

SECOND YEAR

Principal Courses

Journalism 250, 255, 260

Four options of which two must be Social Science courses.

THIRD YEAR

Principal Courses

Journalism 350, 351, 356, 375

Three options of which two must be Social Science courses.

FOURTH YEAR

Principal Courses

Journalism 451, 455

Four options of which two must be Social Science courses.

DIPLOMA PROGRAM IN JOURNALISM

Requirements for Admission: A degree in a field other than Journalism from a recognized university with a graduating average satisfactory to the Department of Journalism.

Candidates for the Diploma in Journalism will take the prescribed courses and complete special assignments in reporting, writing and editing.

An average of 60% is required for the Diploma.

Principal Courses

Journalism 255, 260, 351, 356, 375, 400, 451, 455

HONORS COURSES

250. News Writing and Reporting. Introduction to the news media with emphasis on the daily newspaper; newswriting, reporting of specialized fields.
Prerequisite: Registration in the Honors Journalism program
5 Hours, Lecture, Workshop, Full Course.

255y. History of Journalism. A survey of the development of journalism in the British Isles, the United States and Canada.
Prerequisite: Registration in the Honors Journalism Program
1 Hour, Lecture, Half-Course.

350. Interpretative News Writing and Reporting. Depth reporting; interpreting the news; reporting social developments; news analysis; reviewing the arts and critical writing; editorial and column writing.
Prerequisite: Journalism 250
4 Hours, Lecture, Workshop, Full Course.

351a or b. Newspaper Production. Newsroom organization; copy editing; page makeup; survey of the mechanical phases of newspaper production.
Prerequisite: Journalism 250
5 Hours, Lecture, Workshop, Half-Course.

356y. Radio News Writing and Reporting. Comparative study of newspaper and radio writing and news treatment; writing and editing of newscasts; radio interviewing.
Prerequisite: Journalism 250
2 Hours, Lecture, Workshop, Half-course.

375y. Feature and Magazine Article Writing, Magazine Editing. Feature writing for newspapers, article writing for industrial, trade and general circulation magazines, including assignments and a study of freelancing, readership, research, interviewing, organization, rewriting, style. Elements of magazine editing and production.
Prerequisite: Journalism 250
2 Hours, Lecture, Workshop, Half-course.

400. Newswriting and Reporting. For students registered in the Diploma Program in Journalism. Writing for the mass media, the forms and style of Journalistic prose; reporting methods; news evaluation; interpretative reporting. This course is the equivalent of Journalism 250, 350.
8 Hours, Lecture, Workshop, Double course.

451. Communication Problems. Nature, function, process and effects of Communication, aspects of the mass media (newspaper, magazine, radio, film and TV), historic development, general semantics, public opinion, propaganda. Papers and projects on mass communication.
Prerequisite: Journalism 350
4 Hours, Lectures, Seminar, Full course.

455. Radio Documentaries, Television News and Documentaries. Research, interviewing, tape-recording, writing, TV-scripting; editing and producing programs with use of University closed circuit television facilities; commentary, history of Canadian broadcasting; lectures; workshops. Use of TV film camera.
Prerequisite: Journalism 356
3 Hours, Lecture, Workshop, Field Trip, Full course.

DEPARTMENT OF POLITICAL SCIENCE

Chairman and Associate Professor:
S. J. R. Noel, BA Memorial; MA, DPhil Oxon
Telephone: 3384
Department Office: Room 4114, Social Science Centre

PROFESSORS: Barnard, Beecroft, Dawson, Hossé, Pearson ASSOCIATE PROFESSORS: Cartwright, Dobell, Dunlop, Kymlicka, Melvin, Noel, Sansom ASSISTANT PROFESSORS: Cohn, Khanh, McDougall, Miller, Vernon, Westmacott LECTURERS: Craig, Hrabik-Samal, Leishman, Murray SPECIAL LECTURER (Part-time): O'Brien LECTURER (Part-time): Chambers INSTRUCTOR (Part-time): Leach

*GENERAL PROGRAM

Politics 20 or two half-year courses in the Politics 21-26 range is prerequisite for all courses in Politics except Politics 30, 31, 36 and 40. Two half-year courses in the Politics 21-26 range, one in each term, fulfills the first-year requirement in Politics leading to a General or Honors Politics program. Not more than two half-year courses in the Politics 21-26 range may be taken for credit: no particular

Politics 21-26 half-year course is a prerequisite for any particular senior Politics course. Politics 21-26 are courses with limited enrollment.

General BA students wishing to elect an area of concentration in Political Scien must consult with the Department before enrolling.

GENERAL COURSES

20. Introduction to Political Science. A study of principal concepts, ideas and analytical methods of modern political science, with emphasis on the political systems of Canada, the United States and Britain.
3 hours.

21a. War and Politics. An introduction to the study of politics with particular reference to the character, extent and control of international conflict.
Half course (first term).
Limited enrollment.
3 hours.

22a. Capitalism and Democracy. An examination of the changing patterns of industrial society in their relevance to the meaning (or change, or loss of meaning) of the concepts of capitalism and liberal democracy.
Half course (first term).
Limited enrollment.
3 hours.

23a. Managing the City. An examination of the roles, functions and duties of elected representatives and civic staffs with particular reference to administrative co-ordination and the planning of land use, services and utilities.
Half course (first term).
Limited enrollment.
3 hours.

24b. Revolution and Political Change. An examination of revolution and violence and their relationships to other methods of social and political change.
Half course (second term).
Limited enrollment.
3 hours.

25b. Canadian Political Issues. An introduction to political analysis through the examination of selected contemporary issues in Canadian politics.
Half course (second term).
Limited enrollment.
3 hours.

26b. Citizen Participation. Contemporary problems of community input into political decision-making; citizen participation in planning, policy-making and the provision of community facilities and services.
Half course (second term).
Limited enrollment.
3 hours.

30. Canadian Government and Politics. A survey of the government institutions and political processes of Canada.
No prerequisite
3 hours.

31. International Politics. A study of the factors governing international relations: the United Nations; the foreign policies of such countries as the USA, USSR, UK, France, China and Canada.
No prerequisite
3 hours.

36. Provincial and Local Government. The structure and processes of provincial and local government, including such subjects as provincial-municipal relations, finance, administration and principles of urban and regional planning.
No prerequisite
3 hours.

38. Political Parties and Pressure Groups. An analytical and comparative study of political parties and pressure groups.
3 hours.

40. The Politics of Developing Areas. A comparative analysis of social change and political process in developing areas, including Commonwealth countries.
No prerequisite
3 hours.

42. The British Political System. A study of the nature and operation of the British political system, with particular attention to the social context within which the institutions of parliamentary government function.
3 hours.
Not offered 1973-74

44. American Government and Politics. A study of the American Constitution, institutions of government and political processes.
3 hours.

46. Public Administration. The basic principles of public administration in the modern state, including organization, procedures and the relation of administration to policy making.
3 hours.

47. History of Western Political Thought. A study of the major political thinkers from Plato to Mill and Marx.
3 hours.

48. Western European Political Systems. A comparative study of political institutions and processes in Western European democratic states.
3 hours.

49. European Communist Systems. An analysis of political governmental processes in the Soviet Union and East European People's Republics.
3 hours.

HONORS PROGRAM

Requirements for Admission. First Year General Program (Arts, Science or Social Science) including Politics 20 or two one-half year courses in the Politics 21-26 range. All courses will be considered principal courses in first year. Honors students must consult with the Department to ensure that their program includes a well balanced distribution of courses in the following five areas: Canadian Government, Comparative Government, International Relations, Urban and Regional Government and Political Theory

SECOND YEAR

Principal Courses

Politics 237 and two additional honors politics courses

Two options

THIRD AND FOURTH YEARS

Five senior honors politics courses and five options

HONORS POLITICAL SCIENCE WITH FRENCH OPTIONS

Requirements for Admission. First year program (Arts, Science, or Social Science) with Politics 20 or two one-half year courses in the Politics 21-26 range, French 20 and one other course as principal courses.

SECOND YEAR

Political Science: two courses from the 200 series

French: French 271, 290

One option

SOCIAL SCIENCE

THIRD AND FOURTH YEARS

Political Science: Politics 351 and five other courses, including 237 if not already taken and the balance drawn from the 300 and 400 series; with 348 and 434 being strongly recommended.

French: Two courses drawn from French 232, 378, 381 (strongly recommended), 396 & 398. Two options, one of which is to be taken each year.

HONORS COURSES

230. Canadian Government and Politics. An examination of selected problems in Canadian government and politics, such as federalism, political parties and pressure groups.
3 hours.

231. International Politics. A study of the factors governing international relations; the United Nations; the foreign policies of such countries as the USA, USSR, UK, France, China and Canada.
3 hours.

232. Political Analysis. A course in problems in the methodology of political science, in particular: the scope and purposes of normative and empirical political inquiry; the relation of political science to other social sciences; the role of theory and explanation in political analysis; concepts and concept formation; and techniques of empirical political inquiry, including survey research, simulation content analysis, and the utility of statistical and mathematical formulations in the development of political theory.
3 hours.

237. History of Western Political Thought. A study of the major political thinkers from Plato to Mill and Marx.
3 hours.

239. The Politics of Africa. A comparative analysis of social and political change in African states. Topics covered will include the formation of elites, problems of conflicting identities, and relations between African states and the industrialized nations.
3 hours.

240. The Politics of Asia. A critical examination of the relationships between European imperialism, nationalism and revolutionary movements in Asia, and of theories of "modernization" and "political development".
3 hours.

241. The Politics of Latin America. A comparative analysis of the formal and informal institutions of government, with emphasis also on such themes as nationalism, revolution, democracy, dictatorship, legitimacy and the left.
3 hours.
Not offered 1973-74

242. The British Political System. A study of the nature and operation of the British political system, with particular attention to the social context within which the institutions of parliamentary government function.
3 hours.
Not offered 1973-74

244. American Government and Politics. A study of the American Constitution, institutions of government and political processes.
3 hours.

333. Canadian Foreign Policy. An examination of the development and character of Canadian external policy.
3 hours.

336. Provincial and Local Government. The structure and political processes of provincial and local government, including such subjects as provincial-municipal relations, finance, administration, and principles of urban and regional planning.
3 hours.

338. Political Parties and Pressure Groups. An analytical and comparative study of political parties and pressure groups.
3 hours.

345. International Law and Organization. A study of the principles and operations of international and regional associations such as the UN and NATO. An introduction to international law, emphasizing its relevance to the resolution of conflicts between nations.
Prerequisite: 231 or permission of the instructor.
2 hours.

346. Public Administration. The basic principles of public administration in the modern state, including organization, procedures and the relation of administration to policy making.
3 hours.

348. Western European Political Systems. A comparative study of political institutions and processes in Western European democratic states.
3 hours.

349. European Communist Systems. An analysis of political and governmental processes in the Soviet Union and East European People's Republics.
3 hours.

350. The Government and Politics of a Selected Region of Canada. A detailed analysis of the policy and politics related to a specific region of Canada.
Prerequisite: 230 or permission of instructor.
3 hours.

351. Quebec Politics. An analysis of current political trends in Quebec in the context of comparative government theory.
Prerequisite: 230 or permission of instructor.
3 hours.

353. Political Theory and Industrial Society. An approach to political theory which, while focusing on contemporary links between industrialization, society and politics, also takes note of the insights of socio-political thinkers since the emergence of industrialization.
No prerequisites
3 hours.

434. Contemporary Political Theory. A study of the chief political doctrines of the present day, such as communism, socialism, fascism and the theories associated with democracy; an analysis of concepts such as the state, liberty, authority, and theories of political behavior.
Prerequisite: 237 or permission of instructor.
3 hours.

447. Intergovernment Relations. A description, analysis and evaluation of the working relationships between federal, provincial and local governments in Canada. The course will focus on both the processes of interaction and the policy impact of these relationships.
Prerequisite: Politics 230 or 336
3 hours.
Not offered 1973-74

452. Advanced International Politics. A seminar course treating theoretical aspects of international politics in the light of substantive material. Consideration will be given to a selection of normative doctrines and ideologies, conceptual frameworks and theoretical propositions as well as to epistemological and methodological questions with reference to the various modes of international action and interaction, organization and integration.
Prerequisite: Politics 231 or permission of instructor.
2 hours.

462. Metropolitan and Regional Government. An advanced study of the governmental structure, administration, politics, planning and financing of metropolitan and regional communities.
2 hours.

481. Selected Topics in Canadian Government.
Prerequisite: a course in Canadian government or permission of instructor.
Not offered 1973-74

485. Selected Topics in Political Science
Not offered 1973-74

489. Political Psychology. An examination of selected topics in the area of political psychology including: *the role of attitudes in political behaviour; political ideology; personality and politics; political alienation; political socialization;* and individual decision-making.
Prerequisite: permission of instructor.
2 hours.

490. Thesis. With permission of the Department.
Thesis to be submitted by March 15 of the Fourth Year.

DEPARTMENT OF PSYCHOLOGY

Chairman and Professor:
W. J. McClelland, BA, MA Toronto; PhD London
Telephone: 3496
Departmental Office: Room 7418, Social Science Centre

PROFESSORS: Gardner, Jackson, McClelland, Mogenson, Neal, Paivio, Turner, Williams, Wright ASSOCIATE PROFESSORS: Bucher, Chambers, Denny, Kendall, Kimura, Lobb, Murray, Pylyshyn, Reitz, Roberts, Schnore, Siess, Taylor, Vanderwolf, Vidmar, Wilkinson ASSISTANT PROFESSORS: Baran, Boles, Carlson, Chamberlain, Evans, Fay, Goodstadt, Murphy, Neufeld, Pederson, Pepper, Prytulak, Rollman, Siegel, J., Siegel, W., Simner, Smeriglio, Sorrentino, Spence, Stone, Van Fleet LECTURERS: Frisch, Uhlemann

GENERAL PROGRAM

Students in the Fifteen-Course Program who wish to graduate with an area of concentration in Psychology must receive a grade of at least 60% in Psychology 20 and earn credit in at least four Honors Psychology courses, or the equivalent in half courses. The four Honors courses must include Psychology 281, at least one laboratory course (i.e., Psychology 201a-202b or 201a-203b or 211 or 221a-222b or 239), and at least one full course (or two half courses) from the series numbered 240-279 or 340-379. General courses in Psychology may be taken as options but may not be substituted for Honors courses.

For students who officially confirmed Psychology as their area of concentration prior to registration for the 1972-73 academic year, or earned credit in two or more senior Psychology courses prior to July 1, 1972, the minimum requirements for an area of concentration in Psychology are credit in Psychology 20, Psychology 63 or 281, and in any three other senior Honors or General courses in Psychology. For students who confirmed their area of concentration or took two or more courses in Psychology prior to July 1, 1971, the minimum requirements for an area of concentration are credit in Psychology 20 plus any four senior General or Honors courses in Psychology.

HONORS PROGRAMS

HONORS PSYCHOLOGY

Requirements for Admission, Transfer, and Progression

(a) To Second Year: First Year General Program in Arts, Science, or Social Science including Psychology 20 as one course. Principal courses will include Psychology 20 plus any three other First Year courses. In addition to the above, students entering the Honors Psychology program must have credit in

Grade 13 Mathematics (any two of Calculus, Algebra, or Relations and Functions); or Mathematics 10; or Applied Mathematics 22; or an equivalent mathematics course.

(b) To Third Year: A Mathematics course (as above), plus two years in any Honors or General Program which includes Psychology 20. Principal courses will include all Psychology courses plus any other courses to a total of four.

(c) To Fourth Year: A Mathematics course (as above), plus three years in any Honors or General Program which includes Psychology 20 and at least four Honors Psychology courses, or the equivalent in half courses. The Honors Psychology courses must include Psychology 281; at least one of Psychology 201a-202b, 201a-203b, 211, 221a-222b, or 239; and at least one course from the 240-279 or 340-379 series.

(d) To maintain Honors status, a student must achieve at least a 70% average in all Honors Psychology courses taken in a given year, and a 70% average in all principal courses, with a grade no lower than 60% in any principal course.

Second and Third Years

Principal Courses

Honors Psychology students must take five courses per year in the Second and Third Years. At least two courses per year must be Honors Psychology courses. To be eligible for admission to the Fourth Year, a student must complete Psychology 281, at least one full laboratory course (Psychology 201a plus 202b or 203b; Psychology 211; Psychology 221a plus 222b; or Psychology 239) and at least one full course (or two half courses) from the series numbered 240-279 or 340-379.

Fourth Year

Principal Courses

Psychology 485

Two Fourth Year level Special Topics half courses

Three additional Honors Psychology courses, including Psychology 282, if not taken previously.

A student who has previously completed Psychology 282, or who has earned credit in more than four Honors Psychology courses prior to Fourth Year, may substitute other courses for the three additional Honors courses required in Fourth Year. The total number of Honors Psychology courses for Second, Third, and Fourth Years combined must be at least nine. Also, students who successfully completed Second Year of Honors Psychology prior to July 1, 1972 are not required to take Psychology 282.

HONORS PSYCHOLOGY AND PHYSIOLOGY

Requirements for Admission

First year general program (Science) with Psychology 20, Biology 20, Chemistry 20, and Physics 20 as principal courses. Applied Mathematics 20 or Mathematics 24 or 27 is recommended as an option.

Second, Third, and Fourth Years

After the first year, this program requires six full honors courses (or half course equivalents) in Psychology, seven full honors courses (or half course equivalents) in Biology/Physiology, and two full courses in other departments. The normal load is five full courses (or half course equivalents) per year. All courses taken in any year will be considered principal courses.

Second Year: Required Courses

Psychology 221a and 222b

Psychology 281

Chemistry 203

Biology 200 or 220a-221b

One of: Physics 204, 256; Applied Mathematics 20, 200; Mathematics 20, 24, 27, 250; or other course selected in consultation with program advisors.

Third Year: Required Courses

Biology 310

Biology 311

Biology 301 or 309

One full (or two half courses) from: Psychology 240 through 279 or 340 through 379

Two of: Psychology 223b, 224b, 225a, 226b, 227b (all are half course)

Fourth Year: Required Courses

Physiology 480 (students in this program will undertake a project in behavioral physiology or sensory processes as part of their experimental work in the course).

Physiology 443 or 463 (both are half courses)

Three of: Physiology 461, 462, 464, 465, 466, 467, 469 (all are half courses)

Two full course equivalents from: Psychology 223b, 224b, 225a, 226b, 227b, 211, 201a/202b, or any other psychology honors courses selected in consultation with program advisors.

HONORS PSYCHOLOGY AND PHILOSOPHY

Requirements for Admission

First Year General Program in Arts, Science, or Social Science with Psychology 20 and Philosophy 20 and two other courses as principal courses. If Psychology 20 was not taken in the First Year, it must be selected as an option in the Second Year. With the permission of the Departments, a student who has not taken Philosophy 20 may enter this program.

Second, Third, and Fourth Years

After the First Year, this program requires seven Honors Psychology courses, six Honors Philosophy courses, and two options. Some of the options may be additional Psychology and Philosophy courses, and probably should be in the case of a student contemplating graduate work. The normal load is five courses per year including at least two Honors Psychology and two Honors Philosophy courses. A student must have his course selections approved by the Departmental Advisors to the Philosophy and Psychology program. The Advisors may approve the selection of additional courses if merited by the student's performance. All Honors Psychology and Honors Philosophy courses taken in any year will be considered principal courses.

Second and Third Year

Principal Courses:

Psychology 281

One of: Psychology 201a-202b, 201a-203b, 211, 221a-222b, 239

One full-year or two half-year courses from the Honors Psychology courses numbered 240-279 or 340-379

One additional Honors Psychology course

Philosophy 254

Fourth Year

Principal Courses:

Psychology 282, if not taken previously

Psychology 485

One additional Honors Psychology course, if needed to give total of seven

One 400 level Philosophy course, if not taken previously

SPECIAL STUDENTS

Students who have successfully completed a General (Three-Year) BA program, but are not eligible to transfer to Fourth Year of the Honors Psychology program (see Fourth Year Admission Requirements above) may pursue further studies in Psychology by registering as Special Students. Special Students may enrol in any General Psychology course, but will be automatically admitted to Honors Psychology courses only if they have a graduating-year academic average of 75% (upper B range) or higher. Special Students not meeting the latter requirement may be registered in Honors courses only if they obtain written permission from individual instructors. The following Honors courses are not open to Special Students, regardless of average, except with Departmental approval: Psychology 455, 485, 408a, 418a, 419a, 428a, 429b, 438a, 439b, 447a, 449b, 457a, 458b, 468a, 469b, 478a, 479b, 488a, 489b, 498a, 499b.

If the student's goal as a Special Student is qualification for graduate training in Psychology, he is strongly advised to complete at least five Honors Psychology courses including the following specific courses, if equivalent full-year Honors courses have not been taken previously:

Psychology 281

Psychology 282

One of: Psychology 201a-202b, 201a-203b, 211, 221a-222b, or 239

The remaining two Honors courses should be in areas where no previous courses have been taken. The following "core" courses are recommended as useful preparation for graduate school: Psychology 205, 213b, 221a, 231, 241, 251, 271, 252, 353.

GENERAL COURSES

General courses are normally scheduled for three lecture hours per week. These courses are for upperclassmen who may or may not have credit in Psychology 20 or 22. Also, General courses are intended primarily for students not majoring in Psychology. They may be taken as options by students in the General or Honors Psychology programs, but may not be substituted for the Honors courses required in these programs.

It should be noted that most of the General courses were renumbered beginning in the 1972-73 academic year, e.g., Psychology 81 was formerly Psychology 46. Credit will be given for only one number per course. Thus, a student who has successfully completed Psychology 49, 72, 349, or 271 will not receive credit for Psychology 64.

20. Introduction to Psychology. An introductory survey of the methods and findings of modern scientific psychology. The following topics will be covered: history and methodology, biological psychology, sensation and perception, learning and motivation, verbal and cognitive processes, developmental psychology, social psychology, individual differences (intelligence and personality), and clinical psychology. Although there is no laboratory requirement, voluntary participation in approved research projects will be encouraged.
3 hours (lecture). Full course.

56. Child Development. A general survey of developmental psychology with special emphasis on current social issues such as early childhood education, aggression and prejudice, and the implications of current research for child rearing practices. (Formerly Psychology 36).
Cannot be taken for credit if Psychology 36, 236 or 241 has been successfully completed.
3 hours (lecture). Full course.

64. Current Social Problems. Psychological analysis of problems confronting society. Topics may include aggression, intergroup conflict, social movements, prejudice, propaganda, social change, deviant behavior.
3 hours (lecture). Full course.

71. Human Adjustment. Theories of adjustment and conflict, research findings, and applications. Discussion of variables that affect the behavioral adaptation of humans to their environment. Milder forms of adjustive problems emphasized in terms of their acquisition, maintenance, and change.
Cannot be taken for credit if Psychology 48, 79, 252, or 448 has been successfully completed.
3 hours (lecture). Full course.

76. Applied Psychology. A survey of applied psychology, emphasizing the techniques of assessment, methods of behavior change, and problems in evaluation of effectiveness that are encountered by psychologists working in educational, industrial, or hospital settings.
Cannot be taken for credit if Psychology 261a or 262b has been successfully completed.
3 hours (lecture). Full course.

80. The Human Animal. A non-technical survey of the applications of physiological psychology, perception, learning and cognition to everyday human behavior. Topics may include biological basis of emotion, the influences of drugs on behavior, illusions, learning, memory, thinking, and problem solving.
3 hours (lecture). Full course.

81. Humanistic Psychology and its Applications. Emphasis is given to the psychologies of Maslow and Rogers and their implications for personal growth and interpersonal relationships in a wide range of practical settings. (Formerly Psychology 46).
Cannot be taken for credit if Psychology 46, 354, or 446 has been successfully completed.
3 hours (lecture). Full course.

91a. Special Topics in Psychology. This one-term course will deal with selected topics of current interest in Psychology. A list of topics and course descriptions will be available at the time of registration.
3 hours (lecture-seminar). Half course, first term.
Not offered in 1973-74

92b. Special Topics in Psychology. See above.
3 hours (lecture-seminar). Half course, second term.
Not offered in 1973-74

HONORS COURSES

All Honors courses are scheduled for four hours each week; however, in some cases, at the discretion of the instructor, other requirements such as participation in projects or individual meetings with the instructor may be substituted for part of the formal class time.

The basic prerequisite for all Honors Psychology courses is a grade of 60% or higher in Psychology 20. Additional prerequisites for specific courses are indicated below.

It should be noted that most of the Honors courses were renumbered beginning in the 1972-73 academic year. Credit will be given for only one number per course. Thus a student who has successfully completed Psychology 338 will not be given credit for Psychology 211.

Honors courses numbered between 200 and 299 are open to qualified Second, Third, or Fourth Year students, whereas courses numbered between 300 and 399 are generally available only to qualified Third or Fourth Year students, and courses numbered between 400 and 499 are generally open only to Fourth Year Honors Psychology students. Also, it should be noted that the second digit of an Honors course number indicates the general content area of the course. For example, course numbers with 0 as the second digit are in the Learning and Motivation area; similarly 1 designates courses in Sensation and Perception; 2, Physiological and Comparative; 3, Cognitive and Verbal Processes; 4, Child Development; 5, Personality; 6, Applied; 7, Social; 8, General Theory and Research Methodology; and 9, Independent Study.

LEARNING AND MOTIVATION

201a. Basic Principles of Learning. An introduction to the fundamental phenomena of instrumental learning and classical conditioning, with primary emphasis on laboratory studies of simple learning processes in animals. Major learning theories will be evaluated with repect to how well they account for laboratory findings. (Formerly Psychology 235).
Cannot be taken for credit if Psychology 35, 51a, 95, 208, or 235 has been successfully completed.
(2 lecture), (2 laboratory), 4 hours, Half course, first term.
NOTE: Psychology 201a plus either Psychology 202b or 203b constitutes a laboratory course in learning.

202b. Comparative Psychology of Learning. A comparison of the learning abilities of animals at different levels on the phylogenetic scale. Both laboratory experiments and observations of animals in natural settings will be discussed.
Cannot be taken for credit if Psychology 52b has been successfully completed.
Prerequisite: Psychology 201a
(2 lecture), (2 laboratory), 4 hours, Half course, second term.

203b. Human Learning: Basic Principles. An examination of basic principles of conditioning and learning with special reference to human behavior. Topics will include verbal associative learning; perceptual-motor learning; transfer of training; the role of awareness, intention and motivation in human learning; and the role of simple conditioning in language and semantics. Primary emphasis will be placed on laboratory findings rather than on practical or applied situations.

Cannot be taken for credit if Psychology 53b, 95 or 208 has been successfully completed.
Prerequisite: Psychology 201a
(2 lecture), (2 laboratory), 4 hours, Half course, second term.

204b. Human Learning: Behavior Modification. This course will offer, in addition to a review of basic learning concepts (operant and classical conditioning; imitation and observational learning), a discussion of the application of these principles to the modification of deviant behavior and to education. Topics to be covered will include, among others, systematic desensitization, aversion therapy, and the use of reinforcement systems in various settings.
Cannot be taken for credit if Psychology 54b has been successfully completed.
Prerequisite: Psychology 201a
(2 lecture), (2 tutorial - practicum), 4 hours, Half course, second term.

205. Motivation. This course will entail a detailed examination of the activating and sustaining properties of such variables as drive, sensory input, learning, perception, etc. Attention will also be given to the history of motivational concepts, antecedent conditions of drive, instinct theory, and reinforcement and incentive theories of appetitive and aversive motivational states.
Cannot be taken for credit if Psychology 50 has been successfully completed.
(2 lectures), (2 tutorial), 4 hours, Full course.

308a. Special Topics in Learning. One-term course dealing with selected topics of current interest in learning. Topics and course description will be available at registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

309b. Special Topics in Learning. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

408a. Special Topics in Learning. One-term course dealing with selected topics of current interest in learning. Topics and course description will be available at registration.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74

409b. Special Topics in Learning. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74

SENSATION AND PERCEPTION

211. Principles of Sensation and Perception. An examination, in the classroom and laboratory, of the methods, findings, and theories of sensation and perception, based on behavioral research and studies of the nervous system. The course will review how the senses function, how they interpret simple and complex forms of stimulation, and how perception is influenced by higher-order processes.
Cannot be taken for credit if Psychology 38, 61, 212a, or 338 has been successfully completed.
(2 lecture), (2 laboratory), 4 hour, Full course.
NOTE: Psychology 211 meets the requirements for a laboratory course in sensation and preception.

212a. An Introduction to Sensory and Perceptual Processes. This course will introduce the student to recent findings concerning how organisms are able to interact with their environment through the senses. Lectures, discussions, and demonstrations will cover topics such as how to study the sensory systems, what psychological and physiological research has indicated about how they function, and how perceptual abilities are affected by genetic factors, experience, other elements in the environment, drugs, and expectations.
Cannot be taken for credit if Psychology 38, 61, 211, or 338 has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Half course, first term.

213b. Perception. Experiential, motivational, and cognitive influences on perception.
(3 lecture), (1 tutorial), 4 hours, Half course, second term.

318a. Special Topics in Sensation and Perception. One-term course dealing with selected topics of current interest in the areas of sensation and perception. Topics and course description will be available at the time of registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

319b. Special Topics in Sensation and Perception. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term; Not offered in 1973-74.

418a. Special Topics in Sensation and Perception. One-term course dealing with selected topics of current interest in the areas of sensation and perception. Topics and course descriptions will be available at the time of registration.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74.

419b. Special Topics in Sensation and Perception. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.
Not offered in 1973-74

PHYSIOLOGICAL PSYCHOLOGY

221a. Biological Basis of Behavior. Structure and function of the nervous system in relation to behavior; an introduction to physiological psychology. (Formerly Psychology 343).
Cannot be taken for credit if Psychology 43a, 65a, or 343 has been successfully completed.
(2 lecture), (2 tutorial-demonstration), 4 hours, Half course, first term.

222a. Research Methods in Physiological Psychology. An introduction to techniques used to investigate the neural and endocrine foundations of behavior.
Prerequisite: Psychology 221a, 43a, or 65a
(1 lecture), (3 laboratory), 4 hours, Half course, first term.

222b. Research Methods in Physiological Psychology. Same as 222a, but offered in second term.
Cannot be taken for credit if 221a has been successfully completed.
NOTE: Psychology 221a plus 222a or 222b constitutes a laboratory course in Physiological Psychology.

223b. Sensory Psychophysiology. Lectures and discussions on the development of sensory systems, neural coding in sensory systems, mechanisms of selective attention, and implications for human brain damage.
Cannot be taken for credit if Psychology 43b has been successfully completed.

Prerequisite: Psychology 221a, 65a, or 343, or permission of instructor.
(2 lecture), (2 tutorial-demonstration), 4 hours, Half course, second term.

224b. Neural Basis of Cognitive Processes. Neural mechanisms in perception, spatial orientation, memory and language.
Cannot be taken for credit if Psychology 43b or 67b has been successfully completed.
Prerequisite: Psychology 221a, 65a, or 343
(2 lecture), (2 tutorial), 4 hours, Half course, second term.
Not offered in 1973-74

225a. Animal Behavior. The course will examine the social behavior of mammals, drawing from both field and laboratory studies of reproduction, aggression, and social organization and communication.
Cannot be taken for credit if Psychology 44a or 68a has been successfully completed.
(2 lecture), (2 tutorial-demonstration), 4 hours, Half course, first term.

226b. Neural Basis of Learning. Study of experimental findings on the role of the central nervous system in learning and memory by techniques of ablation, electrical or chemical stimulation, electrical recording, electroconvulsive shock etc.
Cannot be taken for credit if Psychology 44b or 69b has been successfully completed.
Prerequisite: Psychology 221a, 65a, or 343
(2 lecture), (2 tutorial), 4 hours, Half course, second term.

227b. Biological Basis of Motivation. Neural and hormonal mechanisms of motivated and emotional behavior. Topics will include the mechanisms for sleep and wakefulness, hunger and thirst, fear and rage, sexual behavior.
Cannot be taken for credit if Psychology 44b has been successfully completed.
Prerequisite: Psychology 221a, 65a, or 343
(2 lecture), (2 tutorial), 4 hours, Half course, second term.
Not offered in 1973-74

328a. Special Topics in Physiological Psychology. One-term course dealing with selected topics of current interest in physiological psychology. Topics and course description will be available at registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

329b. Special Topics in Physiological Psychology. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

428a. Special Topics in Physiological Psychology. One-term course dealing with selected topics of current interest in physiological psychology. Topics and course description will be available at registration.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74

429b. Special Topics in Physiological Psychology. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.
Not offered in 1973-74

COGNITIVE AND VERBAL PROCESSES

231. Psychology of Thinking. Theoretical and empirical studies of problem solving, reasoning, concept formation, creative thinking and

cross-cultural variations in thinking processes. (Formerly Psychology 445).
(2 lecture), (2 tutorial), 4 hours, Full course.
Not offered in 1973-74

232. Minds and Machines. A review of the importance of the computer metaphor in psychology using as examples the development of information processing approaches in selected areas such as perception, memory and cognition. An examination of the contribution of computer simulation and artificial intelligence research, including a detailed study of at least one example.
Cannot be taken for credit if Psychology 86 has been successfully completed.
Prerequisite: At least one course in each of Mathematics and Computer Science, or permission of the instructor.
4 hours, (2 lecture), (2 tutorial), Full course.

233. Psychology of Language. A survey of attempts to understand the nature of linguistic competence and performance. Theories of language acquisition and use. Empirical studies of syntax, semantics, and pragmatics of human language. Additional topics may include theoretical and empirical investigations of the relation between language and thought, language and communication, the biological basis of language, and topics of nonverbal and nonhuman communication.
Cannot be taken for credit if Psychology 88 has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Full course

237a. Human Information Processing. A survey of research and theory covering such topics as attention, perception, decision making, communication, and skilled performance which emphasizes the information processing level of analysis.
Cannot be taken for credit if Psychology 86 has been successfully completed.
4 hours, (2 lecture), (2 tutorial), Half course, first term.

238b. Memory. This course will emphasize theories and data bearing on how information is encoded, stored and retrieved in the human memory system.
Cannot be taken for credit if Psychology 88 has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Half course, second term.

239. Research Methods in Cognitive and Verbal Processes. Laboratory experience in methods of investigation of cognitive problems. Topics may include the use of on-line computers, analysis of verbal reports, linguistic analysis, computer simulation of thinking, reaction time and stage analysis, and verbal learning experiments.
(2 lecture), (2 laboratory), 4 hours, Full course.
NOTE: Psychology 239 meets the requirements for a laboratory course in cognitive and verbal processes.

336a. Special Topics in Cognitive and Verbal Processes. One-term course dealing with selected topics in cognition and verbal processes. Topics and course description will be available at time of registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

339b. Special Topics in Cognitive and Verbal Processes. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

438a. Special Topics in Cognitive and Verbal Processes. One-term course dealing with selected topics in cognition and verbal processes. Topics and course description will be available at the time of registration.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74

439b. Special Topics in Cognitive and Verbal Processes. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.
Not offered in 1973-74

DEVELOPMENTAL PSYCHOLOGY

241. Developmental Psychology: Basic Principles. A general survey of theory and research in developmental psychology including learning, cognition, perception, personality, and social development in infancy and early childhood. (Formerly Psychology 236).
Cannot be taken for credit if Psychology 36, 56, or 236 has been successfully completed.
(2 lecture), (2 seminar), 4 hours, Full course.

242. Developmental Psychology: Exceptional Children. Problems and methods in work with mentally deficient, brain-damaged, and emotionally disturbed children with emphasis on behavior abnormalities and behavior change techniques.
Cannot be taken for credit if Psychology 39, 59, or 342 has been successfully completed.
Prerequisite: Psychology 241 or permission of instructor.
(2 lecture), (2 seminar), 4 hours, Full course.

344a. Developmental Psychology: Social and Emotional. Consideration of processes of socialization in infants and young children. Topics may include analysis of infant-mother interaction systems, peer relations and imitation.
Prerequisite: Psychology 241 or permission of instructor.
(2 lecture), (2 tutorial), 4 hours, Half course, first term.

345b. Developmental Psychology: Language and Cognition. An analysis of the development of the structure and function of language, the development of cognitive processes, and theories of intellectual development.
Prerequisite: Psychology 241 or 236 or permission of instructor.
4 hours, (2 lecture), (2 tutorial), Half course, second term.
Not offered in 1973-74

346. Early Childhood Education. A survey of various approaches to early education in nursery school and day care including infant group care and compensatory education programs. Factors that may determine the influence of early education on cognitive and social development.
Prerequisite: Psychology 241 or permission of instructor.
4 hours, (2 lecture), (2 seminar-practicum), Full course.

347a. Special Topics in Developmental Psychology. An in depth analysis of research in selected areas of developmental psychology. The topic in the 1973-74 academic year will be "The Psychology of Ageing," taught by Professor Schnore.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program or Special Students.
4 hours (seminar), Half course, first term.

348b. Special Topics in Developmental Psychology. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.

4 hours (seminar), Half course, second term.
Not offered in 1973-74

447a. Special Topics in Developmental Psychology. An in depth analysis of research in selected areas of developmental psychology.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.
Not offered in 1973-74

449b. Special Topics in Developmental Psychology. See above. The topic for 1973-74 will be "Role of 'mitation in Development", taught by Professor
Smeriglio.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.

PERSONALITY

251. Personality Theory and Research. Research-oriented analysis of representative personality theories; examination of typical personality assessment techniques; consideration of methods and findings of research on personality. (Formerly Psychology 331 and 450).
Cannot be taken for credit if Psychology 31, 94, 253, 77b, 78a, 331, or 450 has been successfully completed.
4 hours (lecture/demonstration), Full course.

252. Abnormal Psychology. An introduction to psychopathology. General principles such as description and classification, development and dynamics, causation, evaluation, treatment, research design. Application of these principles to the analysis of the main syndromes of abnormal behavior. (Formerly Psychology 448).
Cannot be taken for credit if Psychology 48, 71, 79, 352, 450 or 448 has been successfully completed.
Prerequisite: Psychology 251
4 hours (lecture/discussion), Full course.

353. Tests and Measurements. Basic considerations in the measurement of human differences, the development and use of psychological tests, and description and evaluation of typical measuring instruments. Discussion of persistent problems in the field of measurement. (Formerly Psychology 337).
Cannot be taken for credit if Psychology 37, 62, or 337 has been successfully completed.
Prerequisite: Psychology 63, 255, or 281
(2 lecture), (2 laboratory), 4 hours, Full course.

354. Applied Humanistic Psychology. Emphasis is given to the psychologies of Maslow and Rogers and their relevance to the understanding of personal growth, interpersonal relations and behavior in groups. The student is expected to be personally involved and to examine the material in relation to his own attitudes and behavior. Opportunities for encounter and other forms of practical experience are available. (Formerly Psychology 446).
Cannot be taken for credit if Psychology 46, 81, or 446 has been successfully completed.
Prerequisite: Psychology 251, declared Honors status, and permission of instructor.
4 hours, (2 lecture), (2 laboratory), Full course.

455. Undergraduate Field Work. Practical experience in the application of psychological principles to behavioral problems.
Prerequisites: Psychology 251, Psychology 252, and Fourth Year Honors status.
4 hours, (3 field work), (1 seminar), Full course.

358a. Special Topics in Personality. One-term course covering selected topics of current interest in personality. Topics and course description will be available at time of registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program of Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

359b. Special Topics in Personality. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

457a. Special Topics in Personality. One-term course covering selected topics of current interest in personality. The topic for
1973-74 will be "Culture and Personality", taught by Professor Fay.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, first term.

458b. Special Topics in Personality. See above. The topic for 1973-74 will be "Sex Role Identification", taught by Professor Fay.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.

APPLIED PSYCHOLOGY

261a. Educational Psychology. Theories of instruction and learning. Changes in instruction relative to age, ability, motivation, and sociocultural factors. Behavioral principles applied to the educational process. Using research in modifying education.
Cannot be taken for credit if Psychology 76 has been successfully completed.
(2 lecture), (2 tutorial), 4 hour, Half course, first term.

262a. Industrial Psychology. The use of behavioral principles in industry. Problems in personnel selection, employee morale, human engineering, and organizational psychology.
Cannot be taken for credit if Psychology 76 has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Half course, first term.
Not offered in 1973-74

263b. Occupational Psychology. An appraisal of the relationship between human abilities and personality and occupational choice, performance and tenure.
(2 lecture), (2 tutorial), 4 hours, Half course, second term.

368a. Special Topics in Applied Psychology. Selected topics of current interest in applied psychology. Course description will be available at registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

369b. Special Topics in Applied Psychology. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

468a. Special Topics in Applied Psychology. Selected topics of current interest in applied psychology. The topic in the 1973-74 academic year will be "An Introduction to *Counselling*", taught by Professor G. Stone.
Prerequisite: Fourth Year Honors status
4 hour (seminar), Half course, first term.

469b. Special Topics in Applied Psychology. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.
Not offered in 1973-74

SOCIAL PSYCHOLOGY

271. Social Psychology. An introduction to the theories, methods, findings, and problems encountered in the study of man as a social being. Emphasis will be placed on laboratory and field research. Substantive areas to be covered include the following: socialization; social factors in perceptual-cognitive processes; attitudes, prejudice, and propaganda; social influence; group dynamics; leadership; intergroup relations. (Formerly Psychology 349).
Cannot be taken for credit if Psychology 49, 64, 72, 97, 275, or 349 has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Full course.

272a. The Psychology of Prosocial and Antisocial Behavior. The course will consider the social, situational and personality factors responsible for the occurrence of violence, aggression, and several forms of prosocial behavior. Consideration will be made of the role of frustration, social norms, the mass-media and other possible instigators of violence. Prosocial behavior will be examined with special attention being given to altruism, helping, responses to emergencies and disasters, and the socialization of children with respect to prosocial behavior. Emphasis will be placed on experimental data where this is available.
Cannot be taken for credit if Psychology 73a has been successfully completed.
4 hours, (2 lecture), (2 tutorial), Half course, first term.

273b. The Psychology of Persuasion. An examination of the many aspects of attempts to persuade others to change their attitudes and behavior. Consideration of the importance of the form of the communication, the media, the target of the communication as well as the problems of experimental control and measurement. Different persuasion contexts will be considered including advertising, brainwashing, psychotherapy, race relations and conversions. The problem of the ethics and social responsibility of persuasion attempts will also be examined. Emphasis will be placed on experimental data where these are available.
Cannot be taken for credit if Psychology 74b has been successfully completed.
(2 lecture), (2 tutorial), 4 hours, Half course, second term.

374a. Social Issues (seminar). Analysis of social issues which may include such topics as urbanization, minority group relations, drug abuse, psychology and the law, and violence. Enrolment will be limited, and a major project will be required of each student.
Cannot be taken for credit if Psychology 75a has been successfully completed.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.

378a. Special Topics in Social Psychology. One-term course dealing with selected topics of current interest in the area of social psychology. Topics and course description will be available at time of registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

379b. Special Topics in Social Psychology. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

478a. Special Topics in Social Psychology. One-term course dealing with selected topics of current interest in the area of social psychology. The topic for 1973-74 will be "Person Perception", taught by Professor Pepper.
4 hours (seminar), Half course, first term.

479b. Special Topics in Social Psychology. See above. The topic for 1973-74 will be announced by the instructor, Professor Gardner.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.

THEORY AND RESEARCH METHODOLOGY

281. Research Methods and Statistics. Characteristics of science, with particular reference to psychology; research methodology and design; theory and explanation; statistical treatment of psychological data.
Cannot be taken for credit if Psychology 63, 283a, or 255 has been successfully completed.
(2 lecture), (2 laboratory), 4 hours, Full course.

485. Advanced Research Methods. Advanced statistics and research design; discussion, preparation, and completion of Honors Thesis. (Formerly Psychology 459).
Prerequisites: Psychology 281; one of Psychology 201a-202b, 201a-203b, 211, 221a-222b, 239; and Fourth Year Honors status.
4 hours (seminar), Full course.

282. History and Systems. A study of persistent problems in the history of psychology and an introduction to traditional systems in psychology, such as Structuralism, Functionalism, Behaviorism, Gestalt Psychology and Psychoanalysis. (Formerly Psychology 234).
(2 lecture), (2 tutorial), 4 hours, Full course.

383a. Mathematical Psychology I. Topics in measurement theory, scaling, and decision theory (including signal detection theory and game theory). Applications to psychophysics and other areas of individual and group behavior.
Prerequisite: Permission of instructor; generally Psychology 281 plus one university level mathematics course.
(2 lecture), (2 tutorial), 4 hours; Half course, first term.
Not offered in 1973-74

384b. Mathematical Psychology II. More specialized topics in mathematical modelling. Topics will vary from year to year and may include mathematical learning theory, information theory and human operator models, deterministic theories, including graph theoretic and set theoretic models.
Prerequisite: Permission of instructor; generally Psychology 281 plus one university level mathematics course.
(2 lecture), (2 tutorial), 4 hours, Half course, second term.
Not offered in 1973-74

388a. Special Topics in Theory and Research. One-term course dealing with selected topics of current interest in the area of theory, research, and statistics in Psychology. Topics and course description will be available at time of registration.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, first term.
Not offered in 1973-74

389b. Special Topics in Theory and Research. See above.
Prerequisite: Third or Fourth Year Honors status, or Third Year in General Psychology program, or Special Students.
4 hours (seminar), Half course, second term.
Not offered in 1973-74

488a. Special Topics in Theory and Research. One-term course dealing with selected topics of current interest in the areas of theory, research, and statistics in Psychology. Topics and course description will be available at time of registration.
Prerequisite: Fourth Year Honors status
4 hour (seminar), Half course, first term.
Not offered in 1973-74

489b. Special Topics in Theory and Research. See above.
Prerequisite: Fourth Year Honors status
4 hours (seminar), Half course, second term.
Not offered in 1973-74

INDEPENDENT STUDY

398a. Independent Study. Individual reading and research at an advanced level under faculty supervision.
Prerequisite: Permission of instructor and an "A" average the previous year.
Half course, first term.

399b. Independent Study. Individual reading and research at an advanced level under faculty supervision.
Prerequisite: Permission of instructor and an "A" average the previous year.
Half course, second term.

498a. Independent Study. Individual reading and research at an advanced level under faculty supervision.
Prerequisite: Permission of instructor and an "A" average the previous year.
Half course, first term.

499b. Independent Study. Individual reading and research at an advanced level under faculty supervision.
Prerequisite: Permission of instructor and an "A" average the previous year.
Half course, second term.

DEPARTMENT OF SECRETARIAL SCIENCE

Chairman and Assistant Professor:
P. F. Davis, BA UWO
Telephone: 3731
Departmental Office: Room 319, Middlesex College

Secretarial Science:

ASSOCIATE PROFESSOR: Waller ASSISTANT PROFESSORS: Davis, Hartry, Hedley, Seldon LECTURER: Stevenson

REQUIREMENTS FOR ADMISSION: Grade 13 standing (with a minimum average of 60%) in English and five other credits.

The Ministry of Education of Ontario accepts a degree in this program as the academic qualification for entry into a college of education. Upon successful completion of a one-year program at a college of education the student receives the High School Assistant's Certificate, Type B, for teaching in the Secondary Schools of Ontario.

SOCIAL SCIENCE

FIRST YEAR

Secretarial Science 25
Business 20
English 20, 24 or 26
Two Options*

*The Department suggests Computer Science 21 as a possible choice for one of these options provided the student has the appropriate background in Mathematics.

SECOND YEAR

Secretarial Science 35
Secretarial Science 37
Economics 20
A Senior English
Two Options

THIRD YEAR

Secretarial Science 30
Secretarial Science 45
Secretarial Science 47
A Senior English
Two Senior Options

COURSES

25. Shorthand and Typewriting. ***Shorthand.*** An introductory course in theory and transcription: through training in the principles of Pitman Shorthand with emphasis on the theoretical accuracy of outlines. Use of multiple-channel dictation lab.

Typewriting. An introductory course in learning to use the typewriter as a means of communication: training in speed and accuracy; concentration on efficiency in performance and quality production; emphasis on production typing of letter styles; display, introductory tabulation, manuscripts and business reports.
10 hours, Lecture, One Full Course.

30. Accounting. An introductory course prescribed for Secretarial Science students, emphasizing how accounting data are accumulated and the effective use of data in corporate, partnership and sole proprietorship forms of enterprise.
3 hours, Lecture, One Full Course.

35. Shorthand and Typewriting. ***Shorthand.*** Intermediate course in speed and vocabulary development: increasing syllabic intensity of vocabulary and length of dictation time. Emphasis on accuracy of transcription, and on office style dictation of business and professional communications. Use of dictation lab.
Typewriting. Further emphasis on speed and accuracy development: arranging and typing statistical information in table, chart and graph forms; dictation at the typewriter and production timing of class assignments.
Prerequisite: Secretarial Science 25
8 hours, Lecture, One Full Course.

37. Office Procedures. An examination of the secretary's role as a creative member of the business team; projects on telecommunications, office equipment and records management. Simulated office experience stressing the production of mailable material within time limitations.
Prerequisite: Secretarial Science 25
1 hour Lecture, 2 hour Lab, 3 hours, One Full Course.

45. Shorthand and Typewriting. Senior course with emphasis on achieving maximum potential in speed and accuracy in both areas. Varied and extensive copy for reading, writing and dictation practice in shorthand. Range of dictation, 3-5 minutes at rates increasing to 130 wpm. Use of electronic lab for practice.
Prerequisite: Secretarial Science 35
6 hours, Lecture, One Full Course.

47. Secretarial Administration. Practical experience in administrative secretarial duties in an office atmosphere. Students apply their skills and knowledge to realistic office situations both in University offices and in their own student office. The practical training is supplemented by lectures and discussions in law, computer applications and administrative topics given by visiting professors and members of the business community.
Prerequisite: Secretarial Science 35 and 37
2 hours Lecture, 7 hour Lab, 9 hours, One Full Course.

DEPARTMENT OF SOCIOLOGY

Chairman and Professor:
J. H. Kunkel, BA Pomona; MA, PhD Michigan
Telephone: 3607
Departmental Office: Room 5306, Social Science Centre

PROFESSORS: Balakrishnan, Klapp ASSOCIATE PROFESSORS: Basavarajappa, Ebanks, George, , Pryor, Rinehart, Singer, Turner ASSISTANT PROFESSORS: Archibald, Boydell, Denis, Grindstaff, Henshel, Hunter-Harvey, Jarvis, Marin, Nobbe, Okraku, Silverman, Stelling, Teevan, Westhues, Whitehead, Wien, Williams, Zuzanek LECTURERS: Clark, Gartrell, Grayson, McKie, Musson, Veevers INSTRUCTORS: Cohen, Rowbotham

FIFTEEN COURSE (GENERAL) PROGRAM

General BA students wishing to elect an area of concentration in Sociology must earn credit in Sociology 20, 30 and 31 plus the equivalent of two full senior Sociology courses numbered 32 or above and must have his program approved by the Department.

20. Introduction to Sociology. An examination of the major theoretical perspectives in the field of Sociology, methods of empirical investigation of social phenomena, socialization, group structure, principles of social organization, community structure, population and social change.
2 lecture, 1 tutorial, 3 hours, Full course.

30. Sociological Theory. A study of the history of sociological thought leading to an appraisal of contemporary theoretical perspectives in relation to their logical adequacy and heuristic value.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

31. Research Methods and Statistics. An introduction to empirical methods in Sociology, including elementary statistical methods, experimental design, and basic techniques for the measurement of sociological variables.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

32. Demography and Population Studies. An introduction to the dynamics of population through the

study of change in patterns of fertility, mortality and migration. Emphasis is given to the determinants and consequences of current population growth in both developed and underdeveloped areas of the world, and to efforts being made to control this growth.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

33. Social Psychology. Analysis of the theories and research of human conduct in social settings with emphasis on symbolic interactionism, cognitive consistency, socialization, attitude change, and related topics.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

34. Community Structure. A general introduction to human community from the perspective of sociology, demography, ecology and history, with an emphasis on city planning.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

35. Social Stratification. An analysis of social ranking systems of class, status and power. Topics will include: theoretical and methodological problems in ranking, political and sociological perspectives on community and national power structures, and social mobility in industrialized societies. Emphasis will be placed on the comparison of alternative stratification systems.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

36b. Political Sociology*. An analysis of voting behaviour, voluntary associations, and the social aspects of power and political behaviour in contemporary society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

37a. Sociology of Religion*. An analysis of the functions of religion, the relationships between religion and other social institutions, and organized religious bodies.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, first term.

38b. Social Change. A study of the sources, pattern and consequences of social change. The views of classical and modern theorists will be evaluated in relation to patterns of change exhibited at group, community and cultural levels. Problems encountered in attempts to induce change with respect to economic development, urban planning, population policy, etc. will be surveyed.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

39. The Family. Sociological, psychological, and other research perspectives on family structure and functioning.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

40. Social Problems. Study of theories of deviant behaviour and of social disorganizations, with particular attention to certain specific problems of the contemporary period.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

41a. Communication and Social Character. Analysis of attitude formation and the role of symbolic systems on social character and collective behaviour. Utilizes sociological, communication and general social psychological theory dealing with the function of communication's media in society and the effects of patterns of communication upon members of different social groups. Considers research findings on media content,

opinion formation and change, propaganda and advertising.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, first term.

42b. Small Groups*. An analysis of the methodological and substantive issues in the study of small groups. Topics to be emphasized include stages of groups, encounter groups, group structure, conformity, leadership, and group size.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

43. Minority Groups. The analysis of racial, ethnic, political and religious minority groups in terms of their relationship to each other and to society at large. Pluralism, assimilation, competition, conflict, prejudice and discrimination are among the concepts to be studied.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

44b. Collective Behaviour. Basic forms of collective behaviour including social crowds, publics, and the mass society will be examined in terms of their structural and social psychological consequences. The focus of the course will be the analysis of the relationship between human problems and collective attempts to resolve them.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

45b. Applied Sociology*. The application of sociological theory and method to selected problems in urban society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

46. Medical Sociology and Public Health. The study of the sociological nature of health and illness, medical establishments and professional roles. The definition and measurement of health and community and national solutions to health problems will be considered.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

48a. Sociology of Education*. A comprehensive examination of educational systems in Canada as they relate to mobility, the family, and other social institutions.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, first term.

49a. Criminology. The theoretical and empirical study of Canadian crime and delinquency with emphasis on measurement problems and the theories and research on crime.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, first term.

50b. Bureaucracy in Modern Society*. An examination of alternative theories of complex organizations, the nature and types of organizations, their relationships to modern society, aspects of their internal differentiation, and processes or organizational change.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, second term.

51a. Industrial Sociology*. An analysis of the development, structure, and operation of industrial organization including a discussion of the sociological aspects of labour-unions and management-labour relations.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Half course, first term.

52. Mathematical Sociology*. An evaluation of the feasibility and utility of using mathematics as a tool for representing individual, group, and societal structures and processes.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

53b. Sociology of Corrections. An analysis of the criminal justice system, prisons, other correctional institutions and prediction techniques.
Prerequisite: Sociology 20 and 49 or permission of the Instructor.
3 hours Lecture, Half course, second term.

NOTE: *This course may not be offered in the 1973-1974 academic year. Check with the Department of Sociology before signing up for this course.

HONOURS PROGRAM

Requirements for Admission

First Year General Program (Arts, Science or Social Science) including Sociology 20. At the end of the first year, the student must have an overall average of 70% and at least 70% in Sociology 20. All courses are to be considered principal courses. Note: Physical Education 358, Sociology of Leisure, may be taken as a principal course in the Honours Sociology Program.

SECOND YEAR

Principal Courses: Sociology 231; One of: Sociology 232, 233, 236. Subsidiary Courses: One other Sociology course; two options.

THIRD YEAR

Principal Courses: Sociology 230; One of: Sociology 232, 233, 236. Subsidiary Courses: One Sociology course; two options.

FOURTH YEAR

Principal Courses: Sociology 400, 402 and 404; three other half-courses in Sociology at the 400 level. Subsidiary Courses: Two options (full courses or equivalent).

The programs of all Honours students must be approved by the Honours Program Advisor.

Note: Honours students from other disciplines or general students with 70% averages may enroll in Sociology Honours Classes provided they have had Sociology 20.

230. Advanced Sociological Theory. The analysis of the major contributions of sociological theorists with particular attention paid to the works of Marx, Weber, Durkheim, Simmel, Parsons and Homans.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

231. Methodology and Statistics. A survey of basic procedures used in the collection, reduction and statistical analysis of data.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

232. Population Studies. A study of the major population trends and their impact upon industrialized and developing societies.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

233. Social Psychology. The study of the relationship between the individual and society and of the social determinants of personality, attitudes, language and group dynamics.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

236. Social Organization. A comparative analysis of terms of association and group structure from primary groups to complex bureaucratic structures.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

334. Sociology of the Community. A theoretical focus on urban growth, urbanization, and city systems. Students will participate in basic research to be undertaken in urban communities.
Prerequisite: Sociology 20 and 231 or another Honours Sociology course.
3 hours Lecture, Full course.

335. Social Stratification. An analysis of ranking systems of social class. Topics will include functional arguments of social class, social mobility, and alternative stratification system.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

339. Sociology of the Family*. An empirical and theoretical analysis of changing family structure in contemporary North America, with special reference to interdependencies with other major social institutions.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

340. Sociology of Deviance. An examination of some basic approaches to the study of deviant behaviour with special emphasis on problems in concept formation, measurement and theory construction.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

343. Minority Groups. The study of racial, religious, ethnic, sexual and other minority groups in terms of the differences and similarities of their relationships to the larger Canadian society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

346. Medical Sociology. The study of the social components of health, illness, and patienthood with an emphasis on the nature of health institutions and professions and current issues of lay or professional concern.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Lecture, Full course.

Physical Education 358. Sociology of Leisure. (This course, taught by the Faculty of Physical Education, may be taken for Honours Sociology credit). The determinants of social attitudes and behaviour toward leisure. The study of the variability in leisure patterns associated with members of particular age groups, ethnic and racial groups, resident groups and sub-cultures.
3 hours Lecture, Full course.

399. Selected Topics in Sociology. Reading and discussion in selected topics in Sociology.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Reading course, Full course.

400a. Advanced Statistics. Parametric and non-parametric social statistics. Tests of significance and measures of association, analysis of variance, correlation, regression and probability will be studied extensively.
Prerequisite: Sociology 20 and 231 or another Honours Sociology course.
3 hours Seminar, Half course, first term.

402a. Research Methodology in Empirical Sociology. A comprehensive study of the problems of methodology and research design. The methodology of major studies in sociology will be critically examined.
Prerequisite: Sociology 20 and 231 or another Honours Sociology course.
3 hours Seminar, Half course, first term.

404a. Historical Sociological Theory. A survey of historical and contemporary sociological theory.
Prerequisite: Sociology 20 and 230 or another Honours Sociology course.
3 hours Seminar, Half course, first term.

406a. Population and Social Structure. The relevance of demographic processes to social organization and the interrelation of fertility, mortality and migration with social psychological and structural variables.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

434b. Human Ecology. The consideration of the concepts of human ecology as applicable to the interrelationships of population, environment, technology and organization in society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

436b. Selected Topics in Social Psychology. Topics of current interest to social psychologists will be the focus of discussion and individual research.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

437a. Selected Topics in Deviant Behaviour. A focussed examination of specific topics in deviant behaviour. Canadian research will be examined in areas such as mental illness, delinquency, crime, and sexual behaviour.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

438a. Canadian Society. The structure and functioning of Canadian society. An examination of the political, economic, cultural and value structures and processes.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

441a. Small Groups*. Empirical study of social psychological phenomena with an introduction to empirical laboratory and field methods used in social psychology.
Prerequisite: Sociology 20 or the permission of the Instructor.
3 hours Seminar, Half course, first term.

444a. Sociology of Addictions*. Theoretical, methodological, and epidemiological issues and perspectives in the study of the sociological aspects of addictions are examined relative to the implications of sociological research for understanding, treating, and preventing problems of addiction.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

450a. Sociology of Law*. An analysis of the legal institutions and processes in contemporary society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

451b. French Canadian Society. An analysis of the structure and functioning of French Canadian society with emphasis on politics, religion, social structure and values.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

452a. Political Sociology*. An analysis of social stratification research and theory as related to the role of power and politics in contemporary society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

453a. Sociology of Occupations and Professions*. An analysis of the development and structure of occupations and professions.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, first term.

454b. Industrial Sociology*. An inquiry into the development and structure of major industrial organizations, labour unions, and management-labour relations.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

456b. Sociology of Religion*. An analysis of the interactions between religious belief systems and institutions and the major instituional areas of society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

457b. Sociology of Education*. A comprehensive study of educational institutions in modern society.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

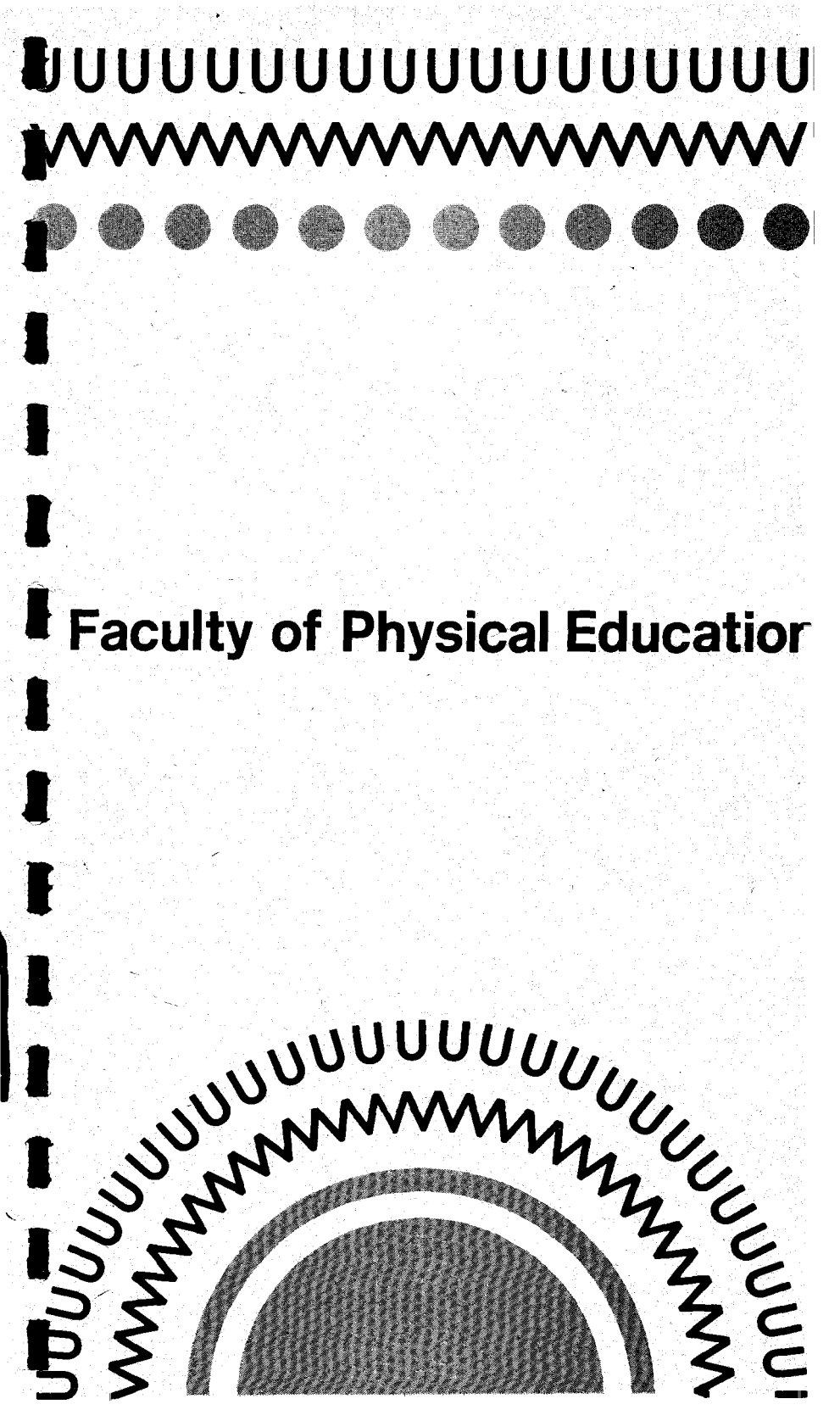
461b. Communications. The study of patterns of mass culture, mass media and their relationship to social factors.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

465b. Sociology of Corrections. A review of the theory and research concerning correctional institutions, penology, treatment of crime, and the correctional process.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

470b. Special Topics and Issues in Demography*. This course is designed to meet the interests of both faculty and students. While the specific topics or issues dealt with in any year will be determined by these interests, current developments in demography will be a main focus.
Prerequisite: Sociology 20 or permission of the Instructor.
3 hours Seminar, Half course, second term.

NOTE: *These courses may not be offered in the 1973-1974 academic year. Check with the Department of Sociology before signing up for this course.

Faculty of Physical Educatior



Faculty of Physical Education

OFFICERS OF ADMINISTRATION

Dean
Zeigler, E. F., BA Bates College; MA, PhD Yale, Professor of Physical Education
Assistant Dean
Paton, G. A., BA UWO; MA Michigan; PhD Illinois, Associate Professor of Physical Education
Chairman, Undergraduate Program:
Stothart, J. P., BPE, MSc Alberta; PhD Pennsylvania State, Associate Professor of Physical Education
Chairman, Graduate Program:
Hayden, F. J., BA UWO: MS PhD Illinois, Professor of Physical Education
Chairman, Physical Recreation & Intramurals Program:
Zeisner, R. E., BA UWO: MA Michigan, Assistant Professor of Physical Education
Chairman, Intercollegiate Athletics:
Barney, R. K., BSc, MSc, PhD New Mexico, Associate Professor of Physical Education

UNDERGRADUATE PROGRAM

Undergraduate Office: Room 103 Thames Hall Phone 679-2444

PROFESSORS: Fairs, Hayden, L'Heureux, Yuhasz, Zeigler. ASSOCIATE PROFESSORS: Barney, Cunningham, Eynon, Leyshon, Paton, Stothart, Wearring ASSISTANT PROFESSORS: Cosentino, Gonser, Hayes, Hill, Milne, Orlick, Petrie, Reid, Richardson, Semotiuk, Stothart, Vigars, Watson, Wise, Zeisner LECTURERS: Bolter, Chelladurai, Decker, Funston, Peterson, Singh, Tannis INSTRUCTOR: STEWART

GENERAL PROGRAM

Although a general program in Physical Education is not actually available, students in Arts, Science and Social Science pursuing a course of study towards a three year fifteen course degree may register in a maximum of two Senior and/or Honors courses per year in each of the last two years of their program to a grand total of four courses. Physical Education 20 or the permission of the instructor is a prerequisite for all Senior or Honors courses offered in the undergraduate program. Physical Education 20 may not be taken concurrently with any Senior or Honors course.

General Courses

20. Survey of Physical Education. Historical and scientific foundations; motor performance; selected health problems; physical fitness and recreation skills.
2 lectures, 2 laboratory hours.

HONORS PROGRAM

Requirements for Admission. A student must complete a first year general program (in Arts, Science or Social Science) including Physical Education 20 and any three others as principal courses to qualify for admission to Honors Physical Education. Biology is also required if Grade 13 Biology has not been successfully completed.

SECOND YEAR

Principal Courses: PE 251 and three courses from the 200 and 300 PE series. (Anatomy 264 and Physiology 342 are included in this series but are not required.)

Subsidiary Courses: Two options approved by the Department.

THIRD YEAR

Principal Courses: PE 351 and three courses from the 200, 300 and 400 PE series. (Anatomy 264, Physiology 342 and 442 are included in this series but are not required.) Permission of the instructor is required for entry into a 400 course.

Subsidiary Courses: Two options approved by the Department.

FOURTH YEAR

Principal Courses: PE 451 and three courses from the 200, 300 and 400 PE series. (Anatomy 264, Physiology 342 and 442 are included in this series but are not required.)

Subsidiary Courses: Two options approved by the Department.

HONORS COURSES

241a. Biomechanics. An analysis of the mechanical principles underlying efficient movement and the application of the principles to motor skills.
2 lecture hours, 1 laboratory hour, *Half course.*

245a. A Survey of Physical Growth and Motor Development. Part I of this course will be the external description of physical growth and Part II will be motor development.
3 lecture hours, Half course.

251. Team Games and Individual Activities. The theory and mechanics of activities; the development of personal performance skills.
2 lecture hours, 4 laboratory hours.

253. Scientific Foundations of Health Education. An approach to intelligent planning for healthful living. The study of personal and community health to equip students with a scientific background in health in order to understand and deal with current health areas.
1 lecture, 2 seminars.

255b. Statistics. *The methods of* statistical analysis from the application of measures and central tendency to simple models of analysis of *variance.*
3 lecture hours, Half course.

260. A History of Physical Education. A survey course in historical developments of Physical Education with special emphasis on Canadian content.
3 lecture hours.

270a. A Survey of Dance. A course that provides an understanding of various dance forms and their ability *to reflect various trends in history and* modern day.
2 lecture hours, 2 laboratory hours, Half course.

341b. Biomechanical Analysis of Physical Activity. A second course in quantitative mechanical analysis of human activity with special emphasis on advanced techniques and applied to specific activities.
Prerequisites: Anatomy 264 and PE 241a.
2 lecture hours, 1 laboratory hour, Half course.

***342. Sport and Work Physiology.** The central purpose of this course is to provide an elementary understanding of human function during athletic and work activities. Specific topics include adaptive physiological mechanisms during exercise, effects of long term physical conditioning and influences of various environmental variables.
Prerequisite: Physiology 342.
2 lecture hours, 2 laboratory hours, Half course.
(*Proposed* 1973-74).

345b. Motor Development. Motor development; infant to adolescent; motor physical and intellectual abilities; perceptual motor skills; motor development in early childhood education; learning disabilities (motor deficiencies); physical education for the *handicapped.*
2 lecture hours, 1 laboratory hour, Half course.

351. Team Games and Individual Activities. *The theory and mechanics* of activities in addition to those studied in PE 251.
2 lecture hours, 4 laboratory hours.

352. Organization and Administration of Physical and Health Education. The function of administration with respect to curriculum planning, *budget, finance, staff, public relations;* principles and organization of intramural and interschool programs; scheduling and management of athletic contests.
Prerequisite: Completion of Second Year or permission of the instructor.
1 lecture hour, 2 seminars.

***356. Sport and Physical Education Philosophy.** An introduction to the philosophy of sport and physical activity as aspects of man and his culture. Physical education and sport are viewed in the light of leading philosophical positions. An examination of a number of persistent problems in the profession and in society.
Prerequisite: One course in philosophy or permission of the instructor.
1 lecture hour, 2 seminars, Half course.
(Proposed 1973-74).

358. Sociology of Leisure. The determinants of social attitudes and behavior toward leisure. The study of the variability in leisure patterns associated with members of particular age groups, social class groups, ethnic and racial groups, resident groups and sub-cultures.
3 lecture hours.

360. Historical-Cultural Foundations of Physical Education. An examination of philosophical, theological and scientific anthropologies with emphasis on their doctrines of the body and their respective influences on education and physical education: concepts of play in historical perspective; culture and the body.
3 lecture hours.

***364. Principles of Athletic Injuries.** (title tentative). An interdisciplinary study of human limits to physical stress during athletics and factors which affect those limits. The study of minimization theory, alleviation and prevention of athletic injury. (This course is open to students in Medicine, Physical Therapy and Physical Education).
Prerequisites: Anatomy 264, Physiology 342, and PE 241 or equivalents.
2 lecture hours, 2 laboratory hours, Half course.
(Proposed 1973-74).

402b. Physical Activity and Health. An examination of the effect of physical activity on selected aspects of health (obesity, longevity, the aging process, coronary heart disease, rehabilitation, mental health); a theoretical and practical approach to exercise prescription.
3 lecture hours, Half course.

443. Scientific Training Techniques. The investigation of modern athletic training methods with emphasis on interval training, weight training, isometric exercises and nutrition.
2 lecture hours, 2 laboratory hours, Half course.

445. Physical Activity and Growth. The purpose of this course is to study the impact of chronic exercise upon the growth processes of bone, muscle and nerve tissues throughout the human life span.
Prerequisites: Biology 21 or 22 and Anatomy 264, and the permission of the instructor.
3 lecture hours, Half course.

451. Team Games and Individual Activities. The study of team games with particular reference to coaching responsibilities in planning, methodology, skill analysis, and personnel management.
Prerequisite: PE 251, 351.
6 hours (lecture or laboratory as required).

453. Motor Learning. First term - Descriptive systems of motor learning and skilled performance; principles of motivation and performance; component processes and performance capacities; information processes in motor learning; human capacities in perceptual motor skills; measurement and prediction of learning and performance.
2 lecture hours, 2 laboratory hours.

Second term - choice of: Applications and implications of the principles of motor learning or advanced topics in motor skill learning.
3 lectures (seminars).

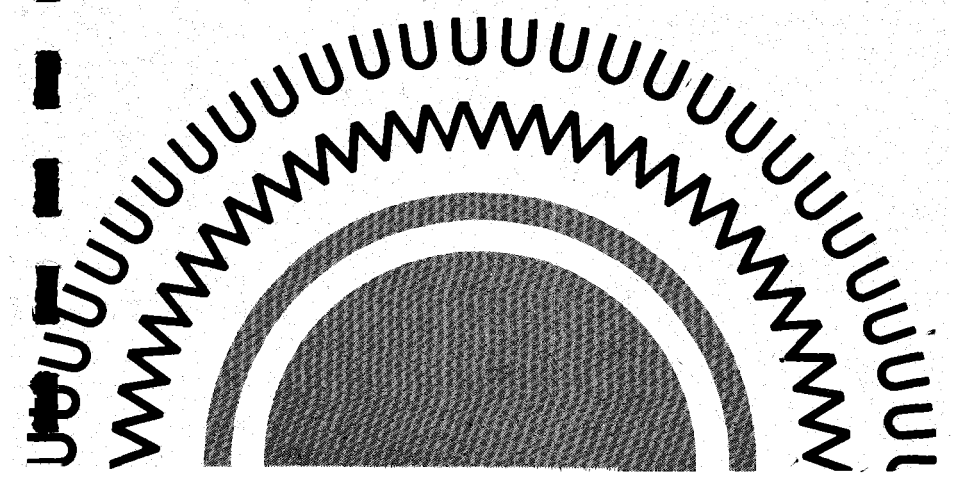
456. Seminar. The interpretation of physical education in its relationship to education; principles underlying programs; presentation of senior thesis.
3 hours.

457. Physical Fitness Appraisal and Guidance. The scientific basis of physical fitness appraisal; the construction and administration of fitness and sports skill tests; descriptive statistics in the handling of data for evaluation, grading, and classification.
2 lecture hours, 2 laboratory hours.

458. Sport and Culture. An analysis of the social and cultural nature of sport in contemporary society.
3 lecture hours.

***488. The Psychology of Sport.** The central purpose of this course is to explore individual human behavior in a physical activity and sports context. Emphasis will be placed on understanding psychological concepts which are pertinent to the field of sport and physical activity (e.g. social motivation, personality development and behavior modification in sports).
1 lecture hour, 2 seminar hours, Half course.
(Proposed 1973-74).

School of Business Administration



ADMINISTRATION OF THE UNDERGRADUATE PROGRAM AT THE SCHOOL OF BUSINESS ADMINISTRATION

J. J. Wettlaufer, Dean and Professor, BA, MBA (UWO), LLD, (Waterloo Lutheran)

J. N. Fry, Associate Dean (Academic) and Professor, BScEng (Alberta), MBA (UWO), PhD (Stanford)

J. R. Kennedy, Program Chairman and Associate Professor, BComm (Manitoba), MBA (UWO),
PhD (Stanford)

J. F. Graham, Director of Administrative Services and Assistant Professor, BA (Assumption), MBA (UWO)

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LECTURERS

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INSTRUCTORS

M. Hagerman, BA, MBA (UWO) R. P. Kudar, BEng (RMC), MBA (UWO) A. R. Kuhlman, BA, MBA (UWO) P. A. Smith, BSc (Liverpool), MBA (UWO)

ADVISORY COMMITTEE

TO THE SCHOOL OF BUSINESS ADMINISTRATION

(January 1, 1973)

J. W. Adams, Vice-President—Finance, Emco Limited
A. K. Adlington, Vice-President, Administration and Finance, The University of Western Ontario
J. A. Armstrong, President Imperial Oil Limited
Ralph M. Barford
J. E. Brent, Chairman of the Board, IBM Canada Limited
G. Allan Burton, Chairman of the Board and Chief Executive Officer, Simpsons, Limited
Paul Desmarais, Chairman, Power Corporation of Canada Limited
J. S. Dinnick, Chairman, McLeod, Young, Weir & Co. Ltd.
John C. Eaton, Chairman of the Board, Eaton's of Canada Limited
J. N. Fry, Associate Dean (Academic), School of Business Administration, The University of Western Ontario
Eric L. Harvie, QC
J. Claude Hebert, President, Warnock Hersey International Limited
W. H. Hemphill, President and General Manager, Imperial Furniture Mfg. Co. Ltd.
R. G. Ivey, QC, Ivey & Dowler
Richard M. Ivey, QC, Ivey & Dowler
Joseph Jeffery, QC, Jeffery & Jeffery
G. L. Knowlton, President, Knowlton Realty Ltd.
Allen T. Lambert, Chairman and Chief Executive Officer, The Toronto-Dominion Bank
J. H. Moore, President, Brascan Limited
Alfred Powis, President, Noranda Mines Limited
W. Harold Rea
S. S. Reisman, Deputy Minister, Finance, Department of Finance
The Honourable John P. Robarts, PC, QC, Stikeman, Elliott, Robarts & Bowman
R. G. Rogers, President, Crown Zellerbach Canada Limited
E. R. Rowzee, Chairman of the Board, Polymer Corporation Limited
W. J. Stenason, Vice-President Transport and Ships, Canadian Pacific
James A. Stewart, President and Chief Executive Officer, Continental Can International Company
J. Allyn Taylor, Chairman and President, Canada Trust
R. B. Taylor, Vice-President & Treasurer, The Steel Company of Canada, Ltd.
Marcel Vincent, Chairman of the Board & Chief Executive Officer, Bell Canada
J. Leonard Walker, President, Bank of Montreal
David B. Weldon, Chairman of the Board, Midland-Osler Securities Ltd.
J. J. Wettlaufer, Dean, School of Business Administration, The University of Western Ontario
W. P. Wilder, Chairman, Canadian Arctic Gas Study Limited
D. Carlton Williams, President and Vice-Chancellor, The University of Western Ontario
R. B. Willis, Vice-President, Allpak Products Ltd.
B. F. Willson, President and Chief Executive Officer, Union Gas Company of Canada, Limited
R. D. Wolfe, Chairman and President, The Oshawa Group Limited

UNDERGRADUATE PROGRAM

The purpose of The University of Western Ontario School of Business Administration is to provide an opportunity for young men and women to prepare themselves for administrative responsibilities. In general the administrator makes and executes policies, both of which functions consist of making decisions. Therefore, the ability to define problems, to see all the implications, to weigh the merits of alternate courses of action, and to provide wise and understanding leadership, must be combined with specialized knowledge necessary to the functioning of an organization.

In 1959, two large American educational organizations, the Ford and Carnegie Foundations commissioned studies to assess the type of program that would best enable young Canadians and Americans to take their place in the dynamic and complex business world of the 20th century. Both reports recommended that university business students should have an adequate grounding in the basic subjects such as English, Economics, Mathematics and Social Sciences. These, the reports recommended, should represent at least 50% of the course studies. The other half of the program, the Business Administration courses, should be centered around such fundamental activities as Marketing, Finance, Production, Mathematical Analysis, Management Control, and Human Relations, with the content of these courses concentrating on problem-solving and decision-making.

The recommendations of these two eminent educational foundations have long been in practice at The University of Western Ontario School of Business Administration. The broad base of training given to the student at the Business School enables him to adapt his knowledge to the variety of conditions and problems present in the business world. This liberal education, focusing on management and administration, will enable a graduate to meet the demands placed on him both in his career and as a valuable member of the community.

THE SCHOOL AND ITS FACILITIES

INAUGURATION OF THE SCHOOL

The teaching of Business Administration, which has always received strong support from the University Board of Governors, was begun at the University in 1923 through a Department of the Faculty of Arts and Science. The first graduate courses were offered in 1932. On July 1, 1949, an important milestone in the history of Western was reached when a separate School of Business Administration was founded on the campus.

The decision to establish the School was made only after careful consideration of all its implications by University authorities and by leading Canadian businessmen. Both groups, meeting together, agreed (1) that Canada needed, and would continue to need, capable administrators; (2) that this need could in large part be met by assuring an adequate supply of young men and women college-trained for management and administration; (3) that this training should rest on a broad background in the arts and sciences, coupled with a thinking attitude toward administrative problems and a sure knowledge of the basic skills and (4) that the elements of business administration could best be learned in a School whose place in educational circles was well-defined and whose professional status was unmistakably clear.

BUSINESS

SCOPE OF THE SCHOOL

The School offers a variety of programs for training in business. The Undergraduate Program, built on a broad foundation of the liberal arts, makes special provision for depth in English, and recognizes the importance of mathematics and psychology to the future business executive.

At the end of the first two years, which are normally in the Faculties of Arts, Science or Social Science, a student shifts to the basic fundamentals of Marketing, Finance, Operations Management, Planning, Information and Control Systems, Management Science, and Administrative Practices. In the final year he has a choice of concentrating in one of these fields or, if he wishes an even broader program, he may take advanced courses in several areas. A course in Executive Problems represents an important part of the final year. Full details of the course are contained in other sections of this bulletin.

ENVIRONMENT

In 1957 the School of Business Administration was housed in a new building designed to facilitate the teaching of Business Administration. The School has fourteen large U-shaped amphitheatre classrooms and eight seminar rooms especially designed for case discussions; extra-wide corridors in the classroom areas, for afterclass discussion; forty other student areas, including a library, reading room and student lounges. A special feature is the 475-seat theatre, which is equipped with a sophisticated television system, along with a full range of other audio-visual educational media. A recent addition to the School, more than doubling the 1957 structure, has created one of the best-equipped business schools in North America, yet the primary emphasis remains on working in small groups and high faculty-student interaction. The building is air-conditioned.

Placement of graduates, an important function of the School, has been adequately provided for in comfortable interviewing rooms where prospective employers may talk to students. The students in the School have access, either directly or through time-sharing terminals, not only to the School's own computing facility, but also to the more extensive equipment to be found in both the University Computing Centre and in external computing centers which provide time-sharing services on a rental basis.

REPORT WRITING PROGRAM

The requirement of written reports has been a prominent feature of the School's instruction for many years. The purpose of the Report Writing Program is to develop the student's skill in written communication and analytical and decision-making ability in business situations. The presentation of the report (organization, style, grammar, syntax, etc.) is graded as intensively as is the content (analysis, insight, calculations, etc.) so that the student receives an evaluation of his ability to combine keen analysis and sound judgment with a clear, concise, and convincing method of expression. The School reserves the right to refuse to grant a degree to any student who has not attained a satisfactory level of achievement in the Report Writing Program.

ORIENTATION PROGRAM

The first few weeks after registration are planned in detail to give a student entering the School an opportunity to acclimate himself fully to the case method of study. While this will not be wholly new for students who have taken introductory business courses; nevertheless, for the first time they will learn to organize small groups for case discussion and become generally oriented to working in this way. During the introductory weeks, professors seek to give the students an outline of the subject matter to be covered during the year. Just as

important is the opportunity to meet members of the faculty informally during the discussion groups and formally in the classroom. The orientation period enables the student to make an early adjustment to a new method of teaching. The staff, in co-operation with the Student Council, will assist students in registration, housing, books and course materials.

RESEARCH WORK

The School is very active in both Case and Project Research. The Case Writing Program develops material for classroom use, emphasizing those aspects of business administration which are peculiar to the Canadian situation. In Project Research, one or more faculty members are freed from teaching assignments for a year to concentrate on some area of business.

THE UNDERGRADUATE PROGRAM

The program leading to the degree of Bachelor of Arts in Honors Business Administration has three objectives: to contribute to the liberal education of the student, to help the student acquire an administrative point of view, to acquaint the student with the modern body of knowledge and techniques for management.

The successful administrator must know people, must see events in perspective, must develop flexibility in thinking; in short, he needs a general education. Accordingly, the first two years of the four year program, in which the student is enrolled in a general program, are designed to give a broad education in the humanities as well as the social and natural sciences. Because of this general foundation, if the student later finds that he has mistaken his aptitudes or tastes he may transfer with little loss of time to another program. The last two years, in the School of Business Administration, are a rigorous period in which the student becomes acquainted with each of the major fields of business and is prepared for positions of eventual responsibility in management. Because the demand for specific skills has a tendency to shift, it has been found most valuable to concentrate training on general administrative and executive skills applicable to all business. At the same time training is given in such specific subjects as accounting, marketing, production management and financial management.

Enrolment in the last two years at the School of Business Administration is intended to be limited, in order to give maximum individual attention to each student.

Credit is given by the Institute of Chartered Accountants and other accounting bodies for work done in this program.

Students who complete the required courses with the grades demanded will receive an Honors BA.

THE SCHOOL AND CANADIAN BUSINESS

A great asset has been the keen interest which business corporations, private foundations and government institutions from coast to coast have shown in the School's work. Since the inception of the School, their handsome contributions have made it possible to have a modern building especially designed for the case method of teaching, to build a diversified and highly competent faculty, to engage in business research and to keep the library abreast of developments in the academic world and in industry. The interest of Canadian business and government, however, has gone even farther in allowing the School to compile case histories from their experiences to enrich its teaching. They have welcomed students into their plants and offices for field trips so that they might be given a working knowledge of assorted types of operations. Many senior executives and administrators visit the School each year to speak, lecture, take part in seminar

discussions and to head panels on Canadian problems of management and administration. These companies and institutions also offer very important experience to students in summer employment between academic terms.

METHODS OF INSTRUCTION

A variety of teaching methods is currently being used at the School. Many courses given by the School are taught by the case method, under which students are presented with a series of situations or problems taken from actual administrative situations, to be analyzed and discussed. The number and variety of cases presented give ample opportunity to develop thinking in terms of the effective treatment of management problems. At the same time, a considerable knowledge of management practices and techniques is acquired.

THE LIBRARY

The Business School Library is the largest library in Canada devoted solely to material in the field of Business Administration. In addition to its rapidly growing collection of books, monographs, pamphlets, and Statistics Canada general and specialized, and the annual reports of 1,584 Canadian and 2,000 U.S. companies, services such as the Financial Post Corporation Service, Moody's, Standard Rate and Data, and the CCH Tax Service are available. Special emphasis is given to the collection of resources dealing with Canadian business.

The library has a reading room which accommodates 300 students, twenty-eight carrels in the stacks, and space for 65,000 volumes.

Microfilm and microcard readers are provided as more and more material is being acquired in microphotographic form.

Elsewhere on the campus are extensive library resources. The book collections of the University total more than 500,000 volumes, with over 4,000 periodicals in all subjects and many languages being received annually. While the general library, located in the D. B. Weldon Library Building, houses the main collection, others can be found in Law, Engineering, Medicine, Music, Education for the use of students in these fields, but may, of course, be consulted by any registered student.

INFORMATION AND APPLICATION PROCEDURE

FOR THE HONORS PROGRAM IN BUSINESS ADMINISTRATION

Students attending other universities are encouraged to consult with this School concerning course equivalents to meet the three prerequisites listed on page 6. Consultation is advisable prior to first and/or second year of studies.

Students wishing to apply to the Third Year of the Honors Program in Business Administration are invited to submit their application EARLY IN THE YEAR and well before the SUBMISSION DEADLINE of MAY 1. For Admission Requirements turn to page 6.

Please direct all enquiries and applications to:

ADMISSIONS OFFICER
SCHOOL OF BUSINESS ADMINISTRATION
THE UNIVERSITY OF WESTERN ONTARIO
LONDON N6A 3K7, ONTARIO, CANADA
(519) 679-3254

IMPORTANT NOTICE

1. In view of increasing costs of supplies and labor, residence fees and other charges set forth in this Calendar are subject to change by the Board of Governors.
2. The Councils of the Faculties reserve the right to withdraw any course or subject listed in this Calendar.
3. The courses of study listed in this Calendar are subject to the restrictions of timetable.
4. The possession of the minimum admission requirements does not in itself guarantee admission to the Faculty.
5. Scholarships awarded by The University of Western Ontario shall be tenable only at the University or its Affiliated Colleges, unless the provisions of a particular scholarship state otherwise.
6. The University reserves the right to modify or cancel scholarship offerings after the date of printing of this publication.

ADMISSION REQUIREMENTS

Admission Requirements to the Honors Program in Business Administration

Admission to the Honors Program in Business Administration is possible after the successful completion of the first two years of any general or honors Program in Arts, Science or Social Science. Three required courses must be completed during the first two years. These courses are ONE of Mathematics (20, 21, 24, 27 or Applied Mathematics 20); ONE of Economics (20 or 21); and Business 250.

Applicants who have completed the first two years with an overall average of 70% or better, and no grade below 60%, will generally be admitted to the Honors Program. Students with two year averages between 60 and 69% are eligible to apply for admission.

Grade 13 (Ontario)

An applicant wishing to pursue studies in Business Administration at The University of Western Ontario must complete the first two years of a general or honors program in Arts, Social Science or Science. A suitable Grade 13 program should include Mathematics A, together with other credits to meet the requirements for First Year admission. Specific requirements are outlined in the General Information booklet which may be obtained from the Registrar's Office.

Mature Applicants desiring to enter a program leading to studies in Business Administration must be 23 years of age. They must have standing in Mathematics at least at the Grade 12 (Ontario) level and are urged to complete Grade 13 Mathematics A (or equivalent). Complete details concerning Mature Applicant admission may be found in the General Information booklet which may be obtained from the Registrar's Office.

ADMISSION TO FIRST YEAR AT WESTERN

Applications: Students registered in Ontario Grade 13 must complete the General Application Form supplied by their high school guidance counsellor. All other applicants—including students wishing to transfer from another university on completion of first-year studies—must complete the application form provided by the Registrar's Office, Stevenson Hall, The University of Western Ontario, London N6A 3K7, Canada. The application deadline for students wishing to begin their studies in the Winter Session is July 1st.

ADMISSION WITH ADVANCED STANDING

Students from other universities and colleges may be admitted to programs at The University of Western Ontario with advanced standing if they are eligible to continue and advance at the institution from which they wish to transfer.

Undergraduate credits obtained while in attendance at another university will be assessed in terms of advanced credit at this University by the Admissions Committee. **Advance credit will not be granted for courses in which the mark obtained was less than one full grade above the minimum passing grade.**

The amount of advance standing that may be granted is limited by the residence requirement of The University of Western Ontario.

Each application for admission with advanced standing will be dealt with individually by the Admissions Committees.

THIRD YEAR

Principal Courses

Business 351 (Marketing)

Business 353 (Finance)

Business 354 (Operations Management)

Business 355 (Management Science)

Business 357 (Planning, Information and Control Systems)

Business 358 (Organizational Behavior)

Neither a seventh course nor a substitute for any of the above courses will be permitted under any circumstances.

FOURTH YEAR

Requirements for Admission

To enter fourth year a student must:

(a) pass all courses in the third year.

(b) obtain an average of 60% or better in the third year.

(c) obtain 70% or better in at least one course.

(d) have no more than one course below 60%.

Principal Courses

Business 478 (Executive Problems);

Plus the equivalent of two full-year courses from among the optional courses offered by the School of Business Administration.

The equivalent of two full-year courses which may be selected from the option courses offered by the School of Business Administration or from any senior courses offered by the University, after consultation with the Program Chairman.

The Student also has the option of taking up to the equivalent of one half-course each term in the Faculty of Law.

Requirements for Graduation

To graduate a student must:

(a) pass all courses taken in the senior year,

(b) obtain an average of 60% or better in all courses,

(c) obtain a grade of 70% or better in at least one full course or two half-year courses,

(d) obtain, for each grade of less than 60%, a balancing grade of 70% or better in courses of equivalent weight. One full-year course will be weighted equivalent to two half-year courses.

COURSE DESCRIPTIONS

20. Introduction to Business. This is an introductory survey course which assumes no prior study of business administration. The course is designed to present an opportunity for students to examine and discuss a broad range of business cases involving situations where analysis and decision-making are required. Emphasis is placed on developing an understanding of the nature and scope of the field of business administration; the various knowledge, attitude, and ability factors involved in administrative effectiveness in the functional areas of business; the management decision-making process, business terminology; and general information about various industries and types of organizations.

While the student is expected to learn much about the problems which managers face, the major benefit he will receive from the course should be a feeling for, and an understanding of, the environment in which the manager must make his decisions. The course should teach him something of what is involved in good judgment as against bad; and above all, it should develop the capacity for forming sound decisions on the basis of the information available. The course continually stresses that it is management's function to make decisions, to make them promptly, and to make them on the basis of what is known, with no more than a proper respect for what is unknown.

The course is divided into five parts:(1) financial function, (2) personnel administration, (3) production, (4) marketing, and (5) general management.

The first part of the course, dealing basically with the financial function—figure management aspects of administration and the management of the funds that must be invested in a business in order to achieve its objectives—is concerned with legal and financial implications of different forms of business organization, analysis of balance sheets and profit and loss statements.

Special attention is paid to the flow of funds resulting from a company's operation, formulation of policies in regard to the nature and timing of capital expenditures, sources of capital in Canada and the methods whereby it may be obtained.

In the second section of the course, an opportunity is provided for the student to develop an awareness of the administrative practices and human relationships that form the core of any business. Cases and readings in this area consider the importance of people in administrative situations, the motivations, actions, and relationships of people in various levels of a business and the conflicts that may stem from differing individual and group characteristics, attitudes, and value systems. The material deals primarily with the problems arising from the interpersonal relationships of people in working situations and emphasizes working relationships, selection and placement, training and evaluation, salary and wage administration, union-management relations, and personnel department operations.

Topics studied in the production section of the course include plant location and layout, equipment installation, inventory control, methods for controlling the amount and quality of the product(s) being produced, decisions as to whether a product should be made by a company or purchased from an outside manufacturer, and the many different overall problems involved in organizing the manufacturing function of a company.

The cases in the marketing section of the course present problems involving consideration of the characteristics and buying habits of consumers; determination of the types of products that should be sold; choice of distribution channels; use of promotional

tools such as personal selling, advertising, and special sales promotion methods; pricing, marketing research and the planning of marketing programs.

The fifth and concluding section of the course focuses on general management problems. It enables the student to become acquainted with the problems of a business as seen from the level of top management where company-wide objectives are set and departmental policies and operations are co-ordinated.

one course.

250. Business. While this course is designed primarily as a preparation for entry to the School of Business Administration, it has wider applicability for the understanding of data flows in the business sector.

The course is composed of 3 interrelated parts.

(1) **Financial Accounting**

Develops the Financial Accounting model used in **public reporting**; in particular it examines generally accepted methods of presenting the economic status and performance of the firm. The uses and limitations of financial statements are assessed, so that the student can read and interpret the published financial reports, and can also gain an appreciation of the important types of information which financial statements do not contain.

(2) **Management Accounting**

Approaches the accounting model from the point of view of the **management of the firm.** Develops methods of internal reporting and assesses the types of data relevant to typical decision-making situations facing managers.

(3) **Data Analysis**

Deals with the development, interpretation and use of Statistical information to isolate, quantify and communicate facts and opinions. This part of the course is taught by the use of actual information gathered in ongoing projects. The course includes a student team project which interrelates the three parts of the course and exposes students to actual proposals for new business ventures.

one course.

351. Marketing. The Basic course in marketing introduces the major problems encountered by business when they decide what products and/or services to sell, how to distribute them and how to promote them to potential customers.

Since the seller should make all of these decisions after considering the wants and needs of these potential customers, the course begins with a study of the consumer. Then, after examining the many factors which influence consumer buying decisions, the impact of these factors on the nature of the products to be sold is studied.

The next section of the course deals with the formulation of distribution channel strategies to move the product from producer through wholesalers, retailers, etc., to the final buyer; it also deals with promotion programs to supply the incentive to the consumer in order to achieve a favorable sales volume. The concluding section of the course deals with the development of overall marketing programs where the individual elements must be fitted into a meaningful whole. The point of view taken is that of the marketing manager. The student is continuously asked to recommend the decision which should be taken in each of the many cases studied. This procedure necessarily involves studying the economic, social and political framework surrounding the seller, as well as detailed marketing research with more operational objectives.

Cases and readings are used as the basis for classroom discussion.

one course.

353. Business Finance. The first half of the course is concerned with working capital, the day-to-day use of

funds in producing and selling a product or a service. The influence of seasonal fluctuations in cash requirements and the financial implications of growth, contraction, and changes in business conditions are explored in a series of cases selected to highlight variations in the need for current funds. Major types of loan arrangements are discussed and an understanding of the bargaining process between the lender and the borrower is developed through the shifting of the point of view from that of the financial representative of the company to that of lending officer of the institution involved.

The second part of the course deals with the financing of long run needs. The financial characteristics of securities are illustrated by having the student consider different situations where the capital structure of the companies is planned with due regard for the interests and right of the various participants. A series of cases is presented to show how securities are planned and sold. Regulation of security dealers is discussed, and the effect and treatment of subscription rights is dealt with in several cases. Reserve and dividend policy is treated in a number of cases and the concluding section on Promotion, Expansion, and Combination treats briefly the more complicated and legalistic side of finance.

one course.

354. Operations Management. Operations management is a course that emphasizes the management of productive activities in organizations. The activities include any task that incorporates moving or operating on materials and/or information in manufacturing, service, institutional or governmental organizations. The course focuses on the analysis of situations, the selection of techniques for analysis, and on the development of the systems approach to thinking about the structure and interrelationships of productive activities within the total organization.

A key objective is to remove the strangeness that many people feel towards the operations management area while helping to prepare them for a management career generally. Students will, therefore, be exposed to relevant knowledge about the economic, organizational and technical aspects of operations management and decision-making. Thus they will deal with problems ranging from job design to the planning and operation of systems producing goods and services.

Necessary concepts and techniques will be taught and applied so that students may effectively analyze specific types of problems. However, the course emphasis will not be on the techniques themselves but on their application to improve overall organization performance. Systems analysis and the increasing importance of electronic computers as analytical tools will also be emphasized.

one course.

355. Management Science. The course in Management Science introduces some of the mathematical and statistical methods available to the decision maker. It is designed to provide a level of understanding which will help the student follow developments in his own field of specialization and to make use of the techniques in his analysis of business problems. The emphasis of the course is on decision analysis under uncertainty, statistical distributions, linear programming, model building and simulation. A portion of the class time is devoted to teaching the student the use of the computer. This will require him to learn FORTRAN and BASIC programming and run programs on the school's computers.

one course.

357. Planning Information and Control Systems. This course examines the operating, capital-expendi-

ture and responsibility budgets as they relate to the management cycle of planning, comparing results with plans and replanning. Within this context the course emphasizes the use of figure data—first in making management decisions and then in appraising the results; the method of the accountant and statistician are both considered in assessing the quantitative aspects of management's problem-solving. In addition, focus is placed upon the need to isolate those factors which cannot be measured quantitatively. The aim is to make the student aware of the usefulness of figure data accumulation and presentation from the manager's point of view; but the student is not expected to acquire the skills of the staff specialist in accounting.

The course should improve the student's ability to isolate relevant data, to prepare presentations to motivate people in the desired direction, and to understand the uses to which figure data may be put.

The course accents the limitations in all data collections and the need to spell out the basic assumptions underlying any data so that all people may have an inquiring attitude towards all figure data which come to their attention.

one course.

358. Organizational Behavior. This course is concerned with the major forces that affect or determine behavior in a business organization. The course is so organized as to delineate these forces and to consider them individually and in relation to each other. The goals of the course are twofold:

(i) to communicate to the student a coherent body of knowledge and theory relating to behavior in organization.

(ii) to develop in the student a capacity to utilize this knowledge and theory in the formulation, diagnosis and resolution of administrative problems prevalent in organizations.

The course material consists of cases and assigned readings. The readings provide the knowledge and theory relating to organizational behavior. The cases provide exercise material for students to formulate and diagnose administrative problems as well as to present a reasoned course of action. The case analyses and readings will be augmented by periodic lectures aimed at integrating various diverse viewpoints presented by the readings and class discussions.

one course.

401. Advertising Management. Advertising Management will be concerned with the broad range of management decisions involved in the conception and implementation of successful advertising programs. The course will focus its attention on two levels of decision-making. Level one, the associated with the development of an advertising campaign itself, largely within the context of a given marketing strategy. Level two, the senior executive level, will center around the relationships between client and agency and the organizational problems of agencies and client advertising functions.

At the operational level, the specific types of problems to be covered will fall into the following categories: budgeting, developing advertising objectives, developing advertising strategy, development of the advertising programs within the agency, testing advertising programs, implementation of the program, and control and evaluation of the advertising program. At the senior executive level, the issues examined will revolve around agency selection and termination, client agency operational policies, organization and control within the agency, and termination of the client/agency relationship.

half course.

441. Marketing Planning. Rapid changes in the economic, social, and technological environment make it imperative that marketing managers

develop operating programs with consideration for future events. Developing such programs is the marketing planning function. Marketing planning is viewed in this course as a continuous process involving: (1) Setting company marketing goals, (2) Assessing market opportunities, (3) Developing a marketing strategy, (4) Developing a set of integrated action programs, (5) Monitoring the implementation of programs and adjusting the marketing plan. The course addresses all steps in the process but emphasis is given to steps (4) and (5). Within step (4) emphasis is given to new product programs. Throughout the course attention is given to the development of marketing planning systems—organizations and procedures—to make marketing planning a formal, co-ordinated, continuous process.

Problems of implementation of new plans and systems in an ongoing organization are highlighted.

During the term, students will work in groups and individually to prepare realistic, detailed plans and planning systems in a variety of problem contexts. There will be a number of comprehensive presentations by students that will be critically reviewed by other students in the class. It is expected that operating business managers will take part in a number of the discussions.

half course.

443. Financial Management. This course is concerned primarily with the financial implications of various kinds of business decisions. Although the point of view of the financial officer is emphasized, the students are expected to consider the views of other executives including the top officer. The course begins with an analysis of the problems of financial control and then examines the basic concepts of investment worth and cost of capital from the standpoint of both the individual concern and the community. Representative problems depicting the fundamental issues at stake and the conflicting interests of the parties involved as well as the complex nature of the underlying assumptions constitute the balance of the course. While stress is placed on the responsibility of the financial officer for assembling and presenting quantitative data—as a focus for the discussions—the prime objective of the course is to reinforce the student's understanding of the principles discussed in the Junior Program and add to his appreciation of the broad scope of the subject.

half course.

444. Manufacturing Operations. Management of a productive facility of necessity involves a number of repetitive planning decisions. These short-run policy and operational problems are functions of the work force, production rate, inventory position, forecasts and sales. The manager's ability to develop a decision system that will fit today's shipping, production, work force and purchasing needs and characteristics has substantial impact on the firm's operating and income statements. Mathematical and statistical methods are tools of manufacturing operations and are used to reduce costs through improved production planning and inventory control systems. Students in the course develop appropriate operating policies using the above tools of analysis.

Competence in the application of decision rules is computers.

half course.

450. Industrial Accounting. This course is designed to develop in the student an understanding of the problems of controlling production and distribution through the use of budgets, accounting procedures and reports. The course provides practice adequate to develop in the student some skill in handling the figure work; it also provides general discussions to

prepare him to approach each new situation realistically in terms of its own particular needs.

Emphasis is placed upon the accumulation and uses of operating data for control purposes.

Problems of inventory valuations, relevant costs, and joint and by-product costing, process job costing and analysis of variance are dealt with. The course is designed to meet the needs of those who are interested primarily in the use of accounting data in handling general administrative problems.

half course.

451. Sales Management. The objective of this course is to develop student understanding and decision-making skills in the building and maintenance of an effective sales organization. Conceptually, materials utilized in the course are organized around three separate, though interrelated, sections of approximately equal duration:

(a) **The Salesman**

This introductory portion of the course is designed to increase student understanding of the role of the salesman in the marketing mix, of the elements of an effective sales presentation, and of the nature of the transactional process of selling.

(b) **The Field Manager**

This section is designed to familiarize the student with the role and importance of field management in the activities of the sales force direction at the supervisory level.

(c) **The Sales Executive**

This section is designed to increase skills in analyzing and planning effective selling strategy, and in selecting and implementing policies which foster the achievement of marketing objectives.

To achieve these ends, case materials covering industrial and consumer sales organizations are supplemented in the classroom by appropriate readings and films.

half course.

452. Personnel Administration. This course is concerned with the design of personnel policies and procedures and their practical implementation. The course is planned for students of general management on the premise that personnel matters comprise an important part of most managerial decision processes. Particular attention is given to the role of the personnel function. The first part of the course gives an overview of traditional functions such as recruiting, interviewing, training, management development, performance appraisal, pay systems and the administration of discipline.

A major part of the course concerns the personnel function as a motivator. Problems of motivation are considered in both union and non-union settings, with particular concern for isolating the elements of success and failure which accompany such programs and the impact thereof on organizational effectiveness.

half course.

453. Investment Management. The primary concern of this course is to introduce the student to the analytical techniques available to both select a security and develop a conceptual framework for establishing and maintaining a portfolio of securities. The emphasis throughout the course is on the personal requirements and objectives of an individual investor and the problems he faces in the Canadian environment.

The course is devoted solely to the study of marketable securities rather than the broader area of investments which would include such areas as real estate, life insurance and so on. As a result, about one third of the course is concerned with bonds and preferred stocks as investment vehicles, about one third with common stock investments and about one third with such collateral areas as portfolio planning, investment counselling, investment funds, formula plan investing etc.

The particular thrust of the course, then, is to study the investment problems that will probably face an individual during his lifetime. It is not a course aimed at investment management in an institutional environment.
half course.

454. Production Policy. This course approaches production management from the viewpoint of the vice-president of manufacturing. Emphasis is on the making of production decisions in the light of marketing, financial, organizational, and general economic aspects as well as the more purely "production" factors.
The course material is oriented around several industries selected from furniture, oil, textiles, plastics, electronics and steel. The material on each industry comprises notes and pictures on the manufacturing processes; notes on the general economic structure, problems, and trends in the industry; and three to five cases on companies in the industry. Three industries are studied in any one year. This approach provides the student with the opportunity to analyze a variety of production problems involved in integrated and non-integrated structures, centralized and decentralized organizations, conventional and unique marketing ventures, old and young, stable and unstable, multi-company and few-company, industries, and industries in which legal pressures may be strong or weak. The task of the student is to recognize the problems and to come to production decisions, harmonious with the situation in the company and with the industry as a whole.
half course.

455. Probability and Statistics. Recent developments in statistical decision theory provide the manager with a framework for dealing with problems which involve decisions under uncertainty. The main focus of the course is application of decision analysis to managerial decision problems. Probability and utility assessments are applied to such decisions as mergers and acquisition, competitive bidding, forecasting and oil exploration. Multiple regression and correlation applications will also be covered. Case applications are examined in depth and students are required to submit project reports on a case situation or a decision problem of special interest to them.
half course.

456. Business Law. This course will be offered in the first semester only. Instead of trying to cover every aspect of the law which might touch upon the field of commerce, we shall deal basically with the general principles of the Law of Contract. One object is to impart some knowledge of the substantive law in a subject fundamental to business transactions. Another is to introduce the business student to the terminology and techniques of legal analysis, and thus enable him to take full advantage of the opportunities for cross registration in the Faculty of Law. With this end in mind a collection of case materials and problems has been prepared and in their selection particular emphasis has been placed on business situations.
half course.

457. Management Planning and Control Systems. The course is designed for students who have had a course in management accounting and who wish to study management control in greater depth.
The material is concerned with those areas of management control that are less well developed as opposed to such areas as standard costs and variance analysis. In particular, the course is concerned with the control of costs and operations by the use of budgets and expense, profit and responsibility centres. These concepts are dealt with from the perspective of the total system.
half course.

459. Research. The purpose of the research course is to provide students with the opportunity of learning the research process by undertaking an individual project and preparing a research paper. The experience of conducting an individual project can be useful to persons considering further academic work or doing special projects in industry.

Specific topics and activities are developed between the student and a faculty member of the student's choosing, who agrees to supervise the student's work. For example, a topic may be chosen on the basis of previous work experience, special interest in research techniques, or particular academic interest.

In order to make best use of the research course the student is advised to plan his research and contact a faculty member in the spring or early summer of the calendar year in which the research course is to be started. Faculty member approval of the research proposal must be obtained before the start of the term in which the course is to be taken.

one course.

460. Auditing. The techniques that have been classified under the general heading of auditing have expanded to such an extent that they are now included in almost every phase of management control. This course is designed to examine the whole area of auditing as it affects and can be used by the modern business administrator.

The first part of the course will deal with case studies on topics such as budgeting, decentralization, internal control and internal audit. These topics will be studied as tools which can be used in establishing intelligent company goals and measuring management performance. Certain specific audit areas with a general discussion as to audit techniques will also be examined.

In the second part of the course, case studies will be examined to develop the role and function of the external auditor as it is related to the shareholders, management, board of directors and the public. A review will be made of current accounting and auditing research recommendations as they relate to the cases being studied. Special emphasis will be placed on the role of E.D.P. systems audit and the related area of flow charting and statistical sampling.

A project on a current audit development will form part of the course.

half course.

462. Industrial Relations. (full-year course, Industrial Relations I may be taken separately)

This is a survey course designed to explore the state of labor-management relations in Canada and the United States and its impact on management. The course presumes that all executives must consider issues of labor-management relations from time to time as they discharge their decision-making responsibilities. Hence, this is a non-legalistic, non-technical survey of the day-to-day problems connected with collective bargaining relationships with emphasis on decision-making skills.

Industrial Relations I considers the following topics: union organization; grievance handling; arbitration; collective bargaining and public interest disputes. Special attention is given to administration of collective agreements, to management rights, union security, technological change, featherbedding, discipline, pay systems and concepts of seniority. The course includes case analyses, lectures, audio-visual presentations, and mock sessions in collective bargaining and arbitration. Attention is devoted throughout to relevant current happenings—especially as they relate to issues of public policy.

Industrial Relations II has two parts. The first is an in-depth simulated experience in designing and imple-

menting industrial relations policies. This involves work as members of management and as union representatives engaged in union organizing efforts. It features a close look at certification procedures, representation elections, picketing, injunctions, wildcat strikes, mediation, conciliation, and unfair labor practices. The second part considers comparative industrial relations systems, government involvement in the bargaining process and emerging characteristics of labor relations.
half course.

464. Purchasing. This course recognizes the increasing importance of purchasing as one of the major functions of business, and seeks to develop currently useful principles upon which sound procurement policy and its administration are based.
There are two major sections to the course. The first is designed to establish a good understanding of basic concepts and techniques in the field of materials management. This takes approximately two-thirds of the course. The remainder is devoted to a series of options selected by the class from topics like personal buying, negotiation, plant visits, reports, selected commodity studies, etc.
The introduction to the basic section is devoted to the relationships between the purchasing department and other departments of the business. It is designed to indicate the nature and scope of the purchasing function especially as it affects the profitable operation of a business. Subsequently, attention is devoted to problems involved in determination and description of proper quality, including the relation of price to quality; materials management, including inventory control; value analysis; source selection and the assurance of supply; price policies; procurement by manufacture and leasing as alternatives to purchasing.
The course concludes with problems requiring an appraisal of the effectiveness with which the purchasing function is being performed. Study materials consist of readings and cases taken from business situations involving an array of purchasing problems. The point of view is essentially that of top management.
half course.

468. Human Relations. This course has a twofold purpose: to develop increased self-awareness and to develop understanding and skill in interpersonal behaviour. The first part of the course stresses personal growth and development. The second section emphasizes sources of misunderstanding between people, understanding others from their point of view, helping another understand his own behaviour and the consequences of such efforts. Throughout the semester students will be expected to draw on diverse disciplines, materials and experiences to expand their source of useful and relevant information for their growth as individuals and professional managers. In addition to classroom discussion, exercises of various types will be used. Time and instructor guidance will be provided for pursuit (individually or in groups) of a topic of special interest to the student.
half course.

470. Financial Accounting. This course is concerned primarily with accounting as a means of communicating financial facts to various interested groups such as owners, analysts, and government officials, outside the immediate business organization. Its secondary concern is with further development of the student's knowledge of certain accounting techniques and principles which were introduced in the Control course.
After a review of fundamental accounting techniques and a critical examination of some company annual reporting, several cases concerned

with the measurement of business income are discussed. These cases are selected with the objective of illustrating the variety of ways in which the computation of business income may be made, all within the framework of generally accepted accounting principles.

Subsequent cases deal with special problems of widespread importance in accounting for changes in the equity accounts of a business, and in accounting for various intangibles. The course also considers problems arising from mergers, holding companies, and the preparation of consolidated financial statements.

Since the course is concerned with communication of financial facts to outsiders, considerable attention is devoted to company annual reports and to the bulletins and regulations of the professional accounting bodies, the securities exchanges and various government agencies.

The course is based primarily on case discussions, but a substantial amount of reading of appropriate literature is an integral part of the course.

half course.

471. Marketing Communication. The objectives of the course are to develop (1) the concept that advertising, personal selling, and other promotional activities have a common objective—the communication of incentives to buy, (2) specific models of the buying decision process and the communication process which can provide a framework for the analysis of promotional problems and the evaluation of promotional activities, (3) student skills in analysis and decision-making.

Both readings and cases are used in development of the topics considered in the course. These topics include: opportunities for, and limitations of promotion; the buying decision process; the communication process; the promotional job; creative strategy and the promotional mix; consideration of the effect of the source, the medium, and the message on the successful implementation of creative strategy and evaluation of promotional effort.

half course.

473. Financial Institutions. This course has two broad objectives. The first is to study the organization, co-operation and regulation of the money and capital markets in the Canadian economy. The second is to analyze the effectiveness of banks and financial intermediaries in influencing the flow of funds as well as the problems of the businessman in making maximum use of the services they provide. The course is designed to be of interest and value to those who are considering careers with such firms. It should also be of benefit to those who desire to develop their understanding of the world of finance for a career in nonfinancial firms.

During the course the following kinds of questions will be discussed. What is the structure of Canada's financial community in terms of legal organization, locus of voting control, distribution of equity ownership, availability and adequacy of coverage of financial services? What are the kinds and magnitudes of the various fund flows through different classes of financial institutions? How does the Bank of Canada regulate the flow of funds? How can financial managers anticipate monetary and debt policies and guard against adverse consequences of sudden reversals in policy?

Particular attention will be given to an evaluation of the institutional strategies used in competing for deposit and other funds, and on the effective employment of these funds in the financing of business and individual capital needs. An examination will be made of the extent to which trust and loan companies, consumer and industrial finance companies, and industrial development corporations facilitate the business operation of nonfinancial

firms. Also examined is the role of investment bankers in developing opportunities for the temporary investment of idle balances in the short-term money market, as well as their activities in private and public placement of securities. Of overriding concern throughout this course is the reconciliation of the objectives of various financial institutions with the demand for funds by the business community, the requirements of supervisory authorities, and the public interest.
half course.

474. Management of Technology. The impact of technological change on the manufacturing facilities of the firm is far-reaching in its implications. For management the penalties of poor decisions about production technology rise quickly with technological sophistication.
This course focuses on management of technological resources with some emphasis on production facilities. Its objectives are (1) to improve student analysis of economic and technological factors relevant to management decisions about uses and control of technological change within the firm, (2) to increase student understanding of technological change as a factor in business activities, and (3) to develop approaches to managing production processes under conditions of technological change.
half course.

475. Planning Models in Production Systems. The essence of this course is the examination of management science applications in the planning and design of production systems. Production is viewed as a complex man-machine system, operating in an organizational environment with cost as a significant criterion of success. Techniques involving information systems, decision processes, and mathematical models are studied in terms of improving the performance of this system. Specifically, the course adopts a systems approach to production built on a basic economic model of the production function. The role of formal models such as mathematical programming, network analysis and queuing, and techniques such as simulation, are related to the design of the production system. Developments in behavioral models related to decision processes and information systems are studied for their managerial implications. Throughout, the emphasis is on the application of planning models in production systems as opposed to their theoretical derivation or degree of complexity.
half course.

478. Executive Problems. The course in Executive Problems will focus on business problems faced by executives at the top administrative levels of business organization. In most cases these will be general management problems. The purpose of taking such a frame of reference is to help the student develop better ways of seeing, describing, and thinking about:

(a) the interrelatedness of functional problems in business—those that we traditionally break down into financial, marketing, and production problems;
(b) the mutual dependence of the external economic survival and expansion of a business organization and its internal social stability and growth; and
(c) the knowledge, ability, and other human qualities required for exercising effective leadership of a business organization as a whole.

Case materials will draw on executive situations in companies both large and small.
one course.

480. Taxation. The course has two major objectives. The first is to gain a broad understanding of the Canadian tax system in its economic, legal and accounting settings. Fundamental le-

gal and economic concepts will be studied as well as specific provisions and problems that commonly arise. The second objective is to relate the provisions of the taxing statutes to common business situations and problems. Emphasis here is on tax planning and the responsibilities of management to live within the tax law.
half course.

481. Marketing Research. In marketing, as in any other aspect of business, the manager must develop relevant information to support decisions. Planning and controlling marketing programs requires a variety of facts—from data on the needs, habits and attitudes of customers, to information on the effectiveness of promotional efforts. The manager must understand and contribute to marketing research designed to provide such information, if he is to ensure a flow of appropriate information and its proper use.
The Marketing Research course has been designed with three aims in mind:
(1) developing skills in defining and placing priorities on information requirements.
(2) providing familiarity with the basic methods used to gather and analyse marketing data.
(3) developing skills in interpreting research results and applying them in specific marketing situations.
An important aspect of the course is the project work done by students. Experimental and survey studies are carried out in a number of marketing problem areas with a view to establishing firsthand acquaintance with the research process.
half course.

485. Operations Research—Methodology. The objective of this course is to develop the student's understanding of the more frequently used concepts of operations research. The course is designed to achieve this in the following way:
First, the theoretical background and important assumptions of operations research concepts are discussed. Then the basic models and solution procedures are developed. Second, with this background, the developed model will be applied to various administrative problems in which decision-making is required. In many situations elaboration of the basic model is necessary in order to cope with the problem. In all situations high emphasis is placed on the interpretation and reliability of the solution.
The subject areas covered are competitive bidding, linear programming, dynamic programming, queuing theory and Markov chains.
Students will be expected to use the computing facilities in solving some of the problems.
half course.

486. Operations Research—Applications. The course is offered for students having some background in the methodology of Operations Research and will introduce a wide spectrum of actual Operations Research work. The objective is to concentrate on the use of Operations Research by analysing, modelling and solving management problems. The students are required to analyse the various stages of an Operations Research project and the implications of the solution. The course is designed to broaden the student's knowledge in Operations Research, to enable him to better evaluate Operations Research work and to improve his ability to communicate effectively with management and Operations Research analysts. The topics discussed will cover areas such as forecasting models, transportation systems, problems in insurance and banking, corporate planning models and Operations Research in the public sector.
Prerequisite: Business 485 or equivalent.
half course.

489. International Business. The emphasis of this course is on the management problems that arise when firms do business across national boundaries. A central concept of the course is that corporate commitment to international markets evolves in stages, beginning with simple export operations and culminating in a global "multi-national" stance. The corporate skills and resources required for success differ at each stage, highlighting the need for managerial awareness and readiness to change. The course also pays attention to the issue of investor-host country relationships. This is examined from the point of view of less-developed countries in need of economic assistance, and from the Canadian point of view as a major user of foreign capital. Other issues touched upon include taxation of multi-national corporations, hard currency problems of less-developed countries, and problems of cultural adaptation inherent in crossing some national boundaries. The course utilizes the case method for the most part, but this is supplemented by occasional debates, lectures and films.
half course.

493. Capital Markets. The objectives of the course are to (1) define Canada's capital markets, (2) describe and analyze the flow of funds within these markets, (3) analyze the basic determinants of value, expected return and risk, in the context of financial assets, (4) establish the premises underlying the concept of an efficient market and compare the actual situation to the model and (5) develop the basic relationships between market prices and other economic data in order to explain and predict.
The topics are developed by reading assignments followed by classroom discussion. In addition, students develop and undertake short research projects on financial markets for presentation in class.
half course.

495. Mathematical Programming. Mathematical programming is one of the many facets of Operations Research. This course will deal with the mathematical theory behind the various optimization techniques for linear and non-linear systems.
Throughout the course theory and applications will be intermingled. The extent to which each topic will be covered will depend on the students in the course. The areas treated will be introduction to linear algebra and functional analysis, extensions to linear programming and various topics in non-linear programming.
half course.

496. Computers and Information Systems. The course is designed to give the student an understanding of Computer Systems design and implementation in relation to Management Information Systems.
One of the comments heard most often about computers and their relation to management is that the aspiring manager should be a knowledgeable consumer of computers. The student will be given a background which will enable him to participate effectively in the design of an informations system, the acquisition of an appropriate computer, and the operation of a computer installation. He will also be given some insight into the impact of computers on organizations.
half course.

Topics Courses. These courses are offered in different areas each year, depending on the interests of the students and faculty and are intended to cover areas not covered by other courses.
In the past, courses such as Topics in Management Science, Topics in Finance, Topics in Financial Accounting and Topics in Organizational Behavior have been offered.
half courses.

SPECIAL FACILITIES OF THE SCHOOL

THE PLACEMENT OFFICE

The conditions of study in the program place a premium on free time. Most of each day is spent in the serious study of business problems. Each student must, therefore, plan his placement program in order to use his free time as economically as possible. It must be understood that the effective placement of each student is wholly his own responsibility. The Placement Office endeavours to assist each student to make the most of his efforts.

During a six-week period in January and February each year, all interested companies are invited to visit the School for the purpose of discussing employment with graduating students. During the fall term, the School provides opportunities for students to participate in meetings dealing with career counselling, effective placement procedure, resume writing and general orientation to effective placement. Continuing efforts are made to advise industry and business, both large and small, of the pool of manpower offered by each class. Information about the class is forwarded to over 5,000 top management people across the country. Over 200 companies and institutions recruit regularly at the School.

The success of each student's job-seeking activity is in direct relationship to the effectiveness of the personal effort he makes toward placement. The Placement Office plays a significant role in helping each student to set career goals, develop job strategy and make the whole process as effective as possible.

THE BUSINESS COUNCIL

The School of Business Administration sees extracurricular activities as an important part of college living and encourages its students to participate. The Undergraduate Business Council is the organization which governs undergraduate student activities within the Business School. The Council makes arrangements for social events and co-operates with the MBA Association and the Faculty in sponsoring many extracurricular activities. Through the Council, undergraduate students can participate in the Business Forum, Marketing Club, Investment Club and the student newspaper "Dollars and Sense" as a means of rounding out their education program. The Association works with the Placement Office to provide knowledge of career opportunities and actively assists in the placement function, both at the summer and permanent levels.

THE BUSINESS QUARTERLY

The Business Quarterly is in its thirty-seventh year of publication as a professional management journal. It is published by the School of Business Administration as an extension classroom for the continuing education of Canadian businessmen.

The Business Quarterly contains articles and special features written by businessmen and academics recognized in their fields of special interest. Its articles are directed to those in positions of administrative responsibility. High quality work submitted by students is considered by the Editorial Advisory Board for publication. This Board is comprised of faculty members and Canadian businessmen. An honorarium is paid for all articles accepted and a $500 award is made to the author of the article judged to be the best in the current year. Reprints of most articles are available.

The Business Quarterly has grown rapidly in recent years with a paid circulation in excess of 6,000.

The majority of these subscribers are in upper and middle management.

FEE SCHEDULE AND EXPENSES

FEE SCHEDULE

Annual Tuition and Prescribed Accessory Fees

For full-time intramural undergraduate students. The annual sum includes Student Activity and Health Services Fees.

First, Second, Third and
Fourth Years, each $642.50

Fees are paid in full on registration, but if necessary, they may be divided after consultation with the Comptroller, into two instalments. The extra charge for this division is $5.00. Students must pay their fees as above before attending any lectures or examinations, except by permission of the Dean of the School and the Comptroller. No student shall be recommended for any certificate, diploma or degree until his tuition fees and other accounts owed to the University are paid.

The Board of Governors reserves the right to amend fees after the printing of this list.

EXPENSES

The following estimates are based on an academic year of 33 weeks:

	Single Student	Married Student with wife working no children
Tuition	$642.50	$642.50
Housing and Food	$1,000.00	$2,000.00
Books and Supplies	$310.00	$310.00
Other Expenses	$750.00**	$900.00**

The above may be varied by the type of accommodation chosen and/or paying for meals in conjunction with accommodation.

**Other expenses are certain personal expenses which vary greatly with the requirements of the individual student, such as clothing, laundry, transportation, social and other personal services. A careful estimate of these expenses should be included in your financial plans.

There are good cafeterias on the main campus and adequate lunch can be purchased for a very reasonable price. Students of Business Administration should not count on cutting expenses by using secondhand books. Secondhand casebooks, where exhibits often have been removed or answers supplied, are of little value. The University provides a wide range of facilities: e.g., student government and student publications such as Folio, Gazette and Occidentalia offer several responsible posts; such groups as the Players' Guild, the Debating Society, the Political Economy Club, the International Affairs Society and the U.W.O. Choir are all active bodies. For those interested in sports, there is a particularly well-rounded program; facilities and instruction are available for football, soccer, hockey, basketball, skiing, boxing, wrestling, badminton, tennis, golf, bowling and swimming.

GRADUATE COURSES IN BUSINESS ADMINISTRATION

In addition to its undergraduate program, the School of Business Administration offers the opportunity for graduate work in the field of business administration. The Master of Business Administration program is designed to cover two academic years and requires for entrance a recognized undergraduate degree from an accredited university plus an undergraduate record which demonstrates the ability to do good graduate work.

In 1960, the School instituted a program leading to the Doctor of Philosophy degree in Business Administration. It is the stated purpose of this course to train prospective teachers and researchers of business administration. Admission procedures will be highly selective.

Further information on the MBA and PhD programs may be obtained from the Admissions Office, School of Business Administration.

STUDENT FINANCIAL ASSISTANCE

***Ontario Student Awards*:**

These pay the full amount of assessed educational need for students who are Ontario residents; there is no academic-average requirement. The awards are comprised of part grant and part loan. Application forms are available at all post-secondary and secondary consideration for the Canada Student Loan, and the Ontario Award.

LOANS

Canada Student Loans Plan:

Full details of this Plan are available in a brochure issued by the Government of Canada which may be obtained at all eligible post-secondary institutions in Canada. (Ontario residents see Ontario Student Awards).

University Loan Fund

Amounts up to $500 are available to full-time students in any year of any program who have a satisfactory academic record and need financial assistance to continue their studies.

Commercial Bank Student Loans

In recent years, there has been a trend on the part of Canadian banks to make sums of money available to students for educational purposes. Interested students should contact the bank of their choice.

SCHOLARSHIPS, PRIZES AND AWARDS

The following scholarships, prizes and awards are of particular interest to undergraduate students of Business Administration.

The Clarkson, Gordon & Co. Prize:

A prize of $100, the gift of Clarkson, Gordon & Co., Chartered Accountants; awarded annually to the student who completes the third year of the Honors *Course in Business Administration* with the highest standing in accounting.

The William C. Benson Prize

A prize of $50, the gift of William C. Benson, awarded annually to the highest ranking student in the Business 250 course in the second year, who is entering the third year in the School of Business Administration the following fall. The award will be made at the beginning of the third year.

Student Assistantships

The school has openings for a number of student assistants to help faculty members in grading and supervising undergraduate work. These assistantships normally carry a small honorarium.

Touche, Ross Award:

An award of $300 will be given to the student entering the fourth year of the program in Honors Business Administration with the best marks in the humanities and social sciences. He should have at least a second class standing in the business subjects taken in his junior year, and should possess other qualifications

which, in the opinion of the faculty, indicate that he could, if he so desires, have a successful and happy career in the accounting profession.

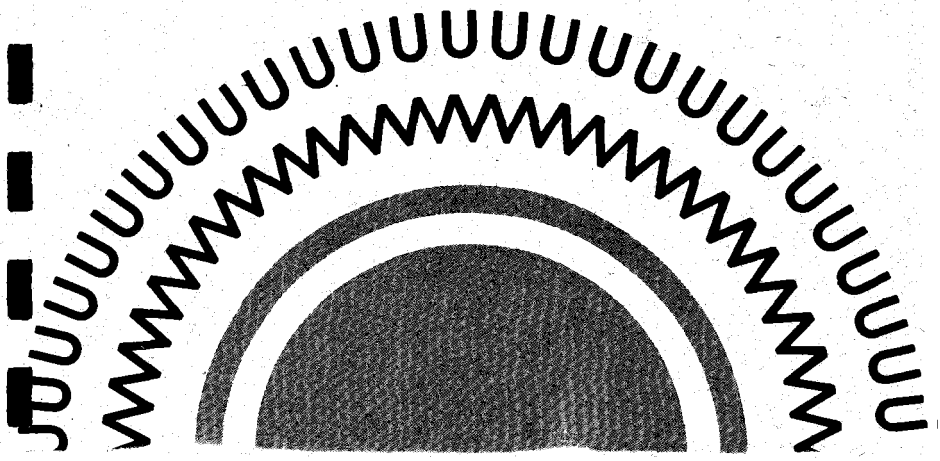
Wilhelmina and J. Gordon McIntosh Scholarship No. 1:

$100 awarded for general proficiency in the second year of the School of Business Administration, payable during the third year at the School.

Wilhelmina and J. Gordon McIntosh Scholarship No. 2:

$150 awarded for general proficiency in the third year of the School of Business Administration, payable during the fourth year at the School.

Faculty of Engineering Science



OFFICERS OF ADMINISTRATION

Room 2005A Phone: 679-3304

Dean: A. I. Johnson, BASC., MChE, PhD, PEng
Room 118A (Bio-Building) Phone: 679-3419

Assistant Dean (Graduate Affairs): J. E.
Room 2006, Phone: 679-2769

Assistant Dean (Undergraduate Affairs): G.
Room 2085 Phone: 679-3317

Student Services Officer: W. H. Peacock,
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Chairman, Chemical and Biochemical Engineering:
Room 116 (Wind Tunnel) Phone: 679-3307

Chairman, Civil Engineering: A. G.
Room 2077 Phone: 679-3333

Chairman, Electrical Engineering: I. I.
Room 2009D Phone: 679-3344

Chairman, Materials Science: J. D. Brown,
Room 2073, Phone: 679-3323

Chairman, Mechanical Engineering: E. S.
Room 2069B Phone: 679-3332

Chairman, Core Studies: R. K. Swartman, BSc, MSc, PEng

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ENGINEERING

GENERAL FACULTY INFORMATION

A MODERN DEFINITION OF ENGINEERING

While Engineering has traditionally been concerned with the application of science, a new definition has recently been introduced: Engineering is the profession, responsible and accountable for man's physical environment, its management and control. In this era of concern for over population, the remedying of past damages to our environment and the utilization of the world's remaining resources to the best advantage, this profession offers tremendous challenges and opportunities to young men and women. The Faculty of Engineering Science at Western Ontario provides the educational foundations, and introductory practical experience for meeting these challenges.

CORE STUDIES

The branches of engineering stem from the common core in science and mathematics. At Western, all engineering science students study essentially the same subjects in the first two years of their course; a slight exception has been made in the case of those intending to specialize in the Chemical and Biochemical field. In these core classes, students also have good contact with fellow classmen who will be entering science and other professional and non-professional programs; in this way they obtain a better appreciation for the inter-relationship between engineering, science, economics, and other disciplines through their technical and non-technical prescribed courses and electives.

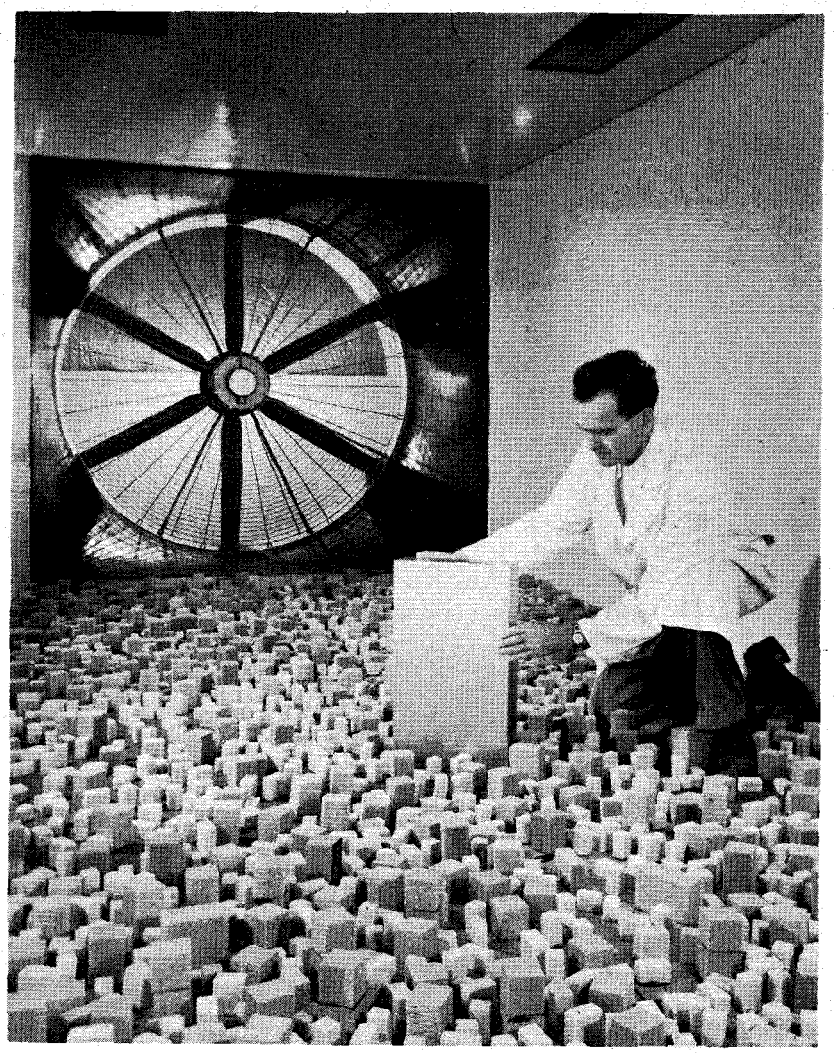
A particularly exciting course that may be taken by undergraduate engineering students is Man and His Environment, an interfaculty program in which the problems—technical, economic, social, political—of man and his physical environment are studied. This course is designed to educate our students in the total system's problems and opportunities dealing with the world in which they will make their contributions.

UPPER YEAR CLASSES

Students entering their third year will choose a field of specialization; it is expected that by that time they will have a better idea of what their aptitudes are, and also their goals in their future professional activities. These areas of specialty are Chemical and Biochemical, Civil, Electrical, Materials, Science and Mechanical.

A particularly exciting activity of the third and fourth years is for students to be engaged in a project and working closely with a faculty member, often as a task force of several students, on an attack on a real engineering problem. In coming years, it is expected that many of these will be directly related to industrial problems and many of the environmental engineering nature.

At Western, the Faculty of Engineering Science has pioneered many innovations leading to better faculty-student communication and cooperation. Every effort is made to promote this, and although the first year student may find himself, or herself, most of the time physically separated from the Engineering building, taking classes in other colleges of the University, the Faculty of Engineering Science is ever watchful of their progress and sensible of their needs. To aid in this, the professors conducting classes attended by Engineering Science students in their first and second years are regarded as the Core Group, the chairman of which is specifically charged with the duty of supervising the education and morale of the Freshmen and Second year students. It is in the "core" that the foundations of knowledge and habit are laid, and student confidence and aspiration fostered.



ENGINEERING

GRADUATE STUDIES

For information on Graduate Studies in Engineering Science see the Graduate section of this calendar.

REGISTRATION AS A PROFESSIONAL ENGINEER

The requirements for registration as a Professional Engineer vary somewhat from province to province. Applicants for registration with the Association of Professional Engineers of Ontario (A.P.E.O.) must have successfully completed a university course in engineering accredited by the Association or have passed qualifying examinations set by the Association. The program in Engineering Science at The University of Western Ontario has been accredited by the Association. In addition, applicants must obtain two years of acceptable engineering experience as Graduates-in-training to qualify for registration.

The Association of Professional Engineers of Ontario is responsible for the administration of the Professional Engineers Act, the control of registration and such things as maintenance of ethical standards of its members in the interest of the general public. The title Professional Engineer, PEng., is employed by members in good standing with the Association.

Registration in other Provinces is subject to similar regulation, the details of which may be obtained from the Professional Engineering Association of the various provinces.

CORE PROGRAM:

PROFESSORS: Bulani, Inculet, Johnson, **ASSOCIATE PROFESSORS**: Baker, Beeckmans, Chess, Duerden, Emmerson, MacDonald, Olson, Peacock, Swartman, Tarasuk, **ASSISTANT PROFESSORS**: Rosati, Svrcek, Watson.

FIRST YEAR PROGRAM

Appl. Math 20	Engineering Mathematics I
Chemistry 20	General Chemistry
E.S. 20	Engineering Graphics
E.S. 21	Engineering Mechanics I
Physics 26	Introductory Modern Physics

Non-Technical Elective

NOTES:

1) 1 hour per week tabled for Engineering Orientation
2) Students may elect to defer E.S. 20 and take it as an extra course in Second Year.
3) Students who have not taken Grade XIII Chemistry must take Chemistry 23 in place of Chemistry 20.

DESCRIPTION OF COURSES

NOTE: E. S. denotes an Engineering Science Course.

E.S. 20. Engineering Graphics. Use of instruments, geometrical constructions, sketching, orthographic projections, sectional views, dimensioning, auxiliary projections, axonometric projection, perspectives, vector analysis, layouts for empirical equations, nomographs and graphical mathematics. Each student must submit a design project, emphasizing an original concept.
1 lecture, 3 problem hours.

E.S. 21. Engineering Mechanics 1. Analysis of force systems and equilibrium conditions with applications to engineering problems involving structures and machines. Dynamics of a particle and of rigid bodies; including kinematics and force energy and momentum methods of solution.
2 lectures, 1 tutorial, 2 problem hours.

Chem. 20. General Chemistry. The fundamental principles of Chemistry, including the kinetic theory and states of matter, the properties of solutions, chemical equilibrium, rate process and energy changes. Experiments in the laboratory are selected to illustrate these principles.
2 lectures, 3 laboratory hours.

Chem. 23. General Chemistry. For students who have not had Grade XIII Chemistry.
3 lectures, 3 laboratory hours.

Appl. Math. 20. Engineering Mathematics 1. Limit of a function, continuity; differentiation and integration of functions of one variable; applications; numerical methods of approximating definite integrals; polar coordinates; parametric equations; infinite series.
3 lectures, 1 tutorial hour.

Physics 26. Introductory Modern Physics. A treatment at the elementary level of the experimental facts of modern physics and the interpretation of these facts in terms of atoms and molecules, electrons and other particles, and quantized energy. Conservation laws are stressed. The necessary concepts from classical physics are reviewed.
2 lectures, 3 laboratory hours.

SECOND YEAR PROGRAM

All Second Year Students

E.S. 20	Engineering Graphics (if not taken previously)
E.S. 203	Heat, Mass and Momentum Transfer
E.S. 205	Electrical Science
E.S. 208	Computer Programming for Engineers
E.S. 209	Materials Science
E.S. 210	Engineering Laboratory
Appl. Math. 270	Engineering Mathematics II

Option A - Chemical & Biochemical Engineering

E.S. 204	Applied Thermodynamics
Chem. 203	Organic Chemistry

Non-Technical Elective to be approved by the Faculty

Option D - Materials Science

E.S. 202	Mechanics of Materials I

and TWO of:

Chemistry 203	Organic Chemistry
Chemistry 214	Elementary Physical Chem.
E.S. 201	Engineering Mechanics II
E.S. 204	Applied Thermodynamics

Option B, C and E - Civil, Electrical and Mechanical.

E.S. 201	Engineering Mechanics II
E.S. 202	Mechanics of Materials I
E.S. 204	Applied Thermodynamics

DESCRIPTION OF COURSES

E.S. 201. Engineering Mechanics II. A continuation of Engineering Science 21. Kinematics and kinetics of plane motion; application of work-energy and impulse-momentum relationships; introduction to vibrations.
2 lectures, 1 tutorial hour.

E.S. 202. Mechanics of Materials I. Stress and strain, elastic and inelastic material idealizations, behaviour of assemblages, analysis of thin-walled pressure vessels, shearing force and bending moment, stresses in beams, deflection of beams, torsion of shafts, buckling of columns.
2 lecture hours.

E.S. 203. Heat, Mass and Momentum Transfer. An introduction to the basic principles of fluid mechanics and of the transport of heat and mass in systems of interest to engineers.
2 lecture hours.

E.S. 204. Thermodynamics. Properties of a pure substance, first law of thermodynamics, processes in open and closed systems, second law of thermodynamics, ideal gases, mixture of ideal gases, and psychiometry, compressors and ideal power cycles.
2 lecture hours.

E.S. 205. Electrical Science. Electrostatics, conductors and semi-conductors, magnetism and electrodynamics, principles of electric-circuit theory, principles of energy conversion, electrical measurements; sinusoids, complex numbers, phasors, transient and steady-state behavior of simple circuits, power and energy, network equations and theorems, polyphase systems; coupled circuits, transformers; Fourier analysis of non-sinusoidal quantities.
3 lecture hours.

E.S. 208. Computer Programming for Engineers. An elementary course in Fortran programming for the IBM 1130.
1 lecture hour, 1 1/2 tutorial hours.

E.S. 209. Materials Science. An outline of the scientific understanding of those properties of materials which are most important in engineering. The dependence of these properties upon the nature, structure and treatment given to materials.
2 lecture hours.

E.S. 210. Engineering Laboratory. Selected Experiments in Engineering Science.
3 laboratory hours.

Chem. 203. Organic Chemistry. (For description see Chemistry section)
2 lecture hours, 3 laboratory hours.

Chem. 214. Elementary Physical Chemistry. (For description see Chemistry section)
3 lecture hours.

Appl. Math. 270. Engineering Mathematics II. Partial differentiation, multiple integrals, infinite series including power series, an introduction to complex variables, elementary ordinary differential equations.
3 lecture hours.

ELECTIVE COURSES

Non-Technical Electives

E.S. 290. Man and His Environment. An interdisciplinary course designed to provide a thorough introduction to all aspects of the study of the environment and environmental problems in a manner which shows their intimate relations with one another.
2 lecture hours, 2 seminar hours.

E.S. 406. Engineering Economics. A critical examination of cost factors and of the procedures available for minimizing costs of industrial processes and plants.
2 lecture hours, Not Offered 73/74.

Technical Electives

E.S. 361. Engineering Aspects of Pollution Control and Abatement. Discussion of major chemical and physical processes and operations applied in pollution control and abatement.
2 lecture hours.

E.S. 461. Environmental Processes and Equipment Design. Design of selected industrial processes and operations specifically applied in pollution and abatement.
Prerequisite: E.S. 361 or permission of the instructor.
2 lecture hours.

CHEMICAL AND BIOCHEMICAL OPTION

Chairman: Professor M.A. Bergougnou, MS Nancy, PhD Minnesota **PROFESSORS**: Bergougnou, Bulani, Johnson, Sullivan, Zajic. **ASSOCIATE PROFESSORS**: Baker, Beeckmans, Kosaric, Shelstad **ASSISTANT PROFESSORS**: Svrcek

Chemical engineering encompasses all activities associated with the conversion of raw materials into unique products through the application of chemistry. This includes the research, development and design of the process and plant and extends to the production, control and sales of the product. The Chemical engineer must have a good knowledge and appreciation of chemical as well as engineering principles. The Third Year Chemical Option extends the work in physical chemistry and heat, mass and momentum transfer started in Second Year. A Unit Operations course and a Process course starts in Third Year and extends into Fourth Year. Electives in the Fourth Year enable a student to study in greater depth biochemistry, microbiology, quantum chemistry, mathematics or selected topics.

The range of employment for chemical engineers is wide. It includes the petrochemical industry, brewing and food industry, pulp and paper industry, mining industry and a variety of jobs in secondary industries.

THIRD YEAR PROGRAM - OPTION A - CHEMICAL AND BIOCHEMICAL ENGINEERING

E.S. 303a	Fluid Mechanics (1st term)
E.S. 307b	Heat Transfer (2nd term)
E.S. 305b	Electronics (2nd term)
E.S. 310	Chemical Engineering Lab. 1
E.S. 311	Unit Operations 1
E.S. 312	Industrial Process Chemistry
Appl. Math. 370	Engineering Mathematics 111
Chem. 304	Physical Chemistry for Engineering Students
Chem. 212	Analytical Chemistry

Non-Technical Elective to be approved by the Faculty.

NOTE: Courses E.S. 303a and E.S. 307b may be replaced with a Technical Elective with the permission of the Chairman of the Chemical and Biochemical Group.

DESCRIPTION OF COURSES

E.S. 303a. Fluid Mechanics. Additional principles of incompressible and compressible fluid flow: dimensional analysis, dynamic similarity, fluid resistance, ideal (potential) flow, frictionless compressible flow; application of basic principles: fluid measurements, flow in closed conduits and open channels, aerodynamics, turbomachinery.
2 lecture hours, first term.

E.S. 305b. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term.

E.S. 307b. Heat Transfer. Principles of heat transmission by conduction, convection and radiation.
2 lecture hours, second term.

E.S. 310. Chemical Engineering Laboratory I. A laboratory course associated with the topics discussed in E.S. 311.
6 laboratory hours.

E.S. 311. Unit Operations I. Principles and applications of equilibrium stage processes.
2 lecture hours.

E.S. 312. Industrial Process Chemistry. A correlative discussion of a number of chemical industries in terms of unit processes, unit operations, physical chemistry, economics, and power.
2 lecture hours, 2 problem hours.

Appl. Math 370. Engineering Mathematics 111. This is a general course in Applied Mathematics for Third Year Engineering students, covering the following topics. First Term: finite differences, difference tables, interpolation, numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, Fourier Series, Fourier Integral, Laplace Transform.
3 lecture hours.

***Chemistry 212. Analytical Chemistry.** (For description see Chemistry section)

2 lecture hours, 3 laboratory hours. Proposed 1973-74.

***Chemistry 304. Physical Chemistry for Engineering students.** (For description see Chemistry section).
3 lecture hours, 1-1/2 laboratory hours. Proposed 1973-74.

FOURTH YEAR PROGRAM - OPTION A

CHEMICAL AND BIOCHEMICAL ENGINEERING

E.S. 400	Project, Report and Seminar
E.S. 408	Engineering Practice
E.S. 410	Chemical Eng. Lab II
E.S. 411	Unit Operation II
E.S. 412	*Chemical Processes and Plant Design*
E.S. 414	Instrumentation and Control
E.S. 415	Chemical Engineering Kinetics

Non-Technical Elective to be approved by the Faculty.

Any full course or the equivalent chosen with the approval of the chairman of the Chemical and Biochemical Engineering Group chosen from Non-Technical Electives, E.S. 300, 400 or 500 courses, or Faculty of Science 3rd or 4th year courses.

DESCRIPTION OF COURSES

E.S. 400. Project, Report and Seminar. Selection and investigation of an engineering problem. Analytical and/or experimental work is carried out by individual students or project groups under the supervision of a faculty member. Progress reports and a final engineering report are prepared; each student must deliver a public lecture.
A student who, in connection with another course, undertakes a project which culminates in the preparation and presentation of a report and which meets all the requirements of E.S. 400, may with the permission of the Chairman of his Group, substitute a technical elective for E.S. 400.
5 hours.

E.S. 408. Engineering Practice. A discussion of the structure and operation of business organizations with emphasis on the following functions and disciplines: financial control, marketing, organizational behavior, production and general management. Cases and business problems are analysed in such a manner as to relate the engineer to his economic and industrial environment. Lectures are also included on other topics including labor, law, professional ethics and practice.
3 lecture hours.

E.S. 410. Chemical Engineering Laboratory II. A combined laboratory associated with the topics discussed in E.S. 411, E.S. 414 and E.S. 415.
3 laboratory hours.

E.S. 411. Unit Operations II. The principles given in E.S. 311 are utilized in the detailed study of stage and differential contacting processes, and of unit operations involving particulate solids.
3 lecture hours.

E.S. 412. Chemical Process and Plant Design. Design of a large-scale commercial process to manufacture a selected chemical. This involves: an evaluation of the market; raw materials and energy requirements; detailed design and costing of the equipment; environmental treatment of effluents; control and computer simulation; start-up and operating procedures; determination of the profitability. A strong emphasis is placed on developing in the student a creative attitude towards problem formulation, innovation and decision making.
2 lecture hours, 4 design hours.

E.S. 413. Selected Topics in Chemical Engineering.
2 lecture hours.

E.S. 414. Instrumentation and Control. Theory and application of automatic control of variables in industrial processes.
2 lecture hours.

E.S. 415. Chemical Engineering Kinetics. Chemical kinetics as applied to the large-scale manufacture of chemicals. An introduction to the factors which affect the design and size of chemical reactors, as well as the conditions under which they are to be operated for maximum efficiency.
2 lecture hours.

E.S. 416. Biochemical Engineering. Principles and operations of biochemical processes. The laboratory associated with this course will be integrated with E.S. 410.
2 lecture hours, 3 lab. hours.

E.S. 417. Catalytic Processes in Modern Industry. Kinetics and mechanisms of heterogeneous catalysis including case studies of several modern catalytic processes in industry.
1 lecture hour.

E.S. 418a. Fluidized Bed Processes. Principles and operations of fluidized bed processes.
2 lecture hours per week for 1 term.

CIVIL OPTION

Chairman: Professor A.G. Davenport, BA, CANTAB, M.A.Sc. Toronto; PhD Bristol, P. Eng.

PROFESSORS: Davenport, Novak, Poucher, Quigley **ASSOCIATE PROFESSORS:** Abu-Sitta, Davis, Dillon, Lo, Peacock **ASSISTANT PROFESSORS:** Harman, Isyumov, Rosati **LECTURERS:** MacKenzie, Janes

Civil engineering has traditionally been associated with the design, operation and construction of canals, docks, railways, roads, bridges, airports, tunnels and industrial as well as commercial and domestic building. All these involve structures or other engineering works to adopt the environment for the needs of man. Within Civil engineering there are several areas of specialization: construction engineering, geotechnical engineering, hydraulic engineering, sanitary engineering, structural engineering, and transportation engineering. There has been a widening application of other fields such as geophysics, geography and biology to Civil technological and sociological problems associated with man's environment, including urban sprawl and air and water pollution. The Third Year Civil option includes structural theory and design as well as courses in materials and geology. The structural theory and design continues into Fourth Year and is complementary to the soil mechanics. Through the electives in Fourth Year it is possible to study in greater depth transportation engineering, structures, the third year civil engineering option - Option B - must enrol for E.S. 324 (Surveying) two weeks prior to the beginning of the first term.

THIRD YEAR PROGRAM - OPTION B - CIVIL ENGINEERING

E.S. 302	Mechanics of Materials II
E.S. 320	Civil Engineering Laboratory
E.S. 321	Structural Theory I
E.S. 322	Structural Design I
Appl. Math 370	Engineering Mathematics III
E.S. 324	Surveying (2 weeks in Fall)
E.S. 303a	Fluid Mechanics (1st term)
Geol. 391a	Geology for Engineers (1st Term)
E.S. 323b	Engineering Fluid Mechanics (2nd Term)
E.S. 327b	Soil Mechanics I (2nd term)

Non-Technical Elective to be approved by the Faculty.

Any two of:

E.S. 306a	Electromechanics (1st term)
E.S. 305b	Electronics (2nd term)
Appl. Math 403a	Applied Statistics (1st term)
Appl. Math 404b	Experiment Design (2nd term)
E.S. 328b	Dynamics of Structures I (2nd term)

DESCRIPTION OF COURSES

E.S. 302. Mechanics of Materials II. A continuation of E.S. 202 to include theory of buckling, elastic theories of failure, variation of shearing stress, deflection due to shear, stresses in thick spheres and cylinders, and energy methods. The laboratory work is designed to elucidate and extend the knowledge gained from lecture material.
2 lecture hours.

E.S. 303a. Fluid Mechanics. Additional principles of incompressible and compressible fluid flow: dimensional analysis, dynamic similarity; fluid resistance, ideal (potential) flow, frictionless compressible flow; application of basic principles: fluid measurements, flow in closed conduits and open channels, aerodynamics, turbomachinery.
2 lecture hours, first term.

E.S. 305b. Electronics. Characteristic behaviour of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term.

E.S. 306a. Electromechanics. Characteristics and applications of dc generators and motors; ac power generation and transmission; ac motors; transformers.
2 lecture hours, first term.

E.S. 320. Civil Engineering Laboratory I. Laboratory supporting all the Engineering Science courses.
6 laboratory hours.

E.S. 321. Structural Theory I. An introduction to the theory of statically determinate and statically indeterminate structures. Emphasis is placed on an understanding of the basic elastic theorems and their application.
2 lecture hours.

E.S. 322. Structural Design I. An introduction to structural engineering design including the use of manufactured and natural materials.
1 lecture hour, 3 lab hours.

E.S. 323b. Engineering Fluid Mechanics. Unsteady flow in closed conduits, waterhammer; analysis of pipe networks; gradually and rapidly varied flow in open channels; wind

loads on buildings; elementary surface hydrology.
2 lecture hours, second term.

E.S. 324. Surveying (two weeks in Fall). The principles of plane surveying and the use of surveying in design and construction. Only students without second year condition examinations are permitted to register for this course. All civil engineering students must satisfactorily complete E.S. 324 before registration for Fourth Year.

E.S. 327b. Soil Mechanics I. Introductory soil mechanics stressing soil classification and laboratory testing including textures, structure, moisture content, void ratio, Atterberg limits, specific gravity, shear strength, sensitivity, permeability and compaction. Principles of particulate mechanics with in-depth analysis of pore-water pressure, seepage forces and the principle of effective stress.
2 lecture hours, 1 1/2 lab hours, second term.

Geol. 391a. Geology for Engineers. Introduction to minerals, rocks, weathering, transportation, deposition and glacial geology. Engineering properties of geologic materials; application of principles of weathering to the deterioration of construction materials; ground water seepage conditions and their influence on slope stability; glacial soils and their importance in engineering practice. Case histories of engineering projects markedly influenced by site geology.
2 lecture, 3 lab hours, first term.

Appl. Math. 370. Engineering Mathematics III. This is a general course in Applied Mathematics for Third Year Engineering students, covering the following topics. First Term: finite differences, difference tables, interpolation, numerical differentiation and integration, numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, Fourier Series, Fourier Integral, Laplace Transform.
3 lecture hours.

Appl. Math. 403a. Applied Statistics. (See the description in the Applied Math Section).
3 hours, first term.

Appl. Math 404b. Experiment Design. (See the description in the Applied Math Section).
3 hours, second term.

***E.S. 328b. Dynamics of Structures I.** Response of simple structural systems to deterministic and stochastic time varying effects. Applications to wind, earthquake blast and machine loads. Estimation of dynamic effects such as fatigue.
2 lecture hours, second term.
Proposed 1973-74.

FOURTH YEAR PROGRAM - OPTION B - CIVIL ENGINEERING

E.S. 400	Project, Report and Seminar
E.S. 408	Engineering Practice
E.S. 421	Structural Theory II
E.S. 422	Structural Design II
E.S. 423a	Engineering Hydraulics (1st term)
E.S. 426	Soil Mechanics
	Civil Engineering Lab II

Non-Technical Elective to be approved by the Faculty.

and

A combination of electives equivalent to 3 one term courses chosen with the approval of the Chairman of the Civil Engineering Group.

It is recommended that the electives be chosen from the following list:

Appl. Math 453	(With the approval of the Instructor)
Appl. Math 470a	Engineering Mathematics IV (1st term)
E.S. 425b	Transportation Engineering (2nd term)
E.S. 427a	Dynamics of Structures (1st term)
E.S. 428b	Selected Topics in Civil Engineering (2nd term)
E.S. 429b	Applied Meteorology & Hydrology (2nd term)

NOTE:

Electives will only be offered provided there is a sufficient number of course registrants.

DESCRIPTION OF COURSES

E.S. 400. Project Report and Seminar. Selection and investigation of an engineering problem. Analytical and/or experimental work is carried out by individual students or project groups under the supervision of a faculty member. Progress reports and a final engineering report are prepared; each student must deliver a public lecture.

A student who, in connection with another course undertakes a project which culminates in the preparation and presentation of a report and which meets all the requirements of E.S. 400, may with the permission of the Chairman of his Group, substitute a technical elective for E.S. 400.

5 hours.

E.S. 408. Engineering Practice. A discussion of the structure and operation of business organizations with emphasis on the following functions and disciplines: financial control, marketing, organizational behavior, production and general management. Cases and business problems are analysed in such a manner as to relate the engineer to his economic and industrial environment. Lectures are also included on other topics including labor, law, professional ethics and practice.

3 lecture hours.

E.S. 421. Structural Theory II. A continuation of E.S. 321 to include elastic behavior and analysis of trusses and frames by matrix methods and moment distribution. Inelastic behavior of beams and frames is considered with concepts of plastic design. Dynamics of structures is discussed together with the approximate estimation of natural frequencies and the dynamic loads due to wind and earthquake. Laboratory periods include testing of structural elements, models and materials and practice in the use of computer programs and computer languages oriented to structural engineering problems.

2 lecture hours.

***E.S. 422. Civil Engineering Design.** A course concerning the design of civil engineering projects and involving the principles of structures, foundations and hydraulics.

2 lecture hours, 2 lab. hours.

Proposed 1973-74.

***E.S. 423a. Engineering Hydraulics.** The fundamentals of hydraulics associated with hydrology, channel flow, sediment transport and flow through pipe networks.

2 lecture hours, first term.

Proposed 1973-74.

***E.S. 425b. Transportation Engineering.** Planning, design and construction of highways and other transportation systems.

2 lecture hours, second term.

Proposed 1973-74.

E.S. 426. Soil Mechanics II. Shear strength, consolidation and earth pressure theories with special reference to the principle of effective stress. Analysis and design of earth embankments, unretained slopes, retaining walls and braced cuts. Analysis and design of footings and pile foundations for a wide variety of soil conditions.
2 lecture hours.

***E.S. 427a. Dynamics of Structures II.** Continuation of E.S. 328b. Application of dynamic and statistical loading descriptions to response of multidegree of freedom systems such as tall buildings, towers, chimneys etc.
2 lecture hours, first term.
Proposed 1973-74.

E.S. 428b. Selected Topics in Civil Engineering.
2 lecture hours, second term.

***E.S. 429b. Applied Meteorology and Hydrology.** Climatic and meteorological characteristics of rain, snow, wind temperature and their statistical despription. Diffusion of pollutants; hydrology.
2 lecture hours, second term.
Proposed 1973-74.

Civil Engineering Lab II A combined lab period associated with year IV Civil Engineering courses.
6 laboratory hours.

ELECTRICAL OPTION

CHAIRMAN: Professor I. I. Inculet, Dipl. Ing. Bucuresti; M.Sc, Laval, P. Eng.
PROFESSORS: Inculet, Lauchland **ASSOCIATE PROFESSORS**: Bonnema, Castle, Chess **ASSISTANT PROFESSORS**: Livingstone, Sherebrin, Watson.

Electrical engineering is based on the economic application and use of the wide range of phenomena associated with the electron, one of the fundamental particles of nature. In many respects, man's ability to control electrons and to predict their behaviour has played a central role in the development of technology and of today's standard of living. Electrical energy is the most flexible and versatile form of energy known at the present time. Electrical engineering is the science and art of designing, constructing, and operating systems by which (a) energy is converted from some form to the electrical form, (b) electrical energy is transmitted, distributed, and controlled, and (c) electrical energy is converted to some other form for utilization.

Two of man's greatest desires are to substitute machines for his muscles and to establish communication. Electrical engineering is concerned with the satisfaction of these two desires. The conversion, transmission, and reconversion of energy in a large electric system is a good example of how the first desire, the substitution of machines for human muscles and the means of turning the wheels of industry, is satisfied. In such a system, two of the major problems are the efficiency and reliability of conversion and transmission. Electrical engineers satisfy the second desire by establishing communication in many ways, such as; telephone, radio, data transmission, radar, television, computers, control systems.

Energy systems and information systems are never independent; energy systems require information and information systems require energy. In addition, no system is purely electrical. As a result, electrical engineers must work closely with other engineers, with scientists and technologists, and with businessmen.

THIRD YEAR PROGRAM—OPTION C—ELECTRICAL ENGINEERING

E.S. 451	Electronic Structure and Properties of Materials
E.S. 330	Electrical Engineering Laboratory 1
E.S. 331	Electric Circuits
E.S. 332	Electronic Circuit Analysis
E.S. 333	Electromagnetic Field Theory
E.S. 334	Electrical Energy Conversion
Appl. Math 370	Engineering Mathematics 111

Non-Technical Elective to be approved by the Faculty.

DESCRIPTION OF COURSES

E.S. 330. Electrical Engineering Laboratory 1. Laboratory supporting all the Engineering Science courses.
8 laboratory hours.

E.S. 331. Electric Circuits. Analysis of linear networks with the emphasis on general network equations, the complex frequency plane, one and two port networks. Fourier series, Fourier transform and Laplace transform applied to linear circuits. Introduction to non-linear network analysis.
3 lecture hours.

E.S. 332. Electronic Circuit Analysis. Operation and application of electronic, solid state devices. Stability, biasing of transistors. Gain-frequency response of amplifiers. Application of operational amplifiers. Oscillators, power supplies, regulators.
2 lecture hours.

E.S. 333. Electromagnetic Field Theory. A vector treatment of the theory of static and dynamic electric and magnetic fields, leading to Maxwell's equations and solutions of Maxwell's equations to specific problems. Boundary value solutions using vector calculus and partial differential equations.
2 lecture hours.

E.S. 334. Electromechanics. Principles of electromechanical energy conversion and their applications in direct-current and alternating current machines.
2 lecture hours.

Appl. Math 370. Engineering Mathematics 111. This is a general course in Applied Mathematics for Third Year Engineering students, covering the following topics. First Term: finite differences, difference tables, interpolation, numerical differentiation and integration, numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, Fourier series, Fourier Intregal, Laplace Transform.
3 lecture hours.

E.S. 451. Electronic Structure and Properties of Materials. Quantum theory, electronic structure, Brillouin zones, electrons in crystals, conductivity, insulation and semi-conduction, electrical and thermal conductivity, resistance of alloys, magnetic properties, domains, semiconductors, rectification, transistors, optical properties, lasers, dielectrics, piezoelectricity, and superconductivity.
3 lecture hours.

FOURTH YEAR PROGRAM—OPTION C—ELECTRICAL ENGINEERING

E.S. 400	Project, Report and Seminar
E.S. 408	Engineering Practice
E.S. 430	Electrical Engineering Lab. 11
E.S. 431	Digital Logic Systems
E.S. 433	Electric Power Systems
E.S. 436	Control Systems
E.S. 432a	Radiation and Propagation (1st term)
E.S. 434a	Electromechanical Energy Conversion (1st term)
E.S. 435a	High Frequency Electronics (1st term)
E.S. 432b	Microwave Systems (2nd term)
E.S. 434b	Electrical Energy Conversion (2nd term)
E.S. 435b	Communication Theory (2nd term)

Non-Technical Elective to be approved by the Faculty.

DESCRIPTION OF COURSES

E.S. 400. Project, Report and Seminar. Selection and investigation of an engineering problem. Analytical and/or experimental work is carried out by individual students or project groups under the supervision of a faculty member. Progress reports and a final engineering report are prepared; each student must deliver a public lecture.
A student who, in connection with another course, undertakes a project which culminates in the preparation and presentation of a report and which meets all the requirements of E.S. 400, may with the permission of the Chairman of his Group substitute a technical elective for E.S. 400.
5 hours.

E.S. 408. Engineering Practice. A discussion of the structure and operation of business organizations with emphasis on the following functions and disciplines: financial control, marketing, organizational behavior, production and general management. Cases and business problems are analysed in such a manner as to relate the engineer to his economic and industrial environment. Lectures are also included on other topics including labor, law professional ethics and practice.
3 lecture hours.

E.S. 430. Electrical Engineering Laboratory 11. Laboratory supporting all the Engineering Science courses.
6 laboratory hours.

E.S. 431. Digital Logic Systems. Theory of Boolean algebra, switching circuits, Venn diagrams; Karnaugh maps; logic and memory systems, design of combinational and sequential switching machines; electronic switching circuits; basic design of digital computors.
2 lecture hours.

E.S. 432a. Radiation and Propagation. Plane EM wave propagation, wave polarization, antenna radiation, parallel plate wave guide, reciprocity theorem, scattering, propagation through ionosphere.
2 lecture hours, 1st term.

E.S. 432b. Microwave Systems. Introduction to the theory of the principal types of microwave devices and transmission, klystrons, magnetrons, travelling wave tubes, Elementary principles of varactors, lasers, masers and parametric amplifiers.
2 lecture hours, 2nd term.

E.S. 433. Electric Power Systems. Parameters and performance of transmission lines, transformers, and machines; performance of transmission and distribution systems, symmetrical components, voltages and currents in systems under fault conditions; introduction to power-system stability.
2 lecture hours.

E.S. 434a. Electromechanical Energy. Conversion Theory of AC machines, electric transients in AC machines, dynamics of electro mechanical systems.
2 lecture hours, 1st term.

E.S. 434b. Electrical Energy Conversion. Other methods of energy conversion will be considered, fuel cells, thermoelectric generators, photoelectric generators, M.H.D., etc.
2 lecture hours, 2nd term.

E.S. 435a. High Frequency Electronics. Low-pass and band-pass amplifiers, sinusoidal and non-linear oscillators. Principles of amplitude, frequency and phase modulation; modulators and demodulators; negative feedback; large signal amplifiers, microwave oscillators and amplifiers.
2 lecture hours, 1st term.

E.S. 435b. Communication Theory. Introduction to communication systems and statistical communication theory. Deterministic and random signals; linear systems; spectral analysis; introduction to information theory.
2 lecture hours, 2nd term.

E.S. 436. Control Systems. Analysis of feedback control systems using both root locus and frequency response techniques; includes the application of stability criteria; gain adjustment and compensation to meet performance specifications.
2 lecture hours.

MATERIALS SCIENCE OPTION

CHAIRMAN: Professor J.D. Brown, BSc, McMaster; Ph.D Maryland
PROFESSORS: Geach **ASSOCIATE PROFESSORS**: Brown, Duerden, Roy, Sheasby.

Scientific understanding of the materials used by engineers has grown very rapidly recently. Its application in engineering is now widespread and becoming the occupation of engineers who specialize in the area. A great variety of new types of materials is coming into engineering application. New methods of fabricating and using materials are constantly developed and applied. Advances are also taking place in the traditional engineering media such as concrete, steel and timber.

The materials scientist works to achieve such progress and applies it to serve society. He must appreciate the progress in those areas of chemistry, crystallography, mechanics, physics, metallurgy, economics and the other sciences which he can employ and keep in touch with developments in these areas. He should be aware of new materials as they are developed and appreciate when use of them can help. But, he must keep in touch with traditional materials and note when developments make it wise to use them in further fields or in altered ways. When materials do not exist, he applies his science in efforts to develop them. The methods of fabricating materials are similarly his concern. Means of testing and controlling engineering materials are now determined by materials science.

Materials science has in recent years contributed to the major developments in creep resistant high temperature materials; in engineering with polymers and in semiconductors. Superplasticity conditions under which certain alloys elongate several hundred percent before failure, and fibres of metals or ceramics with many times the normal strength of these materials are typical of the more unusual areas in which practical advances are to be expected. At the same time developments in conventional materials and in the methods of using them will occur largely because of the work of materials scientists and will prove of even greater practical importance.

THIRD YEAR PROGRAM - OPTION D - MATERIALS SCIENCE

E.S. 305b	Electronics (2nd term)
E.S. 306a	Electromechanics (1st term)
E.S. 350	Materials Science Laboratory I
E.S. 352	Phase Equilibria and Transformations
E.S. 353	Mechanical Properties of Materials
E.S. 356a	Crystallography (1st term)
E.S. 357b	Structure of Real Materials (2nd term)
E.S. 452	Surfaces and Interfaces
Appl. Math 370	Engineering Mathematics III

Non-Technical Elective to be approved by the Faculty

ONE OF:

E.S. 201	Engineering Mechanics II
Chem. 214	Elementary Physical Chemistry (Must be taken if not taken previously)

Other Technical Elective to be approved by the Chairman of the Materials Science Group

DESCRIPTION OF COURSES

E.S. 305b. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators, and measuring instruments.
2 lecture hours, second term.

E.S. 306a. Electromechanics. Characteristics and application of dc generators and motors; ac power generation and transmission; ac motors; transformers.
2 lecture hours, first term.

E.S. 350. Materials Science Laboratory I. A laboratory course associated with the lecture courses.
6 laboratory hours.

E.S. 352. Phase Equilibria and Transformations. Phase equilibria in engineering materials. Transformation, precipitation effects and their influence. Matastable and non-equilibrium states. The application of this knowledge to the treatment and control of engineering materials.
2 lecture hours.

E.S. 353. Mechanical Properties of Materials. Elasticity, plasticity and fracture. Mechanical testing. The working and forming of materials.
2 lecture hours.

E.S. 356a. Crystallography. Crystal classes, symmetry, point groups, space groups, X-ray methods, crystal structure determination.
2 lecture hours, first term.

E.S. 357b. Structure of Real Materials. Structure of the elements, defects in crystals, structure of alloys, inorganic compounds, glasses, polymers, microstructures, macrostructures. 2 lecture hours, second term.

E.S. 452. Surfaces and Interfaces. Thermodynamics of surfaces, structure of surfaces, surface energy, absorption, adhesion, surface area measurement. Sintering mechanisms and the sintering process. Friction, wear, lubrication, bearing materials. 1 lecture hour.

Appl. Math 370. Engineering Mathematics III. This is a general course in Applied Mathematics for Third Year Engineering students, covering the following topics. First Term: finite differences, difference tables, interpolation, numerical differentiation and interpolation, numerical differentiation and integration, numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, Fourier series, Fourier Integral, Laplace Transform. 3 lecture hours.

E.S. 201. Engineering Mechanics II. A continuation of Engineering Science 21. Kinematics and kinetics of plane motion; application of work-energy and impluse-momentum relationships, introduction to vibrations. 2 lecture, 1 tutorial.

Chem. 214. Elementary Physical Chemistry. (See Chemistry section for description). 3 lecture hours.

FOURTH YEAR PROGRAM - OPTION D - MATERIALS SCIENCE

E.S. 400	Project, Report and Seminar
E.S. 408	Engineering Practice
E.S. 450	Materials Science Lab. II
E.S. 451	Electronic Structure and Properties of Materials
E.S. 358a	Thermodynamics (1st term)
E.S. 359b	Oxidation and Corrosion (2nd term)
E.S. 455	Applications of Materials Science
E.S. 456a	Properties of Engineering Materials (1st term)
E.S. 457a	Transformation (1st term)
E.S. 458b	Structure and Engineering Properties (2nd term)
E.S. 459b	Transformation Structures (2nd term)

Non-Technical Elective to be approved by the Faculty

DESCRIPTION OF COURSES

E.S. 400. Project, Report and Seminar. Selection and investigation of an engineering problem. Analytical and/or experimental work is carried out by individual students or project groups under the supervision of a faculty member. Progress reports and a final engineering report are prepared; each student must deliver a public lecture. A student who in connection with another course, undertakes a project which culminates in the preparation and presentation of a report and which meets all the requirements of E.S. 400, may with the permission of the Chairman of his Group substitute a technical elective for E.S. 400. 5 hours.

E.S. 408. Engineering Practice. A discussion of the structure and operation of business organizations with emphasis on the following functions and disciplines: financial control, marketing, organizational behavior, production and general management. Cases and business problems are analyzed in such a manner as to relate the engineer to his economic and industrial environment. Lectures are also included on other topics including labor, law, professional ethics and practice.
3 lecture hours.

E.S. 450. Materials Science Laboratory II. A laboratory course associated with E.S. 451, 456, 457, 458 and 459.
4 1/2 laboratory hours.

E.S. 451. Electronic Structure and Properties of Materials. Quantum theory, electronic structure, bonding, Brillouin zones, electrons in crystals, conductivity, insulation and semiconduction, electrical and thermal conductivity, resistance of alloys, magnetic properties, domains, semiconductors, rectification, transistors, optical properties, lasers, dielectrics, piezoelectricity, and superconductivity.
3 lecture hours.

E.S. 358a. Thermodynamics. The laws of thermodynamics, the production of work from heat, statistical interpretation of entropy, free energy of binary systems, defects in crystals.
2 lecture hours, first term.

E.S. 359b. Oxidation and Corrosion. Reaction rate theory, oxidation rate curves, techniques, oxidation behavior of metals and alloys, alloys for high temperature service, cladding. Electrochemistry. Pourbaix diagrams, E-1 corrosion, corrosion protection, diagrams, types of electropolishing.
2 lecture hours, second term.

E.S. 455. Applications of Materials Science. The application of materials science in engineering illustrated by examples from the production of materials and their employment in various areas of engineering.
2 lecture hours.

E.S. 456a. Properties of Engineering Materials. Improvement or modification of the following properties of engineering materials; Young's modulus, damping capacity, elastic limit and tensile strength, resistance to brittle fracture, resistance to stress corrosion, fatigue and creep strength.
2 lecture hours, first term.

E.S. 457a. Transformations. This course covers the basic kinetic theory of transformations in materials and deals with the concepts of nucleation and growth. Activation energies, rates of reaction in ideal cases.
2 lecture hours, first term.

E.S. 458b. Structure and Engineering Properties. Properties of lattice imperfections in metallic, ionic and covalent solids. Generation and physical observation of point and line defects. Irradiation damage.
2 lecture hours, second term.

E.S. 459b. Transformation Structures. This course applies the theory of transformations to actual situations, solidification, precipitation, polymorphism, order-disorder, vitrification, etc. The structural aspects of transformations are also considered, e.g., effect of dislocations, imperfections, boundaries, etc.
2 lecture hours, second term.

MECHANICAL OPTION

CHAIRMAN: Professor E.S. Nowak, BEng. McGill; MSME, Ph.D. Purdue, P. Eng **PROFESSORS**: Foreman, Nowak **ASSOCIATE PROFESSORS**: Emmerson, MacDonald, Olson, Stewart, Swartman, Tarasuk **ASSISTANT PROFESSORS**: Base, Dickinson

All fields of engineering have common patterns, and the mechanical engineer is likely to be concerned with one of the following functions: research and development, design and application, production, construction, operation and maintanance, marketing and distribution, consulting, teaching. Each of these can entail management or supervisory responsibilities, in which the mechanical engineer can become involved with problems of policy, planning, finance, organization, public relations and personnel administration. These functions will be found in varying degrees in the many subdivisions of mechanical engineering.

Power Generation: mechanical engineers are concerned with the structural design of thermal and hydro-electric power plants, steam turbines, gas turbines, internal combustion engines, ram-jet and rocket engines.

Manufacturing: Mechanical engineers are involved in the design, development and economic production of a product; they are often concerned with the design of the factory and machinery to produce and package the product.

Transportation: the design, manufacture and maintenance of various conveyances such as automobiles, trucks, buses, locomotives, rolling stock, construction vehicles, marine vessels, aircraft, elevators and escalators, together with the power equipment required in these conveyances, are the province of the mechanical engineer. Also, his responsibility often includes the design, installation and operation of equipment which is used in the transportation and distribution of water, gas and oil for industry and the municipalities.

Space Engineering: Aircraft and missiles are the concern of aerodynamic specialists; who often have a mechanical engineering background. They require an advanced knowledge of the aerodynamics of flight and the engineering principles involved in the design and instrumentation of aircraft and missile structures and of power plants.

Power Services: mechanical engineers are involved in the design, manufacture, installation and operation of a wide variety of equipment for industrial and domestic use in such fields as heating, ventilating, airconditioning, refrigeration and automatic controls.

Nuclear Energy: the mechanical engineer's training prepares him for many diverse activities associated with nuclear engineering; these range from the thermal and structural design of reactors and their special components to highly specialized equipment used in radiation medicine and radiography.

Bioengineering: a challenging area of interdisciplinary study combines engineering with the biological and medical sciences in the design and development of equipment and instrumentation in hospitals and medical laboratories, research in physiology, biophysics, orthopaedics, studies in the control of air and water pollution, and noise abatement.

The mechanical engineer, like all engineers, must work in close harmony with the scientists, the technician and the draftsman, as well as with individuals whose disciplines are often quite remote from engineering. He must, above all, have an insatiable curiosity about why things work as well as how they work.

THIRD YEAR PROGRAM-OPTION E-MECHANICAL ENGINEERING

E.S. 302	Mechanics of Materials II
E.S. 304	Thermodynamics
E.S. 340	Mechanical Engineering Lab. 1
E.S. 341a	Kinematics and Dynamics of Machines
E.S. 341b	Introduction to Mechanical Design
E.S. 347	Manufacturing Processes
Appl. Math. 370	Engineering Mathematics III
E.S. 303a	Fluid Mechanics (1st term)
E.S. 306a	Electromechanics (1st term)
E.S. 305b	Electronics (2nd term)
E.S. 307b	Heat Transfer (2nd term)

Non-Technical Elective to be approved by the Faculty

DESCRIPTION OF COURSES

E.S. 302. Mechanics of Materials II. A continuation of E.S. 202 to include theory of buckling, elastic theories of failure, variation of shearing stress, deflection due to shear, stresses in thick spheres and cylinders, and energy methods. The laboratory work is designed to elucidate and extend the knowledge gained from lecture material.
2 lecture hours.

E.S. 303a. Fluid Mechanics. Additional principles of incompressible and compressible fluid flow; dimensional analysis, dynamic similarity, fluid resistance, ideal (potential) flow, frictionless compressible flow; application of basic principles: fluid measurements, flow in closed conduits and open channels, aerodynamics, turbomachinery.
2 lecture hours, first term.

E.S. 304. Thermodynamics. Properties of a pure substance, first law of thermodynamics, processes in open and closed systems, second law of thermodynamics, ideal gases, mixture of ideal gases, and psychrometry, compressors and ideal power cycles, introduction to heat transfer.
2 lecture hours.

E.S. 305b. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term.

E.S. 306a. Electromechanics. Characteristics and application of dc generators and motors; ac power generation and transmission; ac motors, transformers.
2 lecture hours, first term.

E.S. 307b. Heat Transfer. Principles of heat transmission by conduction, convection and radiation.
2 lecture hours, second term.

E.S. 340. Mechanical Engineering Laboratory I. This course supports and supplements those courses which are given in the Third Year mechanical option. Students work in small groups on engineering experiments, utilizing equipment in the thermal power, heat transfer, fluid mechanics, mechanics of materials, electrical, chemical, experimental analysis and material science laboratories.
9 laboratory hours.

E.S. 341a. Kinematics and Dynamics of Machines. Displacement, velocity and acceleration analysis of linkage mechanisms, static and inertia force analysis of mechanisms with particular application to reciprocating engine mechanical analysis; determination of indicated torque, horsepower and speed regulation; balancing of rotating and reciprocating masses; vibration analysis of single degree of freedom systems; gyroscopic forces.
3 lecture hours, first term.

E.S. 341b. Introduction to Mechanical Design. Analysis and principles of design of cams, linkages, gears, geartrains, belt drives, clutches, couplings, brakes, shafts and bearing.
3 lecture hours, second term.

E.S. 347. Manufacturing Processes. The relationships between design, materials selection and process choice in general manufacture as they apply to modern technology.
2 lecture hours.

Appl. Math 370. Engineering Mathematics III. This is a general course in Applied Mathematics for Third Year Engineering students, covering the following topics. First Term: finite differences, difference tables, interpolation, numerical differentiation and integration, numerical differentiation and integration numerical solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, Fourier Series, Fourier Integral, Laplace Transform.
3 lecture hours.

FOURTH YEAR PROGRAM - OPTION E - MECHANICAL ENGINEERING

E.S. 400	Project, Report and Seminar
E.S. 408	Engineering Practice
E.S. 414	Instrumentation and Controls
E.S. 440	Mechanical Engineering Laboratory II
E.S. 444	*Experimental Measurement and Analysis*

Non-Technical elective to be approved by the Faculty

The equivalent of **three full courses** selected with the approval of the Chairman of the Mechanical Engineering Option from the courses listed below: *

E.S. 441a	Design of Machine Components (1st term)
E.S. 441b	Creative Design (2nd term)
E.S. 442a	Convection Heat Transfer (1st term)
E.S. 442b	Applied Heat Transfer (2nd term)
E.S. 443a	Energy Conversion (1st term)
E.S. 443b	Heating, Ventilating, Air Conditioning (2nd term)
E.S. 445a	Gas Dynamics (1st term)
E.S. 445b	Fluid Machinery (2nd term)
E.S. 446a	Mechanical Vibrations (1st term)
E.S. 446b	Vibration and Shock (2nd term)
E.S. 449a	Acoustics and Noise (1st term)
E.S. 449b	Engineering and Architectural Acoustics (2nd term)
E.S. 353	Mechanical Properties of Materials
E.S. 453b	Corrosion and Wear (2nd term)
Appl. Math 403a	Applied Statistics (1st term)
Appl. Math 470a	Engineering Mathematics (1st term)
C.S. 460a	Computer Simulation (1st term)
C.S. 461b	Simulation Laboratory (2nd term)

Any course offered for the other Engineering Science options, including a graduate course† with the approval of the Instructor.

* Elective courses will only be offered provided that there is a sufficient number of course registrants.

† Only those students with a B average (70% or more) in Year III will be considered as eligible to take a graduate course as an elective. Approval is based upon the course elected, the prerequisite required, and the potential of the student to cope with the course demands.

DESCRIPTION OF COURSES

E.S. 400. Project, Report and Seminar. Selection and investigation of an engineering problem. Analytical and/or experimental work is carried out by individual students of project groups under the supervision of a faculty member. Progress reports and a final engineering report are prepared; each student must deliver a public lecture.
A student who, in connection with another course, undertakes a project which culminates in the preparation and presentation of a report and which meets all the requirements of E.S. 400, may with the permission of the Chairman of his Group, substitute a technical elective for E.S. 400.
5 hours

E.S. 408. Engineering Practice. A discussion of the structure and operation of business organizations with emphasis on the following functions and disciplines: financial control, marketing, organizational behavior, production and general management. Cases and business problems are analyzed in such a manner as to relate the engineer to his economic and industrial environment. Lectures are also included on other topics including labor, law, professional ethics and practice.
3 lecture hours.

E.S. 414. Instrumentation and Control. Theory and application of automatic control of variables in industrial processes.
2 lecture hours.

E.S. 440. Mechanical Engineering Laboratory II. This course supports and supplements the work given in 4th year lectures. Students work in small groups on engineering experiments and projects, using equipment in the thermodynamics, fluid mechanics, experimental analysis and computer laboratories.
6 laboratory hours.

E.S. 441a. Design of Machine Components. Functional, physical and economic selection and design of machine components such as couplings, clutches, brakes, power screws, fasteners, gears, shafts, bearings, springs, connecting rods, pressure vessels; vibration in mechanical design; reliability; hydrodynamic lubrication.
1 lecture hour, 2 laboratory hours, 1st term.

E.S. 441b. Creative Design. Analysis and design problems in which project synthesis and system engineering are emphasized, typical design case studies.
1 lecture hour, 2 lab. hours, 2nd term.

E.S. 442a. Convection Heat Transfer. Development of the basic equations of continuity, momentum, and energy as applied to convection in forced and natural flow systems, exact solutions, integral solutions, turbulent flow and Reynolds analogy, empirical correlations and simplified equations.
2 lecture hours, first term.

E. S. 442b. Applied Heat Transfer. A major portion of the time will be devoted to radiation heat transfer which will include physics radiation, grey body radiation, Bevans-Dunkle method and gas radiation. Other topics will include condensation heat transfer, boiling, heat exchangers, solar radiation and design of electrical analogue systems.
2 lecture hours, second term.

E.S. 443a. Energy Conversion. Theory and engineering aspects of: thermoelectric energy systems, fossil fuel power plants, nuclear power plants. Internal and external combustion engines; spark ignition engines, gas turbines, rockets and steam engines. An introduction will be given to fuel cells, plasma generators, thermionic energy conversion systems and solar cells.
2 lecture hours, first term.

E.S. 443b. Heating, Ventilating and Air Conditioning. The psychrometry of air conditioning processes, comfort and inside design conditions, climate and outside design conditions, heat gains from solar and other sources, cooling load and heating load calculations, ventilation and filtration.
2 lecture hours, second term.

E.S. 444. Experimental Measurement and Analysis. Selected topics in experimental analysis: photoelasticity, photostress, transducers, instrumentation techniques and evaluation in the measurement of variables such as strain, pressure, temperature, vibration flow and sound.
2 lecture hours.

E.S. 445a. Gas Dynamics. Isentropic flow through nozzles, adiabatic and isothermal flow with friction, diabatic flow with heat addition, normal and oblique shock waves, analysis of ramjet and rocket engines.
2 lecture hours, first term.

E.S. 445b. Fluid Machinery. Fluid turbo-machinery theory, performance characteristics of centrifugal and axial flow fans, compressors, pumps and turbines, fluid vibrations and sound, water hammer, introduction to fluid power controls and fluid amplifiers.
2 lecture hours, second term.

E.S. 446a. Mechanical Vibrations. Single and multi-degree of freedom systems; torsional vibrations; strings, rods and beams; energy methods; whirling of shafts.
2 lecture hours, first term.

E.S. 446b. Mechanical Vibrations and Shock. Hamilton's principle; Lagrange's equation; continuous systems; normal modes; transfer matrices; propagation of shock and stress waves through material.
2 lecture hours, second term.

E.S. 449a. Acoustics and Noise. A critical review of one and three dimensional wave equations and their solution. Sound intensity, pressure, power, absorption, attenuation and reflection. The Helmholtz resonator, closed and open tubes, filters. Characteristics of the human ear, measurement of sound and noise, sources and methods of control for noise.
2 lecture hours, first term.

E.S. 449b. Engineering and Architectural Acoustics. Standing waves, modes in rooms and ducts. The growth and decay of sound intensity in enclosures, reverberation, its influence on room acoustics and its control. Airborne sound transmission, partitions, slits, openings, barriers, reflectors and absorbers. Structural borne sound transmission, impact sound transmission.
2 lecture hours, second term.

E.S. 453b. Corrosion and Wear. Corrosion principles, types of corrosion, corrosion protection; friction, wear, lubrication, bearing materials.
2 lecture hours, second term.

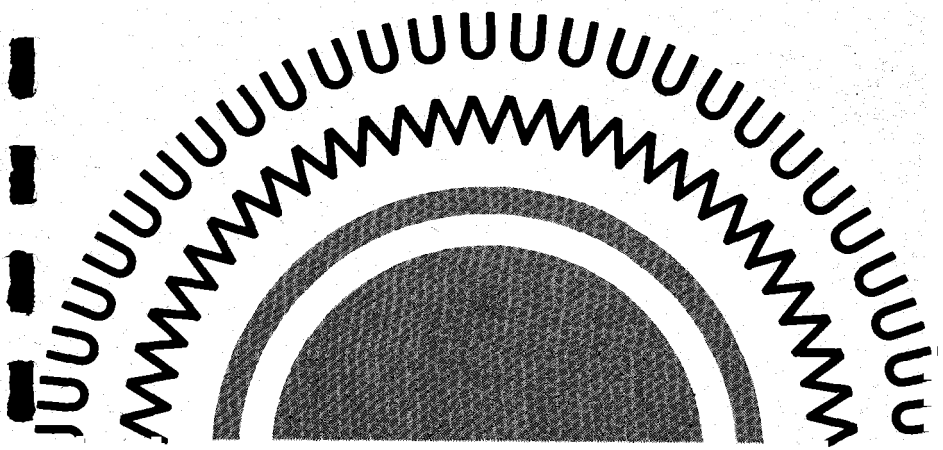
Appl. Math 403a. See Applied Math section for this description.
3 lecture hours, first term.

Appl. Math 470a. See Applied Math section for this description.
3 lecture hours, first term.

Comp. Sc. 460a. Computer Simulation. See Computer Science section for description.
3 lecture hours, 1 laboratory hour, first term.

Comp. Sc. 461b. Simulation Laboratory. See Computer Science section for description.
2 lecture hours, 2 laboratory hours, second term.

Faculty of Law



ACADEMIC CALENDAR

1973

September 4, Tuesday	9:30 a.m. General assembly of first year students. Lectures begin for second and third year students.
December 7, Friday	First semester classes end.
December 10, Monday	Second and third year examinations begin.
December 21, Friday	First semester ends.

1974

January 7, Monday	Second semester begins.
April 19, Friday	Second semester classes end.
April 22, Monday	Examinations begin.
May 4, Saturday	Second semester ends.

Note: April 1 - last day for receiving applications for Faculty of Law for 1973-74.

* THE ABOVE DATES ARE SUBJECT TO MODIFICATION.

Faculty of Law

The University of Western Ontario, 1151 Richmond Street, London, Ontario N6A 3K7.
Dean's Office, Room 100, 679-3346
Admissions Office, Room 13, 679-3439

Dean:
R. S. Mackay, QC, LLM, Columbia; of Osgoode Hall (Barrister-at-Law).
Assistant Dean:
S. I. Bushnell, BSA, Toronto; LLB, Dalhousie; LLM, Osgoode Hall.
Administrative Officer and Assistant to the Dean:
Margaret McNulty.
Administrative Officer: Admissions
Patricia Black.
Librarian:
Margaret Banks, MA, PhD.

PROFESSORS: Brandt, Hickling, Krever, Mackay, Palmer, Rendall. ASSOCIATE PROFESSORS: Arnold, Barton, Oosterhoff, Rayner, Samuels, Sinha. ASSISTANT PROFESSORS: Balogh, Bushnell, Elder, Judson, McLaren, McLeod, Solomon, Usprich, Vivian. SESSIONAL PROFESSORS: Carson, Cherniak, Hinnegan. SESSIONAL LECTURERS: Gordon, McClean, Pollock, Poole, Ritchie, Schwartz.



FOUNDATION OF THE LAW SCHOOL

In 1885, the year in which the Faculty of Arts was forced to close, the idea of founding a law school was first publicly mooted. At this time there were in the London district a number of young men studying for admission to the Bar who obviously had much to gain in attending a local course of lectures designed for future practitioners. In November, 1885, the Middlesex Law Association took the initiative and approached the Senate of the University with a proposal for affiliation. This was quickly approved and in the following months the Senate passed a statute establishing the Faculty of Law of Western University. In an amended form this instrument won legislative approval on August 3rd, 1886.

The first curriculum was framed to embrace all subjects in which examinations were required by the Law Society of Upper Canada for admission to the Bar. It was expected that the examinations of the London Law School would be accepted in lieu of those of the Law Society as soon as the school had become formally established. The course of instruction included also the subjects required by other universities in Ontario for the degree of Bachelor of Laws so that students of the school could proceed on an equal footing to the degree of LLB in Western University.

A number of prominent London lawyers offered their services as lecturers, enabling the school to begin operation immediately. The faculty included: William Elliott, Senior Judge of the County of Middlesex, Dean; W. H. Bartram, Registrar; W. W. Fitzgerald, Bursar; and the following lecturers: J. F. Flock; N. D. Fraser; George C. Gibbons; I. F. Hellmuth, LLB; James Magee; W. R. Meredity, QC, LLB, MPP; The Honourable David Mills, LLB, MP; and W. P. R. Street, QC, LLB.

Thirty-eight students were registered in the first year. The inaugural lecture was delivered in the Court House on the evening of December 4th, 1885, by Judge Frederick Davis. The regular lectures which were held on Monday, Wednesday and Friday afternoons at 5 o'clock went on through the winter of 1885-86. The Law Society of Upper Canada, however, refused to accept the examination of the London Law School as equivalent to its own. Consequently, the enthusiasm of the students began to wane and one by one they dropped out of the course until only three were left to write the first examinations in June.

In September, 1886, the school opened for a second season, this time with a registration of only seventeen. Lectures continued as before but the interest of the students was again flagging. The number in attendance continued to drop until February 12th when all further lectures were cancelled and the Law School, like the Arts Department, ceased to function. Some members of the Middlesex Law Association still hoped to revive it but this possibility was precluded when in 1889 the Law Society of Upper Canada required all students of law in Ontario to attend Osgoode Hall for three years.

However, between 1915 and 1954, under various departments in the Faculty of Arts, courses of instruction were given in legal subjects leading to a degree of Bachelor of Laws (LLB). In 1920 a Department of Law was created under F. E. Perrin, BA, who continued to lecture in that Department until his appointment to the Bench in 1934.

In 1930 he was joined by C. C. Carrothers, BA, LLB, and the latter lectured until the termination of the Department in 1954.

As a matter of interest, the requirements for the LLB during this period are typified by the general catalogue for the University for 1930-31, which provided as follows: "The Degree of Bachelor of Laws will be conferred on candidates who present the following academic standing, and pay the fees pertaining to the course:

(a) An Honour Degree in the Department of Economic and Political Science from the University of Western Ontario or some other acceptable university or college.

(b) A certificate of graduation from Osgoode Hall and of admission to the practice of law in the Province of Ontario or equivalent certificates.

(c) Examinations taken on a course of reading in the following: Domestic Relations, Medical Jurisprudence, Theory of Obligations, Contracts.

(d) An approved thesis, on an assigned subject."

Nevertheless, between 1889 and 1949 the Law Society continued to maintain a monopoly over legal education through the medium of its own school at Osgoode Hall. On February 15th, 1957, after years of protracted controversy, the Law Society of Upper Canada provided for the equal participation of approved university law schools in the academic preparation for admission to the Ontario Bar. It also recognized the need for graduation upon completion of a full-time academic course of not less than three years, as a prerequisite to the final stages of professional training.

In 1958, following this important change of policy in legal education, the Senate of The University of Western Ontario decided to re-establish the Faculty of Law and on May 1st, 1959, The Honourable Ivan C. Rand, formerly a Puisne Judge of the Supreme Court of Canada, was appointed its Dean. On Thursday, September 17th, 1959, after an interval of seventy-two years, regular classes resumed in the law school of The University of Western Ontario, with a first-year enrolment of thirty-five students selected from a large number of applicants.

By the retirement of Dean Rand in June 1964, first-year enrolment had doubled. Both the Faculty of Law itself and its course of instruction are officially approved by the Law Society of Upper Canada.

During the first two years instruction in the Faculty of Law was carried on in a wing of the new Engineering Science Building. In May 1961 construction of the Josephine Spencer Niblett Building was completed and in the summer months following the Faculty moved into its permanent home. Built in the modified collegiate Gothic tradition, this handsome building takes a place of honor on one of the most beautiful campuses in Canada. It was designed to accommodate about two hundred students, composed of three years of medium-size undergraduate classes and later of graduate groups. The Faculty of Law contained three lecture rooms and four seminar rooms, a well-equipped library with space for 100,000 volumes, a courtroom, a student lounge, and other facilities. In 1968 an addition to the physical plant approximately doubled the existing size of the school.

GENERAL STATEMENT OF POLICY

The principal object of the Faculty of Law in The University of Western Ontario is to offer students a liberal education through the critical study of legal and related materials, in preparation for the private practice of law, for government service, and for kindred vocations.

FEES FOR THE FACULTY OF LAW

Faculty of Law $658.50

NOTE: The above fee includes a $60.00 non-academiccharge for the University Community Centre, University Students' Council, Athletics and Health Services. This sum may not, by law, be included in the student income tax certificate. The certificate will be available by the last day of February each year.

PAYMENT OF FEES

Fees are due and payable at the time of registration. A student may pay a minimum of $300.00 at the time of registration and the balance on or before the first day of the second term. There is a charge of $5.00 for payment of fees in two installments.

Students are advised to establish accounts in London banks well in advance of registration to ensure banking privileges for the payment of fees.

OTHER CHARGES

Late registration fee ..... $10.00 or $25.00
Withdrawal during registration week (minimum penalty) $50.00
Special examination $15.00
Transcript of academic record $1.00

The Board of Governors reserves the right to amend fees after the printing of this list.

Except by permission of the Dean of the Faculty of Law and the Comptroller of the University, students may not attend lectures or examinations, nor may they be recommended for any degree or diploma until tuition fees, fines and other accounts owed to the University are paid.

RIGHTS RESERVED

The Faculty reserves the right to change any of its rules, courses, regulations and charges, and to make such changes applicable to students already registered as well as to new students.

If the recommendations of a Report of the Special Committee on Legal Education (1972), of the Law Society of Upper Canada, are adopted by the Law Society, substantial changes may occur, over the next two or three years, in several aspects of legal education. These changes may affect admissions policies, curriculum, articling and the Bar Admission Course Prospective applicants to law schools in Ontario would be well-advised to obtain up-to-date information from the respective Faculties of Law at the appropriate time.

REGULATIONS OF THE FACULTY OF LAW

I. ADMISSION TO THE FACULTY OF LAW

1. Preliminary Education

The Faculty of Law does not prescribe a course of pre-legal studies, nor does the Faculty recommend specific undergraduate courses for those intending to enter law school. For those students planning university courses with a view to satisfying admissions requirements of the Faculty of Law, it is recommended that a broad background is advantageous and that a student should select a program of studies which will challenge him and assist him in developing good study habits.

2. Admissions Requirements

According to the requirements of the Law Society of Upper Canada, a person desiring admission to the first year of the LLB program must have successfully completed not less than two full years of academic work at a recognized university following Grade Thirteen in Ontario, or its equivalent.

3. Mature Applicant

A limited number of applicants who, though unable to fulfill the foregoing entrance requirements, can present proper evidence of good character, maturity, and experience, may in exceptional cases and by special action of the Faculty be admitted. A mature applicant must supplement his application with detailed information of his education and business experience, and general fitness to undertake the study of law as well as a statement explaining why he is unable to qualify as a regular applicant. Mature applicants are invited to discuss their application with the Admissions Officer of the Faculty of Law, The University of Western Ontario early in the year preceding the year for which they are applying. Mature applicants are also advised that the Law Society of Upper Canada requires every candidate for enrolment in the Bar Admission Course (the successful completion of which is a prerequisite to practise as a barrister and solicitor in Ontario) to have successfully completed two years in full-time attendance in an approved course in an approved Canadian university after senior matriculation; or to have successfully completed three years in full-time attendance in an approved course in an approved Canadian university after junior matriculation; or to have obtained a degree in an approved course in an approved university; and to have obtained the LLB degree at an approved law school. Mature applicants will normally be required to have an interview with an interview board.

4. Application Procedure

Application for admission must be on the prescribed form which may be obtained from the Admissions Office, Faculty of Law, The University of Western Ontario,

1151 Richmond Street, London, Ontario N6A3K7. Because of the limited number of spaces available, applications should be made well in advance of the date of intended enrolment. The deadline date for receipt of applications for the academic year 1974-75 has not yet been established. As a matter of policy, decisions are made as early as possible during the year. This places a premium upon making early application and ensuring that all requisite documentation is submitted as soon as possible. In due course, applicants will be informed in writing of the decision of the Admissions Committee. Applicants should not rely upon oral communications. Any enquiry relating to an admissions decision should be directed to the Admissions Office of the Faculty of Law and not to the Registrar's Office of the University. The strength of competition for places is such that decisions are frequently made before final year marks are available.

5. Admissions Procedure

Admission to the Faculty of Law in every case is by decision of the Admissions Committee of the Faculty of Law. The Admissions Committee of the Faculty of Law is composed of four members of the faculty (one of whom is the chairman), two representatives from the student body and one representative from the Senate Admissions Committee. The Admissions Officer of the Faculty of Law acts as a voting ex-officio member of the Committee. Factors taken into account in assessing applicants include: prior academic record, Law School Admission Test scores. Letters of reference, employment history, and other factors which in the opinion of the Committee indicate the applicant's potential ability for the study of law may also be considered.

6. Law School Admission Test

Every applicant is required to take the Law School Admission Test. Test scores are used to supplement academic grades and other admissions criteria. For the convenience of applicants, test centres have been established in major cities in Canada and the United States. For Canadians, the test is given four times a year, in October, December, February and April. The Faculty of Law urges that applicants arrange to take the test early in the academic year preceding admission. An application for the test and further details can be obtained from the Admissions Office, Faculty of Law, The University of Western Ontario or by writing to the Educational Testing Service, Box 944, Princeton, New Jersey 08540.

7. Advanced Standing

Applications from students successfully completing a part or all of their legal education in another Law School may be considered for admission with advanced standing, but all students taking the LLB of the University of Western Ontario shall take not less than a full two-year program which shall be individually tailored according to their particular needs.

8. Letters of Permission

A student who is registered at another recognized law school, but who presents a letter of permission from that school, may, on application and on payment of the appropriate fees, be admitted to the Faculty of Law, the University of Western Ontario to a program of courses approved by the school at which such a student is registered for purposes of obtaining the law degree of that school. A student admitted with a letter of permission cannot receive the LLB of the University of Western Ontario.

9. Candidates for the LLB Degree

Candidates are admitted only at the opening of the first semester of a regular session, and for the whole session and the full course of work.

II. THE ACADEMIC SESSION

1. The Academic Session at the Faculty of Law comprises a period of approximately thirty weeks; the session is divided into two semesters.
2. The first semester starts on September 4 and ends on December 21. The second semester starts on January 7 and ends on May 4.
3. The time-table for the first semester is available at the general office on the first day of classes. The Faculty may, on notice, schedule compulsory classes and seminars additional to those indicated on the time-table.

III. ATTENDANCE

1. Success in law studies requires that students devote their full time to the work of the school. The Faculty advises a student to avoid outside employment unless absolutely necessary. A student who contemplates taking outside employment in order to remain in school is required to consult the Dean of the Faculty either before or at the time of registration.
2. No credit is allowed for work done in absentia. Leave of absence is not permitted except in unusual circumstances. A student in good standing who is permitted to withdraw can only rejoin the Faculty of Law subject to the regulations in force at the time he applies to re-enter. Failure to attend classes, seminars, appointments, or examinations without good cause shown constitutes a ground for exclusion from the Faculty of Law.

IV. EXAMINATIONS

1. The final grade in each formal course is usually based upon written examinations or such work as is assigned. Examinations are held at the end of the first semester in December and at the end of the second semester in May. They are graded anonymously.

The Faculty may prescribe other tests or examinations during the Academic Session and may also require submission of essays or participation in other projects. The weight to be assigned to such interim tests, examinations and assignments in computing the final grade of the student shall be determined by the Faculty.

2. Non-attendance at an examination constitutes an absolute failure in the course concerned unless the candidate is excused by the Faculty for good cause shown.
3. The right to sit for examinations is conditional upon regular attendance at classes and group work. Final examination papers will not be returned to students, nor will they be regraded after the grades have been published, unless in exceptional circumstances the Faculty directs otherwise.
4. Where a student fails to obtain the weighted average of 60%, all of his examination papers are re-read.
5. Upon such conditions as the University may specify, a student may have an examination paper re-read by his examiner.
6. Where a student wishes to seek special consideration respecting an examination or examinations on medical, compassionate or other grounds, he must provide the relevant facts in writing as may be prescribed by the Dean before the student sits for the examination or examinations. In the absence of compelling and unusual circumstances, such as where the student is unable to communicate with the Dean because of incapacity, submissions after the event will not be considered.

7. First-year students will be examined in full year courses at Christmas. These examinations are designed to give the student experience in assimilation of facts, identification of legal issues, and the solution of problems through analysis and critical application of legal principles. Since these examinations form an integral part of the first-year training program, the same considerations apply as noted in (1), (2) and (3) above, except that: (a) examination papers may be returned to the student for the purpose of critical review and (b) any mark assigned will not figure in the computation of a student's final mark in that course.
8. A first-year student whose Christmas results, over the broad spectrum of subjects examined, fail to indicate a minimum aptitude for legal studies or an ability to grasp the fundamental concepts of substantive law will be referred to the Dean, who may determine the advisability of his continuing as a student in the Faculty of Law, and, where indicated, may advise or request that he withdraw.

V. GRADES

1. The following scale is used in grading: A: 75-100, representing excellent; B: 67-74, above average; C: 60-66, average; D: 50-59, below average; F: below 50.
2. The grade in each course is usually weighted in proportion to the credit assigned to the course. The unit credit is the semester hour, which represents one class-hour per week for a semester. Failing marks are included in computing the weighted average.
3. A student who obtains a weighted average of 60% will not be required to write supplemental examinations but will be passed on his average. A student who obtains a weighted average of less than 60% will be failed on his year. Supplemental examinations will not be permitted except in exceptional circumstances. The Faculty reserves the right to require a student to write a deferred or special or supplemental examination where the Faculty considers such action desirable.
4. Individual grades assigned by instructors are subject to the approval of the Faculty.
5. A student who fails to meet the required standards in any one year may be excluded from the Faculty of Law unless the Faculty allows him to repeat the whole of the work of that year during the following academic session. A student who fails any two years in the Faculty of Law shall be excluded except in extraordinary circumstances.

COURSES OF INSTRUCTION

OBLIGATORY COURSES

FIRST YEAR

407a,b Constitutional Law. An introduction to fundamental public law concepts: the structure and interpretation of Canadian federalism; the constitutional powers of the Crown, the executives, parliament, legislatures and their respective agencies; individual rights, public order and limitations on governmental powers; the process of Canadian constitutional reform.

Two hours per week, both semesters.

410a,b Contracts. An introduction to the law concerning binding obligations voluntarily entered into, commonly called contracts: how they are created, problems in the contractual relationship and remedies.

Three hours per week, first semester; two hours per week, second semester.

412a,b Criminal Law. Courts and jurisdiction; procedure from original process through arraignment and trial to appeal; indictable and summary conviction offences; standards and proof of liability; factors of justification and mitigation; analysis of selected offences against persons, property and morality; inchoate crimes; problems of legal responsibility involving insanity, drunkenness, etc., and youthful offenders.

Two hours per week, both semesters.

422a,b Legal Method and Analysis. An introduction to the judicial and legislative processes and to relevant facets of legal history, and to the basic skills and techniques of legal research, analysis and communication. Students will be required to complete a number of assignments and to write a test or tests which shall be computed in their first year average.

Two hours per week, First semester.

The moot program may culminate in the second semester

425a,b Property. The possession and ownership of land and the incidents thereto are the primary concern of this course; the origin of interests in land, the concept of estates, future interests, fees, tenancies, rights in the land of another, land ownership and family obligations. Select problems relating to the law of personal property.

Three hours per week, first semester; two hours per week, second semester.

430a,b Torts. An examination of the rules of law governing the basis for, and defenses to, civil liability arising from torts of intent, negligence, and strict liability, and from other wrongful acts combining these characteristics.

Three hours per week, first semester; two hours per week, second semester.

446a,b Civil Procedure. An introduction to the role of "adjective" law in the adversary system of justice and its relationship with and influence on substantive law. Emphasis is placed on the role of the lawyer in our system with its concomitant ethical dilemmas and on illustrations from practice.

Two hours per week, both semesters.

ELECTIVE COURSES:

SECOND AND THIRD YEARS

401a Administrative Law. A study of the administrative process in Canada. This will include an examination of the part to be played by various administrative agencies in controlling modern economic life as well as the role of the courts in supervising this activity.

Three hours per week, one semester.

401b Administrative Law. A study, on a broad scale, of the processes of law making and law application by the executive departments of government with particular reference to the

law of judicial control of public authorities. The central theme will be the tension between law and discretion.
Three hours per week, one semester.

402 Commercial Law. A study of the law of commercial transactions as it relates to the distribution and sale of merchandise, and the financing thereof. The rights and obligations of buyers and sellers of goods, including the law of sale of goods, consumer protection, secured transactions, and the financing of such transactions.
Four hours per week, one semester.

403 Company Law. The course shall be concerned with the legal implications of carrying on commercial activity in what has become known as the corporate form. A short introduction shall compare this form of business activity to other methods used by the business community. There shall be an attempt to provide a jurisprudential basis for the existence of the incorporated company.
Four hours per week, one semester.

404 Advanced Company Law. An introduction to legal aspects of corporate acquisitions and mergers: methods of acquisition such as sale of assets, sale of control and takeover bids, and problems of corporate marriage.
Prerequisites: Company Law and Income Taxation. The courses in Securities Regulation, Advanced Taxation, Trade Regulation and some knowledge of accounting are recommended.
Two hours per week, one semester.

406 Conflict of Laws. The resolution of legal problems arising from transactions involving more than one jurisdiction, including characterization and the proper law in marriage, divorce, annulment, legitimation, adoption, wills, administration, succession, contracts, torts and property.
Four hours per week, one semester.

408 Civil Liberties. Matters to be considered will include: Individual or private rights; Group Rights; Legislated Morality; Group Action in the State;
Two hours per week, one semester.

411 Debtor-Creditor Rights. Including remedies of unsecured creditors, execution of judgments, fraudulent conveyances and preferences, general assignments and bankruptcy.
Two hours per week, one semester.

413 Estate Planning. Review of intestate succession and limits on testamentary power; use of concurrent interests in property as a planning device; use of insurance, pensions, annuities; planning for particular family problems - incapacity, minority, spendthrift beneficiary, marriage breakdown; planning for the use of the trust, testamentary and inter vivos; will drafting: planning practice; tax planning, including consideration of the effect of death taxes and capital gains.
Prerequisites: Trusts and Wills.
Two hours per week, one semester.

414 Evidence. The course deals with the principles and rules which regulate the input of facts forming the basis upon which a decision is made by a judge or jury or other judicial tribunal.
Two hours per week, both semesters.

415 Family Law. A study of the legal problems relating to the organization and disorganization of the family, including the law of husband and wife, parent and child, etc.
Four hours per week, one semester.

416 Advanced Family Law. A study of the law and procedure relating to actions before the Provincial Court - Family Division. This will include consideration of child protection cases, affiliation proceedings, Deserted Wives' applications for support and proceedings under the Juvenile Delinquents Act. Students will be involved in work with some of the specialized agencies in the locality.
Two hours per week, one semester.

417 Insurance Law. A study of the insurance contract, its scope, purpose and social effects; its formation and construction; and its statutory regulation. Special attention will be given to the principles of insurable interest, subrogation, contribution, disclosure and illegality.
Two hours per week, one semester.

418 Jurisprudence. The objective of the seminar is to develop and test the student's own ideation of the nature of law. Toward that end, various perceptions of law are examined in the seminar.
Four hours per week, one semester.

419 Labour Law: The course is intended to cover broadly the right to organize and bargain collectively, including the enforcement of collective agreements, and, if time permits, strike law and the regulation of the relations between trade unions and their members.
Four hours per week, one semester.

423 Municipal Law: The nature, structure and powers of local authorities; validity of by-laws; actions by and against municipal corporations through officers and servants; expropriation and compensation; highways, assessment and taxation.
Two hours per week, one semester.

426 Land Development Law: The primary concern of this course is the introduction of some of the more sophisticated and practical problems resulting from land acquisition, its ownership and the financing thereof.
Four hours per week, one semester.

427 Public International Law: An introduction to the underlying principles of international law and the developing framework in several areas.
Four hours per week, one semester.

428 Individual Research: A student wishing to undertake a major piece of research and writing may apply to the Faculty Committee on Individual Research. A student may select this option only once in his law school career. Open to students during their second and third years.

431 Trade Regulation: This course deals with one important aspect of government regulation of business, the regulation of competition. It is not a course in regulated industries or consumer protection although these topics are considered briefly. Rather, the course is aimed at an examination of the problems of preserving business competition. The central focus is on the Combines Act.
Three hours per week, one semester.

434 Criminology: Nature, function and limits of the criminal sanction: criminal law in relation to consensual behaviour, interaction of law and morals, minimum requirements to attract the sanction, conditions affecting response to law, factors producing change in the substantive law; police powers; role of Crown; aspects of pre-trial and trial procedures; problems concerning civil liberties.
Two hours per week, one semester.

435 Law Reform: A seminar involving an examination of those specific areas of law which may be in need of reform. The materials will focus primarily on criminal law reform but students may pursue other areas of law if they wish.
Two hours per week, one semester.

436 Securities Regulation. A study of the securities markets with regard to problems of regulating transactions in securities for the protection of investors. Emphasis will be placed on regulatory techniques in Canada, particularly Ontario, and on the effect of securities regulation in the United States on the development of Canadian jurisprudence in this area.
Prerequisite: Company Law.
Two hours per week, one semester.

437 Law and Poverty. The course will begin with a general overview of the culture of poverty with particular emphasis on causative factors. This

will be followed by an examination of the lawyer's role in providing legal services to the poor contrasting the traditional solicitor-client relationship with other alternatives including group representation.
Prerequisite: Administrative Law or concurrent registration in Administrative Law.
Two hours per week, one semester.

438a,b Income Taxation. A basic course in income taxation concentrating on the treatment of individuals under the Income Tax Act. The course will emphasize statutory construction in dealing with problems in the following areas: residence, the meaning of income; deduction credits and exemptions; income splitting; tax accounting; the filing of returns and collection of tax.
Four hours per week, both semesters.

439 Advanced Taxation - The Federal Tax Treatment of Corporations and Shareholders. This course deals with the federal income tax treatment of corporations and their shareholders.
Prerequisite: Income Taxation.
Three hours per week, one semester.

443 Close Corporations. This course will be a study of the use of the corporate vehicle and the organization of private business activity, examined in the context of corporate planning and counselling.
Prerequisite: Company Law.
Two hours per week, one semester.

444 Environmental Law. After considering the nature and magnitude of the environmental problem, students will assess the adequacy of present techniques of control including international and constitutional law, common law doctrines based on property rights, and the statutory response by both federal and provincial governments.
Prerequisite or corequisite: Administrative Law.
Two hours per week for those choosing to write a final examination and three hours for those undertaking an essay or project, one semester.

450 Wills. An examination of the law concerning disposition of property after death, with primary emphasis on the use of the will as a device for this disposition. It is not a course on estate planning.
Two hours per week, one semester.

452 Agency and Partnership. This course is basically a study of unincorporated associations and the law that pertains to them. The emphasis, therefore, will be upon partnerships, but additional work into unincorporated companies, and trade unions and clubs will also occur.
Two hours per week, one semester.

457 Legislation. A study of the legislative process, concerned with the drafting of legislation and the considerations involved therein. Techniques *of statutory interpretation in relation* to legislative drafting will also be considered.
Three hours per week, one semester.

459 Secured Transactions. A study of secured interests in personal property, with particular reference to the Ontario Personal Property Security Act and its relationship to Article 9 of the Uniform Commercial Code of the United States.
Prerequisite: Commercial Law.
Two hours per week, one semester.

462 Intellectual Property and Unfair Competition. The course will deal with the protection of intellectual and industrial property in Canada with emphasis given to the policy objectives of the relevant federal legislation. The course will analyse the current proposals for reform of the laws dealing with patents, copyright, trademarks, and industrial designs and related statutes.
Two hours per week, one semester.

467 Trial Process. An experimental course designed to emphasize the law of evidence as a process rather than as a collection of rules with their associated conceptual rationales. The

purpose of the course will be to attempt to provide some insights into the means by which facts are found, and therefore proved, in the Anglo-Canadian system of litigation.
Prerequisite: Evidence.
Two hours per week, one semester.

468 The Law and Organized Sports. A seminar dealing with the diverse and currently developing legal issues in the broad field of professional and amateur sports.
Two hours per week, one semester.

471 Criminal Procedure. An advanced course dealing with the practical matters which occur in legal practice of criminal cases.
Two hours per week, one semester.

472 Consumer Protection. Consideration will be given to the following topics in the course: Consumer and Credit; Consumer Merchandising and Sales; Landlord-Tenant Relations; Consumer and his Remedies.
Two hours per week, one semester.

473 International Law of the Sea. A study in depth of some of the current peacetime problems in the Law of the Sea. Discussion will be on one or two of the following subjects: the continental shelf, the seabed, the high seas, environmental problems, disarmament, conservation of the living resources of the sea.
Prerequisite: Public International Law.
Two hours per week, one semester.

475 Real Estate Drafting and Negotiations. The primary concern of this course is the development of drafting and negotiating skills in the students.
Prerequisite: Land Development Law.
Two hours per week, one semester.

476 Trusts. An introduction to the law of trusts, including the creation of trusts, the rights and duties of trustees, the rights of beneficiaries and the special rules relating to charitable trusts. Attention will also be given to the development of equitable principles and remedies.
Three hours per week, one semester.

477 Criminal Process. An advanced course dealing with certain chosen procedural areas as well as certain policy questions facing the legislator, the defence lawyer, and the prosecutor. Topics will include on-the-sheet detention, search, multiple counts, multiple accused persons, joinder and severance, prosectorial discretion and criminal appeals.
Two hours per week, one semester.

CROSS REGISTRATION IN BUSINESS ADMINISTRATION COURSES

The Faculty of Law and the School of Business Administration have a joint arrangement whereby advanced-standing students (second and third year law students and second year business students) are able to cross register in courses offered by the other institution. Such cross registration requires approval in advance of the Dean of the school where the student is registered and the Professor in the course he wishes to attend. Such students would be expected to meet all requirements of the course for which they cross register and they would be evaluated on the same basis as others in the course.

CROSS REGISTRATION IN COURSES OUTSIDE THE LAW SCHOOL

(1) CLASSICS 43 ROMAN LAW

The Faculty of Law and the Faculty of Arts, Department of Classical Studies, have an arrangement whereby second and third year law students may cross register in the following course in Roman Law:

Classics 43 Roman Law: This course will attempt to describe and examine all aspects of the legal system of Rome. Its topics will include the origins and substance of Roman Law, procedure and jurisdiction, the nature and position of the Lawyer, social aspects of Roman Law, the place of Roman Law in general legal theory and its influence on medieval and modern times and an explanation of Latin terms in contemporary Law. The class will meet two hours a week, both semesters.

Cross registration in the course in Roman Law requires approval in advance of the Dean of the Faculty of Law and the Professor in the course on Roman Law.

(2) HISTORY 455 UNITED STATES LEGAL HISTORY

The Faculty of Law and the Faculty of Social Science, Department of History, have an arrangement whereby second and third year law students may cross register in the following course in United States Legal History:

History 455, United States Legal History: English origins of the common law. The major focus of the first semester will be on the transplantation of the common law and related developments in American legal history from the time of the first settlements to the codification movement in the first half of the nineteenth century. The second semester will emphasize the last one hundred years. The emphasis throughout the course will be on the social history of law.

The class will meet three hours a week in both semesters. Although the format of the course will emphasize lectures, discussions, and readings, rather than research, law students may fulfil part of the course requirements by undertaking comparative research in Canadian legal history.

Cross registration in the course in United States Legal History requires approval in advance of the Dean of the Faculty of Law and the Professor in the course on United States Legal History.

SPECIAL EVENTS

The Faculty of Law and student Legal Society form a Special Events Committee. Leading personalities in legal education, the profession of law, and related disciplines are invited to address the students on matters related to the study and practice of law, and it is hoped also that the Committee will sponsor films and panel discussions.

COMMUNITY LEGAL SERVICE PROJECTS

From its inception in September 1969, the Law Students' Community Legal Services Program has expanded into a sophisticated operation involving several different projects, operating both from offices in the Law School and from a clinic in the core area of the city of London. Law students offer legal services to the community pursuant to the regulations governing the provision of Legal Aid in Ontario. In addition, duty counsel services are provided in Family Court and a Consumer Complaint Bureau is operated. This clinical experience will, it is hoped, form the basis for a credit course beginning 1973-74.

MOOT COURTS AND MOCK TRIALS

Students are required to participate in a moot court program administered by the Faculty in conjunction with the first year course in Legal Method and Analysis. Students in the second and third years are encouraged to participate in the program of moot courts which are organized and conducted by the students themselves through The University of Western Ontario Legal Society. Through such participation, the student gains invaluable experience in legal research, the preparation of argument on behalf of a client, and the oral submission of such argument. Members of the Bench and of the practising Bar, giving generously of their time and talents, sit as judges and offer to the participants their advice and constructive criticism, based upon years of experience in advocacy. In addition, students in the second and third years are offered the opportunity to prepare and conduct mock trials, based upon actual cases. Here, the student obtains experience in gathering evidence, interviewing witnesses, and examining witnesses at trial. The Faculty and students are particularly fortunate, in connection with this program, to have the co-operation of the Bench, Court officials, the police, and various citizens of London who contribute their time to act as witnesses.

HONORS

1. Students who obtain a weighted average of 70% or more and are in the top 10% of the class in any year shall qualify for the Dean's List of Honor Students.
2. A student who is on the Dean's List of Honor Students in all three years shall graduate with distinction. A student who is on the Dean's List of Honor Students in at least two of his three years at the Faculty of Law is eligible to graduate with distinction.
3. Students who obtain a weighted average of 75% or more over all three years shall graduate with great distinction.

THE DEAN IVAN C. RAND HONOR SOCIETY

This Society was formed by the undergraduate students in the term of 1963-64, to commemorate the Honorable Ivan C. Rand, Dean of the Faculty of Law from 1959 to 1964. A committee composed of representatives of the undergraduate

student body and of the Faculty may nominate not more than three students from the graduating year for membership of the Society, selection being based upon meritorious academic standing throughout the undergraduate years in law, and outstanding contributions in the service of the undergraduate students of the Faculty of Law.

THE MALCOLM J. McKINNON AWARD

Classmates and friends of the late Malcolm J. McKinnon, first year law student, September 1971 to February 1972, have created an award in his memory and to remind the first-year class that this school offers, not only a legal education, but also an opportunity to grow and develop into concerned individuals willing to give of themselves so that others may benefit from their knowledge and friendship. This award is given to the person in the first-year class who best exemplifies this spirit.

LAW CLERKS' ASSOCIATION

Each year, outstanding students who have completed service under articles and the teaching portion of the Bar Admission Course are invited to serve as Law Clerks to the Chief Justice of Ontario, the Chief Justice of the High Court of Ontario, and the Chief Judge of the County and District Courts. Further information regarding these positions may be obtained from the Dean's Office.

FINANCIAL ASSISTANCE

RESTRICTED BURSARIES AVAILABLE TO LAW STUDENTS ONLY

A Bursary of $250

From an anonymous law firm of London, to be disbursed at the discretion of the Board of Governors or persons acting for them towards payment of tuition fees in any year of the course to the student who will be likely to attain a creditable standing in the profession and whose continued education without assistance would be a hardship upon his family.

Fred J. Blackwell Bursary Fund

A fund has been established, the interest on which is available to deserving students in any year of the Faculty of Law on the recommendation of the Faculty.

Harold G. Fox Education Fund

One bursary per year of $100 is available for 1972-73 to 1976-77 out of monies given to the Law School by this Fund.

The Law Society Foundation Bursaries

Bursaries of up to $250 are available to law students in any year of the course, payable out of funds allocated to the University by the Foundation.

GENERAL INFORMATION

I. ADMISSION TO THE PRACTICE OF LAW

In view of the fact that requirements for admission to the practice of law vary from province to province, a student wishing to practise law in any province other than

Ontario is advised to communicate with the Secretary of the Law Society concerned before seeking admission to the Faculty of Law in the University of Western Ontario.

Requirements for admission to practise as a barrister and solicitor in Ontario are set by the Law Society of Upper Canada, and can be ascertained in detail by writing to the Society's Secretary, Osgoode Hall, Queen Street West, Toronto 1. In brief, students must graduate in an approved law course offered by an approved university - the University of Western Ontario and its law course have been approved for this purpose - and complete the Bar Admission Course. The latter comprises a period of 12 months' service under articles to a solicitor in Ontario followed by a 6-month course of full-time practical training at Osgoode Hall in Toronto.

If the recommendations of a Report of the Special Committee on Legal Education (1972), of the Law Society of Upper Canada, are adopted by the Law Society the articling stage will be abolished. This will mean that students enrolling in first year in the Law Faculty in September 1973 will, upon graduation, enter into the Bar Admission stage in September of their graduating year (for a period of approximately six months) without the intervention of an articling period. Upon successful completion of the Bar Admission Course the student is then eligible for admission to the Bar.

Attention is drawn to the fact that, by statute, being called to the Bar and admission to practise as a solicitor are not open to non-British subjects.

II. ACADEMIC RIGHTS OF STUDENTS

The Senate has established procedures for petitions and appeals.

(a) Definitions:

A **petition** is "a request that a regulation be waived on compassionate grounds or because of extenuating circumstances."

An **appeal** is "a request that a grade on a particular piece of work, or a final standing in a course or program, be changed, on grounds provided by the individual appealing".

(b) Procedure:

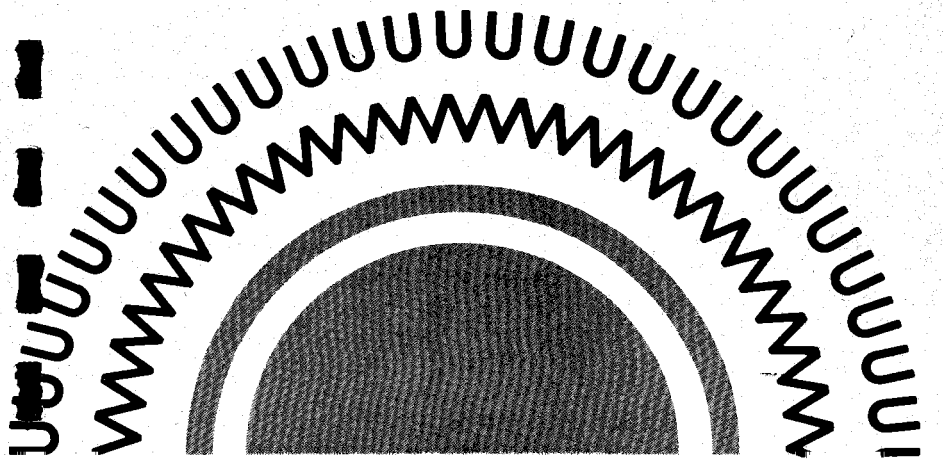
(i) Each step of the petition and appeal procedure shall be completed within a reasonable time.

(ii) In the first instance, petitions and appeals will be referred to the Instructor involved. If the individual is not satisfied with the decision of the Instructor or if the Instructor is not or will not be physically available within a reasonable time the petition or appeal may be forwarded to the Dean.

These petitions and appeals will be carefully considered by the office of the Dean. In the case of appeals the Dean may hire an independent assessor to render an advisory judgment. **In the Faculty of Law the procedure is to make a formal complaint to the Student Appeals Committee. The Committee shall advise the Dean of the Faculty of Law.**

If, after receiving a decision from the Office of the Dean, the individual is still not satisfied, he may appeal to the Senate Review Board—Academic (SRBA). SRBA will be the final court of appeal on substantive matters. Further appeals of a procedural nature will be considered directly by the Chairman of the Senate. In matters pertaining to the Academic appeals process, the right to counsel will be accorded only at the level of SRBA.

Faculty of Dentistry



Dean:
Wesley J. Dunn, DDS, Toronto; FACD

Room 1003 Dental Sciences Building Phone: 679-3864

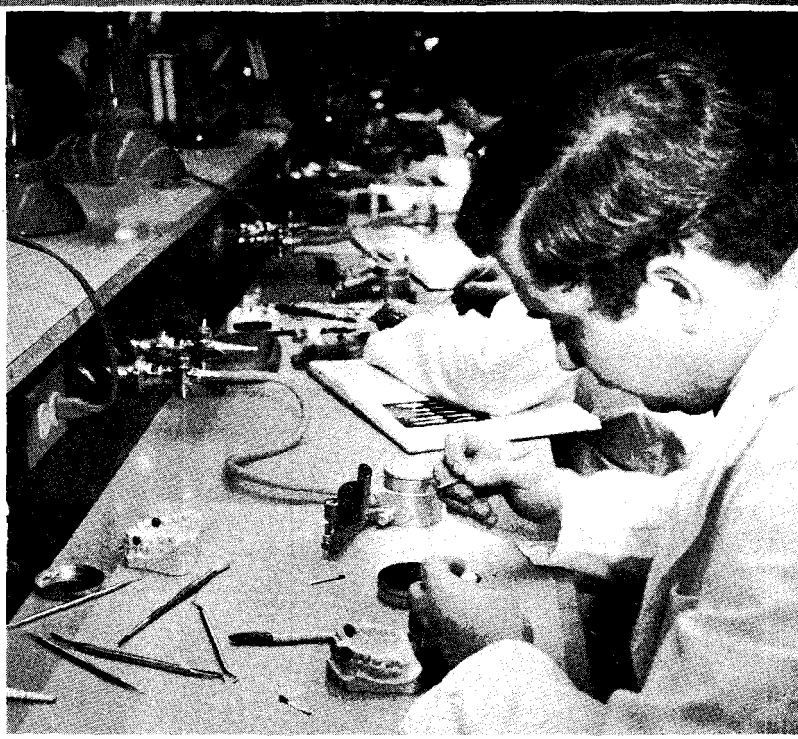
Administrative Officer:
E. Clark

Room 1003 Dental Sciences Building Phone: 679-3864

Director of Clinics:
K. M. Baird, *OBE, CD, DDS*, Toronto; *FICD*

Room 0153 Dental Sciences Building Phone: 679-3389

Faculty of Dentistry



ACADEMIC CALENDAR

1973

July 27	Last day for receiving applications for examinations for removal of conditions.
August 17	Examinations for removal of conditions begin at 9:00 a.m. in Dental Sciences Building.
August 27	First Quarter begins for Third Year. (Clinical Orientation and Oral Diagnosis, 8:00 a.m., Room 3008, Dental Sciences Building).
September 10	Orientation. Complete details concerning Registration will be sent to all students by the Registrar's Office before this date. Issue of instrument kits to dental students on following schedule: 8:00 a.m. Second Year 9:30 a.m. First Year 11:00 a.m. Fourth Year (Location: Lower Ground Floor, Dental Sciences Building)
September 11	First quarter begins for First, Second and Fourth Years.
October 8	Thanksgiving Day - Holiday with classes cancelled.
October 26	Autumn Convocation.
November 5	Second Quarter begins - all years.
December 19	Christmas Vacation begins at 5:00 p.m. - all years.

1974

January 3	Lectures resume - all years.
January 14	Third Quarter - all years. Payment of final installment of fees is required on or before this date.
March 11	Fourth Quarter begins - all years.
April 12	Good Friday - Holiday with classes cancelled.
April 22	Study Week - Fourth Year.
April 29	Final Examinations - (Monday-Friday) Fourth Year Study Week - Third Year.
May 6	Final Examinations (Monday-Friday) Third Year Study Week - First/Second Years. Clinical Practice resumes - Fourth Year.
May 12-15*	Third Year to attend sessions of Ontario Dental Association Meeting, Toronto.

May 13	Final Examinations (Monday-Friday) First/Second Years.
May 16	Summer Clinic begins for Third Year.
May 20	Victoria Day - Holiday with classes cancelled.
June 7	Spring Convocation - Dentistry.
June 21	Summer Clinic ends for Third Year.

* Tentative date.

Regular meetings of the Council of the Faculty of Denistry or its Executive Committee are normally held on the fourth Monday of every month, September to June, inclusive.

HISTORY OF THE FACULTY

In October, 1947, the Board of Governors of The University of Western Ontario approved in principle the development of a faculty of dentistry. In 1949, this was endorsed by the Canadian Dental Association and the Royal College of Dental Surgeons of Ontario.

By 1950, it became obvious there was need to expand the existing facilities for the teaching of dentistry in the Province and accordingly the Royal College of Dental Surgeons recommended the creation of new premises for the existing dental school.

In 1962, the Royal College of Dental Surgeons of Ontario in a report to the Minister of Health, recommended two sites for the establishment of a second dental school, one of which was within The University of Western Ontario.

The Honorable John P. Robarts, then Prime Minister of Ontario, announced on 29 October 1964 that the Government of Ontario had approved the development of a faculty of dentistry at The University of Western Ontario within the Health Sciences Centre. Less than one month later, on 20 November 1964, the Board of Governors officially established the Faculty of Dentistry, effective 1 January 1965 and at the same meeting appointed its dean who took office on 1 February 1965.

The Honorable Dr. M. B. Dymond, then Minister of Health of Ontario, officiated on 27 September 1966 at the Ground-Breaking Ceremony for the Dental Sciences Building. The following year, on 20 October 1967, the cornerstone was placed by Colonel D. B. Weldon in his last official act as Chairman of the Board of Governors. The Official Opening of the Dental Sciences Building took place on 25 October 1968, again with Dr. Dymond officiating.

Full approval of the undergraduate dental program was given on 21 February 1970 by the Council on Education of the Canadian Dental Association.

The first class selected from among 88 applicants was enrolled in the Faculty of Dentistry in September, 1966 and its graduates four years later on 29 May 1970 received their degrees marking the first time the degree of Doctor of Dental Surgery had been conferred by The University of Western Ontario.

Earlier projections had not envisaged that enrolment of First Year dental students would have reached the full capacity of 52 students until perhaps, the mid-1970s but in 1970-71 First Year full enrolment was achieved. In sharp contrast to the 88 applications received for admission to the first class in 1966, the Faculty of Dentistry Committee on Admissions gave consideration to 598 applications in 1972.

Objectives

The objectives of the Faculty of Dentistry are to select students who are intellectually, morally and physically qualified for a career in dentistry and to provide them with an academic environment conducive to a broad education including the acquisition of the special knowledge and skills of dentistry. There should be developed within the student an intellectual curiosity, an ability to reason, the realization of the need for continuing education, and a superior sense of responsibility to society. The student should also attain a knowledge of the basic sciences related to dentistry including the application of these sciences to his clinical practice, a high degree of clinical ability, and understanding and interest in research and education, a knowledge of and the ability to practice preventive dentistry, a competence to organize and administer a practice properly including the utilization of auxiliary personnel, and a highly developed sense of ethical principles in professional life.

Specifically, the DDS program is intended to graduate dentists who possess the knowledge and skill to conduct a superior general practice and also sufficient knowledge of basic and applied science to permit and stimulate professional and intellectual growth.

The Library

The Dental Library is a fully-integrated part of the Health Sciences Library serving Dentistry, Medicine, Nursing and associated Basic Sciences.

Although located separately on the main floor of the Health Sciences Centre, the Health Sciences Library is part of the main University Library.

The collection of the Health Sciences Library contains about 101,000 volumes. Approximately 1,500 subscriptions are currently received. The library also has a collection of several thousand volumes dealing with the history of the medical sciences.

Hours during the term are Mon-Fri 8:30 a.m. to 11:00 p.m.; Sat. 9:00 a.m. to 11:00 p.m.; Sundays 10:00 a.m. to 11:00 p.m.

ADMISSION REQUIREMENTS

Admission to the Faculty of Dentistry is based on academic ability and personal qualities as evidenced by scholastic records, aptitude tests, and personal references. Because facilities for pre-clinical and clinical instruction are limited, it is necessary to restrict enrollment to those who, in the opinion of the Faculty, are best qualified to meet the mental and physical demands of the curriculum and most likely to successfully complete the full course of study. The presentation of the minimum requirements for admission will not assure acceptance.

Students are eligible to apply for admission to the Faculty of Dentistry at The University of Western Ontario when they have successfully completed at The University of Western Ontario or at other universities where comparable programs are offered, two years of university study beyond the level of Ontario Grade 13, or its equivalent, provided that satisfactory standing is achieved in at least the work of one year in each of Biology, (or Zoology), Chemistry, Physics and Organic Chemistry.

Note: Chemistry 203, 250, 313, 353 and 453 individually satisfy the Organic Chemistry requirement of this Faculty.

In their choice of options for the second "predental" year, students are urged not to anticipate dental school courses. Rather, they should seek a broad background of education in keeping with their own interests.

DENTISTRY

Application for Admission

Application for admission to the Faculty of Dentistry must be made upon the official application form obtainable from the Registrar's Office. The completed forms and supporting documents (originals) are to be mailed to The Director of Admissions, The University of Western Ontario, London, Canada, N6A 3K7. Applications should be submitted not later than March 1, 1974.

A student who has never been registered at The University of Western Ontario must:

(a) attach to his completed application form all his Ontario Grade 13 certificates (originals) or an official certified transcript of his complete secondary or high school record;

(b) request the Registrars of all universities, colleges and other institutions of post-secondary education which he attended or is attending, to forward direct to The Director of Admissions, certified official transcripts of his academic record;

(c) request the Registrar of the University which he is currently attending to forward direct to The Director of Admissions a second transcript of his record at the end of the current academic year.

Priority consideration is normally first given to Canadian citizens and Landed Immigrants whose home residence is in the Province of Ontario and then to citizens and Landed Immigrants normally residing outside the Province of Ontario.

Dental Aptitude Test

All applicants to this Faculty must complete the Dental Aptitude Test administered by the Canadian Dental Association. Information on this test program may be obtained by writing to:

The Administrator
Dental Aptitude Test Program
Canadian Dental Association
234 St. George Street
Toronto 180, Ontario.

Registration

Students in the Faculty of Dentistry will be advised direct by the Registrar's Office concerning registration. No student will be registered after the designated registration date except by special permission of the Dean.

FEES

All Years' Fees (Subject to Change) $827.50*

If paid in two installments—

With Registration $450.00

First day of Second Term $382.50

*(Includes Student Activity and Health Service Fees Totalling $54.00)

Instrument Fee

(Estimate only) - Payable with Registration

First year $910.00
Second year $675.00
Third year $430.00
Fourth year $100.00

If paid in two installments, an extra $5.00 handling charge will be levied.

Late Registration

Specified date (September) $10.00
Thereafter $25.00

Other Charges

Evaluation of non Ontario certificates for admission $2.00
Transcript of record, each copy (first two copies) $1.00
Examination for removal of conditions, each paper $15.00

The Board of Governors reserves the right to amend fees after the printing of this brochure.

NOTES:

1. A non refundable $50 deposit on tuition fee is required from an admitted applicant to retain his place in the first year class.
2. Students must pay their fees as above, before attending any lectures or examinations, except by permission of the Dean of the Faculty and the Comptroller.
3. No student shall be recommended for any diploma or degree until his tuition fees and other accounts owed to the University have been paid.
4. The fees outlined above represent only a fraction of the cost of dental education. The balance is provided by Federal, Provincial and Municipal grants, endowment income and other grants and gifts.
5. The Instrument Fee includes the purchase or rental of instruments, equipment and materials; laboratory costs and compulsory Bulletins and stationery supplies.
6. A $25 fee to be deposited with the Director of Clinics is required from all Third Year students prior to commencement of the Clinical Orientation course. This is refundable at the end of Fourth Year when all items of equipment on loan have been returned.

Financial Responsibility

All students who are reported as having an unsound financial record will be subject to special review by the Council of the Faculty of Dentistry before being recommended for a promotion.

A student or students will be held financially responsible for any actions of a negligent or wantonly destructive nature which result in the damage of University property. Such charges will form part of the amount due to the University. Non-payment will result in disciplinary action by the Dean's Office.

Attendance

(a) Students registered in any year are expected to attend the courses of instruction in all subjects prescribed for that year.

(b) In dentistry, a high proportion of a student's knowledge, understanding, and clinical competence, is acquired through observation and participation in assignments, laboratory sessions, and preclinical demonstrations. Consequently, attendance is considered essential.

(c) Classes desiring postponement of any lecture, clinic or laboratory periods shall be required to secure permission for such postponement from the Dean-InCouncil, who shall thereupon notify the Chairman or Head of the Department concerned.

Academic Requirements

1. To complete the year's work and be permitted to register in the succeeding year of the dental program, a student must:
   (a) complete the prescribed assignments.
   (b) obtain at least a satisfactory level of performance in each subject in which a final examination is held.

A student who fails to satisfactorily complete the laboratory, clinical or other assignments prescribed in a clinical subject will be designated as "Incomplete" and may be required to return to the Faculty for a specified period during the summer months in order to fulfill his assignments.

2. A student may be given permission by the Council of the Faculty of Dentistry to write no more than two supplemental examinations, provided:
   (a) his general average is at the Satisfactory level.
   (b) his grades are below Satisfactory level in no more than two subjects.
3. A student will be considered to have failed to complete the year's work, if:
   (a) his general average (in all subjects of that year) falls below the Satisfactory level.
   (b) he has failed to obtain a Satisfactory level in more than two subjects.
   (c) he has been given permission to write supplemental examinations and has failed to meet the requirements under section 1(b) above.
4. A student who fails to complete a year may be permitted by the Council of the Faculty of Dentistry to repeat that year. Permission is given only when a vacancy is available in that year. The total work of the year must be repeated unless, by action of Council, the student is granted credit for any course or courses in which, in the judgment of the Council, he has performed at a sufficiently high level of competence that the repetition of such a course or courses is not required.

5. A student who obtains an average at the Excellent level in a year's work, is considered to have passed that year with honors. A student who passes with honors in each year in the Faculty of Dentistry will be graduated "with distinction".
6. In each subject the ratio of term grades to final examination grades is determined by the teaching staff of the department concerned.
7. At the end of each academic year, a report will be mailed by the Office of the Registrar to each student showing his grade in each subject. Key to Grades is as follows:

   E - Excellent performance

   G - Good performance

   S - Satisfactory performance

   U - Unsatisfactory performance

First Year Curriculum, 1973-74

DEPARTMENT OF ANATOMY

1. Gross Anatomy. The objectives of this course are to provide the student with a knowledge of anatomy upon which all of his future studies and practice of the profession will be based.

(a) An introductory lecture course dealing with the systems of the body precedes the detailed study of the head and neck region.

(b) This is followed by a course of lectures, demonstrations and laboratory sessions which place emphasis on the regional anatomy of the head and neck and which stress the relationship of structure to function. Particular attention is given to structures which are of continuing relevance to dental students.

Students work in small groups during the laboratory sessions, and demonstrations employing stereoscopic slides form an important part of the course. Tutorials and self assessment tests provide the student with an opportunity to reinforce the knowledge gained in other parts of the course.

232 hours (total).

2. Histology. The objective is to acquire sufficient knowledge of the microscopic structure of the various tissues and organs of the body so that the functioning (Physiology) and the disease processes (Pathology) can later be understood. Considerable emphasis is placed on the ultrastructure of tissues because the biochemical processes in cells can largely be interpreted in terms of cell ultrastructure. Since histology is concerned

with the structure and relationships of normal cells, tissues and organs it serves as a basis for understanding and recognizing normality and normal variation, both of which are significant in health maintenance or disease prevention.
A large segment of the course is the detailed study of the structure and development of the oral tissues, and special emphasis is placed on the student's performance in this area.
144 hours (total).

3. Human Genetics. A short course of illustrated lectures on human genetics stressing the applications of genetics in understanding the etiology of certain types of abnormal tooth development, oral pathology and development of the cranio-facial complex, and indicating how this knowledge can be utilized in offering genetic counselling to patients and their families.
16 hours.

DEPARTMENT OF BIOCHEMISTRY

Biochemistry. Lectures, practical exercises and clinically applied discussion periods on (a) Chemistry and intermediary metabolism of carbohydrates, fats, proteins, nucleic acids and selected minerals. (b) Protein synthesis and molecular genetics, (c) Enzymes, (d) Cellular functions and control, (e) Biochemistry of blood, mineralised tissues and oral cavity, (f) Nutrition, (g) Hormones.
Lectures 88 hours. Practical and discussion periods 64 hours.

DEPARTMENT OF ORAL MEDICINE

1. Oral Medicine. The aim of this course is to introduce to the student the causes of oral disease and to demonstrate those aspects of preventive dentistry which he can begin to practise in his own mouth.
The natural history of dental disease is outlined. Opportunity is taken when clinical examinations are being carried out to study normal orofacial anatomy.
32 hours.

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Growth and Development. This is an introductory program devoted to the general topics of growth, craniofacial growth and the development of the dentition.
16 hours.

DEPARTMENT OF PHYSIOLOGY

A. Human Physiology. This core course is composed of lectures, informal group discussions, demonstrations, laboratory work, and assigned study. The general objective of the course is to develop a basic knowledge of human physiology, utilizing the main general themes of homeostasis and control mechanisms of bodily functions. The course of study involves: Man and his environment; Neuronal mechanisms and an introduction to the Central Nervous System; Cardiovascular system; Respiratory system; Endocrine system; Renal

system; Gastrointestinal system; Sex and reproduction; and Integrative mechanisms. A student is expected to acquire a fundamental knowledge of all the body systems, of the inter-relations among these systems, and of man as an integrated organism capable of adjusting to his environment. It is also expected that the student will acquire knowledge of the physiological parameters of health at all ages, and will be able to predict those changes that will occur during both *internal and external stresses.*
The course is taught jointly to Medical and Dental Students.
96 hours.

B. Applied Physiology. The course is composed of lectures, tutorials, seminars, essay-preparations, and self-instructional program. The objective is to give dental application to major topics of the Human Physiology (A) core program.
64 hours.

DEPARTMENT OF RESTORATIVE DENTISTRY

1. Operative Dentistry. This course introduces the student to the clinical aspects of the disease of dental caries. While emphasis is given to prevention, the treatment of commonly occuring hard tissue lesions by means of routine restorative techniques is discussed in detail. The laboratory phase of the program reinforces the lecture material and permits full opportunity for practical application under simulated clinical conditions. Upon the completion of this course the student will be expected to diagnose and treat simple carious lesions utilizing routine restorative techniques.
Lectures 32 hours, Laboratory 64 hours.

2. Dental Materials Science. A basic and general discourse is given to the various classifications of materials used in dental operative procedures. Emphasis is placed on physical and mechanical properties which forms the rationale for the proper technological management of materials. In addition several selected topics concerning specific materials are presented in co-ordination with the preclinical presentations and exercises in the Operative Dentistry course.
Lectures 32 hours.

DEPARTMENT OF SOCIAL DENTISTRY

1. Professional Conduct. A short course designed to encourage the development of responsible professional attitudes and to produce, within the freshman dental student, an enhanced awareness of the nature and extent of the responsibility the dentist assumes in respect of his patients, his profession, his colleagues, society, his family and himself.

2. Scientific Writing. For the guidance of the student, to outline the requirements of good writing and the special requirements normally imposed by scientific and/or professional journals to which scientific and/or professional papers may be submitted.

3. History of Dentistry. A short course tracing the trials and tribulations in the development of dentistry as a profession and identifying its major contributors and the nature and significance of their contributions.

4. Community Dentistry. By the use of seminars and field trips, the student will be introduced to the community, its structure, the magnitude and distribution of dental disease within it and its available dental resources. Basic methods of epidemiology and biostatistics and their use in dealing with dental diseases will be discussed.
32 hours (total).

INTERDEPARTMENTAL

1. Conjoint Course in Occlusion. This course is composed of two sections, each concerned with a different aspect of the human dentition. The first part deals with the study of the morphological characteristics of both primary and permanent teeth and their positional relationships in the dental arches. Emphasis is placed on the practical relationships of the teeth as they relate to their adjacent members. The student begins to develop technical proficiency by utilizing a wax addition method of restoring the anatomical crowns of selected representative teeth.

The second part introduces principles of occlusion designed to provide the student with a basic understanding of the fundamentals involved. The use of the dental articulator is introduced and explained as a method of orientating students to the field of occlusion. Articular patterns are fabricated in wax on mounted casts, and the relationships of the natural and artificial teeth to their antagonists and the jaws are studied. The Department of Restorative Dentistry teaches this program.
96 hours.

Second Year Curriculum, 1973-1974

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

1. Dental Microbiology. A course of lectures and tutorials dealing with the nature and morphology of bacteria; host-parasite relationships; disinfection and sterilization; a survey of bacteria of medical and dental importance; the nature of viruses and virus infections; serological diagnostic methods; immunization, hyper-sensitivity; antibiotics and chemo-therapy; and special topics in 'mycology and parasitology. After an intensive introduction there will be detailed consideration of the part played by microbes in disease and, specifically, those affecting dental practice, hygiene and preventive measures.

A course of laboratory exercises integrated with the lecture course and seminars and illustrating the principles and the applications of microbiology.
128 hours (total).

DEPARTMENT OF ORAL MEDICINE

1. Oral Diagnosis. By means of lectures and clinical teaching sessions the techniques of history-taking, examination, diagnosis and prognosis formulation are promulgated. Practical clinical instruction follows each didactic session.
The aim of this course is to give the student a thorough grounding in the techniques of Oral Diagnosis prior to his entry to the clinic.
16 hours.

2. Periodontics. This course comprises of a series of lectures and

seminars on the etiology, pathogenesis, clinical features and diagnosis of periodontal disease.
The aim of the course is to introduce the student to patient motivation, early recognition and conservative treatment. Clinical demonstrations and exercises develop skills in the simpler therapeutic procedures.
32 hours.

3. Radiology. A series of lectures and laboratory exercises designed to acquaint the student with the principles of radiation production, control and hygiene. Instruction in radiographic techniques is commenced, as well as some lectures on the radiographic interpretation of disease processes which affect the teeth and jaws.
24 hours.

4. Occlusion. A lecture series on the dynamics of Occlusion in function and dysfunction. The etiology, histopathology and means of recognition of occlusal trauma are stressed. Laboratory exercises emphasize the understanding of the basic principles of occlusal correction in the natural dentition.
64 hours.

DEPARTMENT OF ORAL SURGERY

1. Local Anaesthesia. A course of lectures and demonstrations in the theory and practice of local anaesthesia pertaining to dentistry held during the third and fourth quarters.
16 hours.

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Paediatric Dentistry. This is a continuation of the first year Growth and Development program with special reference to the dentofacial complex, occlusion, its normal and abnormal development. This is followed by a pre-clinical orthodontic and paedodontic program that will prepare the student for the clinical procedures he will be required to perform in his third and fourth years.
56 hours.

DEPARTMENT OF PATHOLOGY

Introductory lectures are given at the beginning of each course in which the objectives of the course are discussed. A list of the lecture topics is provided for each student and lists of the topics to be discussed are provided at the beginning of each lecture or group of lectures.

1. General Pathology. A course of lectures, demonstrations and laboratory periods dealing with fundamental aspects of disease processes. Subjects include inflammation and repair, regressive changes, circulatory disturbances, disorders of growth and neoplasia, and specific examples of inflammation. The dental students receive their lectures concurrently with the medical students. The laboratory periods are held separately.
78 hours.

2. Systemic Pathology. A survey course designed to stress those aspects of systemic pathology which have a special relation to the practice of dentistry.
The course is taught by means of formal lectures, gross and microscopic demonstrations, and informal teaching to small groups. Museum specimens, collections of microscopic slides, and current post-mortem and surgical material from participating hospitals are used in the teaching program.
42 hours.

3. Oral Pathology. A course in Pathology of the teeth, oral cavity and related structures. Forensic odontology, the oral manifestations of many

systemic diseases, and the systemic manifestations of oral disease are also discussed. This course is taught by means of formal lectures, which are supplemented by clinical and histopathological illustrative material and by the study of collections of microscopic slides. The students are encouraged to read the current literature in the field.
72 hours.

DEPARTMENT OF PHARMACOLOGY

Pharmacology. The course will outline the principles involved in the chemical transmission of nerve impulses, receptor theory, and in the mechanism of action, absorption, distribution, metabolism and excretion of drugs in general. Because of the great volume and variety of drugs in everyday use, and the prescribing rights of dental practitioners, the major groups of drugs used therapeutically will be discussed under the above headings, as well as their actions, clinical uses and toxic effects. In addition, emphasis will be put on drugs used in dentistry. The effects of typical drugs will be demonstrated in a series of laboratory/tutorial/workshop periods.
72 hours, Full course.

DEPARTMENT OF RESTORATIVE DENTISTRY

1. Operative Dentistry. A continuation of the first year course in which the student is prepared for the clinical environment. Particular emphasis is placed on cast intracoronal restorative procedures, esthetic anterior rehabilitative techniques, cariology, and the differential choice of restorative materials. Upon completion of this course and prior to the commencement of clinical practice the student is expected to demonstrate his ability to perform satisfactorily a wide spectrum of simple and advanced restorative treatment procedures.
Lectures 32 hours, Laboratory 96 hours.

2. Removable Prosthodontics. A course of lectures and demonstrations illustrating the biological and technological principles of complete and/or partial arch restoration by means of removable prostheses; applied anatomy and physiology; diagnosis, prognosis and treatment planning; occlusion factors; design and technical procedures.
32 hours.

A laboratory course affords practical experience in various clinical and laboratory techniques.
136 hours.

3. Fixed Prosthodontics. The aim of this course is to prepare the student for the clinical practice of Restorative Dentistry as it relates to Fixed Prosthodontics.
Special emphasis is placed on the preparation of students to treat patients with dental problems resulting from loss of teeth or aberration of function. Diagnosis, treatment planning, design and fabrication of prostheses, and restoration of occlusion are all stressed. The principles of dental hard tissue surgery involving extracoronal restoration are discussed along with the basic theoretical concept associated with each technique. The relationship between various restoration types and the patients' biological needs is considered. The technical skills and understanding gained in dental anatomy, dental materials science, occlusion, periodontics and operative dentistry are also applied. The lecture series is supplemented by practical laboratory assignments, demonstrations and appropriate reading assignments.
Lectures 32 hours, Laboratory 64 hours.

4. Dental Materials Science. Selected topics of various materials used in dental restorative procedures are discussed. Emphasis is placed on variables encountered when handling and applying the materials thus providing reason and insight to the proper selection of materials for the required dental restorative procedure. These topics are scheduled and co-ordinated with the preclinical presentations and exercises scheduled in Removable Prosthodontics, Fixed Prosthodontics and Operative Dentistry.
Lectures 16 hours.

5. Endodontics. A series of lectures designed to introduce the student to the clinical practise of endodontics. These lectures include a discussion of the etiology, diagnosis, treatment and prognosis of diseases of the dental pulp and the periapical tissues.
Lectures 8 hours.

A laboratory course augments the lecture series and is designed to acquaint the student with endodontic instruments and materials and to teach the basic skills and procedures necessary to treat a tooth endodontically. Participation in this laboratory course will serve as a basis for future clinical procedures.
Laboratory 9 hours.

DEPARTMENT OF SOCIAL DENTISTRY

1. The Practice of Dentistry. The current practice of dentistry is discussed. Emphasis is placed on the role of professional dental organizations, the Dental Act, the licensing body. The nature and extent of dental services are reviewed as are the characteristics of dental practices in rural and urban areas.

2. Social Aspects of Dental Care. Social factors play a central role in the utilization of dental services. These factors are identified and their relationship to the demand for dental care is discussed.

3. Health Economics and Payment for Dental Care. The various methods of payment for dental care are presented and contrasted. The present and future status of prepayment in dentistry is considered.

4. Public Dental Programs in Canada. A comprehensive look is taken at the administration, functions and services provided public dental programs at the federal, provincial and local levels.

5. Dental Personnel. The existing dental manpower resources are reviewed and analyzed in the light of the present and projected demand for dental services. The training, function and role of auxiliaries in the delivery of dental care are discussed.

6. Dental Health Programs in Selected Countries. A detailed overview of the development, organization, scope and effectiveness of dental programs in selected countries is presented. Implications for Canada are discussed.
24 hours.

INTERDEPARTMENTAL

1. Occlusion. The objectives are to teach the physiology of occlusion and mastication, jaw positions and movement patterns as they relate to the natural and artificial dentition. Also, the relationship between occlusion and the various branches of dentistry is explained as well as dysfunctional disturbances of the masticatory system. Occlusion is correlated with and procedures for occlusal adjustment are taught in this lecture and laboratory course. The Department of Oral Medicine organizes this program.
64 hours.

2. Oral Biology. To continue the development of a basic knowledge of neurophysiology. To introduce topics in neurophysiology which will be extensively developed and applied in the Oral Biology program of the third and fourth years.

Course Structure: The program consists of lectures and discussions on a functional overview of the nervous system, the brain as a control device, the general sensory systems, higher nervous activity, motor mechanisms and the special senses.
15 hours.

Third Year Curriculum, 1973-1974

DEPARTMENT OF ORAL MEDICINE

1. Oral Diagnosis.

(a) A lecture and seminar series which includes an outline of general medical conditions as they affect dental treatment. Medical laboratory aids and diagnostic aids in dentistry are discussed in detail. The small group seminars cover specific topics in Oral Diagnosis.
16 hours.

(b) Students are allocated to the oral diagnosis clinic for two separate weekly periods. There they diagnose routine and emergency cases.
40 hours.

2. Oral Medicine. A series of lectures on oral disease and the oral manifestations of systemic disease including dermatoses and blood dyscrasias.
8 hours.

3. General Medicine. Principles of General Medicine are presented in a series of lectures given by members of the Departments of Medicine and Psychiatry.
24 hours.

4. Periodontics. Lectures and clinical experience. Emphasis is placed on prevention and conservative therapeutics. Gingivectomy, plasty procedures, reattachment and treatment of emergency periodontal conditions are performed by the student. An introduction is made to advanced periodontal conditions and their treatment.
Lectures 16 hours, Clinic 96 hours.

5. Occlusion. Interdisciplinary sessions are held and clinical experience gained in the more advanced problems which involve the occlusion. Emphasis is placed on temporomandibular joint pain dysfunction syndrome.
32 hours.

6. Radiology. A course of lectures on the radiographic interpretation of disease processes which affect the teeth and jaws. The normal radiographic appearances and their normal variations are stressed as a basis for understanding and recognizing abnormal conditions which the student may encounter. Experience is furthered in the practice of techniques presented in the second year pre-clinical program during assignment to the department.
Lectures 12 hours, Clinic 45 hours.

DEPARTMENT OF ORAL SURGERY

The objective of the Third Year course in Oral Surgery is that the student should by the completion of the year competently (a) obtain suitable local anaesthesia for oral surgery; (b) extract an erupted tooth using forceps; (c) administer intravenous sedation; and (d) administer closed cardiac massage and mouth-to-mouth resuscitation. The objective is attained by the attendance at three groups of lectures:

1.a core course of lectures given by the Department of Surgery, Faculty of Medicine, basic principles of surgery. 14 hours; 2. a preliminary course of lectures and demonstrations on the principles of exodontics, 12 hours. 3. a course of lectures in general anaesthesia *AND RESUSCITATION* AS IT pertains to ORAL SURGERY. 12 hours. In addition instruction is given during interdepartmental teaching sessions and 90 hours are spent in the Oral Surgery clinic. A comprehensive course of lectures in oral surgery commences in the fourth quarter and continues into the fourth year. 8 hours

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Orthodontics.

(a) A course of lectures will be presented on diagnostic methods and treatment procedures used in the prevention and correction of irregularities of the teeth. Included will be the fundamental principles governing the design and construction of removable appliances in the preventive and corrective control of tooth movement.
24 hours.

(b) The clinic program is designed to provide opportunities for the diagnosis and treatment of selected clinical problems.

2. Paedodontics.

(a) A course of lectures and seminars will be presented that deal with the fundamentals of paedodontics and include child management, diagnosis and treatment planning, traumatized teeth, pulp therapy for the primary and young permanent dentition, current restorative concepts in paedodontics and prevention of caries and malocclusion.
24 hours.

(b) The clinical program in paedodontics is patient-centred and provides experience in the diagnosis and treatment of dental problems of a limited number of children.

DEPARTMENT OF RESTORATIVE DENTISTRY

1. Dentistry (Operative). A series of lectures devoted primarily to the clinical application of various restorative treatment techniques and procedures involved in the management of hard tissue lesions. Particular emphasis is placed on a biological approach to general restorative dentistry.

Detailed consideration is given the following topics: clinical diagnosis relative to operative dentistry; preventive periodontics in restorative procedures; clinical control of dental caries; differential choice of restoration; occlusion; composite systems and adhesives; clinical control of manipulative and biological variables. Differential diagnosis, treatment techniques and preventive procedures are stressed.

The clinical program permits direct application of the didactic lecture material. Upon completion of this course the student is expected to demonstrate (a) a reasonable degree of clinical judgement wherein routine decisions regarding diagnosis, treatment and general patient care may be made independently, and (b) a reasonable degree of clinical competence in performing routine treatment procedures with a predictable degree of success.

Lecture 24 hours, Clinical Experience 96 hours.

2. Endodontics. A series of lectures dealing in detail with all facets of endodontic treatment. Particular emphasis is placed on root canal morphology, diagnosis and treatment planning, armamentarium and sterilization, anaesthesia, bio-mechanical preparation, therapeutics, obliteration of the canal, bleaching of the endodontically treated teeth.

Endodontic surgery along with the newer concepts of endodontic periodontal surgery are discussed.

In conjunction with the Division of Fixed Prosthodontics the techniques of restoring the pulpless tooth are presented.

Lectures 24 hours, Clinical Experience 96 hours.

3. Fixed Prosthodontics. The aim of this course is to prepare the student for clinical practice as it relates to anterior fixed restorations. Special emphasis is placed on the replacement and restoration of teeth where esthetics is a problem. Those principles involving the variety of preparations employed in rendering a service where esthetics is of prime concern are discussed along with the basic theoretical concepts associated with each technique. Different kinds of veneering materials such as acrylic and porcelain are introduced and related to shade selection and color control. The lecture series is supplemented by practical laboratory assignments, slide and film presentations along with appropriate reading assignments.

Lectures 8 hours, Laboratory 16 hours, Clinical Experience 72 hours.

4. Removable Prosthodontics. A course of instruction in the clinical application of basic principles in prosthodontics. Students perform prosthodontic services for patients and are given ample opportunity to become clinically proficient in this discipline.

Lectures 24 hours, Clinical Experience 96 hours.

DEPARTMENT OF SOCIAL DENTISTRY

1. Jurisprudence. Introduction to legal aspects of the practice of dentistry dealing with contracts, leases and other legal documents.

2. Practice Administration. Introduction to the topic of practice administration dealing mainly with physical facilities related to dental practice, methods of practice, dental insurance, etc.

3. Professional Development. The professional man has a responsibility to be reasonably competent in oral communication. Arrangements will be made to provide students with the opportunity to give dental health talks to various community groups.

4. **Behavioral Science.** The psychology of doctor-patient relationship will be considered. The mechanisms of sensation and perception, the significance and effects of anxiety, personality types and their extremes, and methods applicable for dealing with them.

5. **Dental Public Health and Preventive Dentistry.** Social, legal and political aspects of fluoridation will be covered. Various aspects of Dental Health Education will be discussed as they relate to prevention and control of dental diseases. The area of preventive dentistry will be expanded as an extension of material previously covered. Field visits and exercises will be arranged to better acquaint the students with community aspects of dentistry.
40 hours.

INTERDEPARTMENTAL

Weekly sessions throughout the year will be both clinically oriented and directed towards the teaching of topics common to several Departments of the Faculty, including the Basic Sciences. The appropriate Departments will collaborate in the teaching of the topics and student involvement will include case presentations, seminars and televised procedures.

128 hours.

Clinical Pathological Conferences

Conferences are held throughout the academic year as part of the inter-*departmental teaching program. Interesting* cases are discussed from the standpoint of clinical, radiographic and pathological findings.

Conjoint Occlusion

(Refer to *Third Year Curriculum*, Department of Oral Medicine, Paragraph 5.).

DEPARTMENT OF CLINICS

1. (a) **Clinical Orientation** A pre-clinical session without patients presented by all clinical departments to familiarize the student with routine clinic procedures and administration and with the operation and maintenance of cubicle equipment.
18 hours.

(b) **Oral Diagnosis** Prior to commencement of clinical practice there will be a preliminary oral diagnosis session conducted by the Department of Oral Medicine for the examination, diagnosis and treatment planning of the introductory patients assigned to Third Year students. Regular oral diagnosis sessions will be carried on throughout the year as required.
45 hours.

2. **Clinical Practice.** The periods allotted will provide an opportunity for the students to apply the principles taught in the pre-clinical years to the actual treatment of patients in an atmosphere as closely related to private practice as is possible in a teaching institution. Clinical sessions are scheduled in a manner to permit students to retain their same cubicle throughout the year. The student will also be assigned to the various clinical departments and divisions where he will carry out the normal procedures involved and observe the more advanced techniques demonstrated by the instructors. These assignments include Oral Surgery, Radiology and *Emergency Clinic.*
768 hours.

3. Summer Clinic. A continuation of the periods of clinical practice. The student may be required to bring up to standard any clinical phases which may not have been satisfactorily completed during the regular sessions. If not he may have the opportunity of concentrating on selected aspects of the treatment services.
162 hours.

4. Individual student evaluation will be made on the basis of patient administration and clinic management.

Fourth Year Curriculum, 1973-1974

DEPARTMENT OF ORAL MEDICINE

1. Oral Diagnosis.

(a) A seminar series in which more complicated cases for Oral Diagnosis are discussed. Students present cases or topics are prepared.
12 hours.

(b) Students are allocated to the Oral Diagnosis Clinic for two weekly periods in which they diagnose routine and emergency cases.

2. Oral Medicine. A lecture series in which there is emphasis on the therapeutic aspects of Oral Medicine, e.g. drug selection and prescription writing.
8 hours.

3. Periodontics. Management of advanced periodontal disease involving mucogingival problems, osseous surgery, hard and soft tissue grafting and systemic complications are discussed. Clinical experience is aimed at the development of basic skills rather than the achievement of great surgical expertise.
Lectures 12 hours, Clinic 72 hours.

4. Radiology. Clinical assignments in which proficiency is gained and experience extended in all aspects of radiographic techniques provide a logical extension of lecture and laboratory sessions. Case reporting under guidance affords a practical application of lecture material. Seminars which correlate clinical observations, pathologic findings and radiographic appearances provide further opportunity to improve the ability to interpret radiographs.
Lectures 12 hours, Clinic 12 hours.

DEPARTMENT OF ORAL SURGERY

The objective of the Fourth Year course in Oral Surgery is that the student should:

(a) comprehend the theory, practice and scope of oral surgery.

(b) obtain experience in minor oral surgery under local anaesthesia.

(c) obtain experience in exodontic-sunder general anaesthesia.

(d) through hospital experience be able to practice within the hospital environment.

(e) obtain didactic and practical experience in the use of nitrous oxide sedation techniques as they pertain to dentistry.

The objectives for the Fourth Year are met by a continuation of the course of lectures in oral surgery started in the fourth quarter of Third Year continuing during the first three quarters. 24 hours.

Eight seminars on broad topics in oral surgery are held during the third quarter. 8 hours.

Further clinical experience is obtained after demonstrating competence in exodontics. Minor oral surgery, simple impactions and trans-alveolar extractions under local anaesthesia are encouraged.

In addition extractions under general anaesthesia are carried out in the out-patient operating room. Clinic 72 hours.

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Orthodontics.

(a) The lecture and seminar program will be devoted to diagnostic techniques, treatment procedures and problems likely to be encountered in general practice.

20 hours.

(b) The clinical program will be a continuation of the Third Year Program.

2. Paedodontics.

(a) Lectures and seminars are directed to specific clinical problems and the review of current Paedodontic literature.

20 hours.

(b) The clinical program is an extension of the Third Year Program into the more complex problems found in general practice.

DEPARTMENT OF RESTORATIVE DENTISTRY

Restorative Dentistry. A series of lectures and seminars on advanced restorative dentistry to include the following: Maxillo-facial prosthodontics; management of cleft palate; comprehensive diagnosis and treatment planning; patient and practice management; advances in restorative materials; the role of auxiliaries; advanced endodontics; pulp biology and research.

40 hours.

DEPARTMENT OF SOCIAL DENTISTRY

1. Practice Administration. Fundamental considerations related to professional and efficient care for a maximum number of patients, having due regard for the individual dentist and patient concerned. Consideration will be given to the principles involved in establishing, organizing and administering a dental practice.

2. Jurisprudence. Principles of law, legislation and ethics related to the practice of dentistry are discussed. Purposes and functions of the legal and voluntary agencies of the profession and the administrative structure of organized dentistry will be considered.

3. Dental Public Health. Current programs and their basic components and the development of a Dental Public Health Program in an area will be covered.

16 hours.

INTERDEPARTMENTAL

The program introduced in the Third Year will continue for the second and third quarters of the Fourth Year.

64 hours.

Hospital Experience. Attendance at a general hospital will enable the future dentist to effectively practice within the hospital environment. Instruction and demonstrations are given in hospital protocol, admission and discharge of patients, assistance within the operating room and participation in hospital rounds.

60 hours.

Conjoint Occlusion. Lecture and seminars will discuss the establishing of the occlusion for difficult cases. Orthodontics and Restorative Dentistry will be responsible for presenting the seminars.

Clinical Pathological Conferences. The series of conferences which commenced in Third Year continue on through Fourth Year.

Oral Cancer. The Division of Oral Pathology organizes this interdepartmental course in which the diagnosis, treatment, and rehabilitation of the patient with cancer of the oral cavity are discussed.

DEPARTMENT OF CLINICS

1. Clinical Practice.

(a) The first three quarters of the curriculum are a progression of the third year clinical sessions with assignment of cases involving more comprehensive and more complex treatment programs. The periods allotted also include blocks of time during which the student will function in the hospital environment.

Assignments include Oral Surgery, Emergency Clinic, and Hospital Experience.
600 hours.

(b) The fourth quarter may include additional periods of clinical practice if the student is required to improve his competence in specific areas.

2. Student evaluation will be made on the same basis as for Third Year.

AREA OF CONCENTRATION

The last quarter of the Fourth Year is set aside for special studies by the student in a research or clinical area of interest to him. The student is expected to plan his activities for this eight-week period with an adviser of his choice and to proceed as independently as possible under the guidance of his adviser. A report on his activities is required and in the case of research, may take the form of a paper ready for publication.

DEPARTMENT OF ANATOMY

Room 472A Medical Sciences Building

Chairman: D. G. Montemurro, BA, MSc, PhD, UWO
PROFESSORS: Barr, Buck, Montemurro ASSOCIATE PROFESSORS: Donisch, Gwinnett, Gwyn, Shaver, Singh, Soltan, Wilson ASSISTANT PROFESSORS: Altmann, Clattenburg, Flumerfelt, Gammal, Kiernan, Sergovich HONORARY LECTURERS: Robinow, Walden LECTURER: Cline INSTRUCTORS: Jory, Leyshon, Warma

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Room 352, Medical Sciences Building

Department Head: R. G. E. Murray, BA, MA Cantab; MD, CM McGill; FRSC
PROFESSORS: Fitz-James, Murray, Robinow, Whitby CLINICAL PROFESSOR: Hatch ASSOCIATE PROFESSORS: Ebisuzaki, Medzon, Robinson, Zajic CLINICAL ASSOCIATE PROFESSOR: Bakerspigel ASSISTANT PROFESSORS: Black, Cheevers, Percy, Rozanis, Sinclair, Singhal, Strejan, Wilkins CLINICAL ASSISTANT PROFESSOR: Campsall HONORARY LECTURERS: Chodirker, Hannay, Roslycky, Toogood LECTURER: Galsworthy

DEPARTMENT OF BIOCHEMISTRY

DEPARTMENT OFFICE: 316 Medical Science Building

Acting Chairman: Dr. K. P. Strickland, BSc MSc PhD UWO
PROFESSORS: Bigelow, *Brownstone, Carroll, Fitz-James, *Hobkirk, McCarter, McCurray, Rossiter, Smith, Stewart, Strickland ASSOCIATE PROFESSORS: Ball, *Griffiths, Heagy, Magee, *Tustanoff, Walker, Webling CLINICAL ASSOCIATE PROFESSORS: *Binns-Smith, *Haines, *Haust ASSISTANT PROFESSORS: Cook, Donisch, Galsworthy, *Garg, Gatfield, Gordon, Guthrie, McDonald, Possmayer, Trevithick INSTRUCTOR: Boyadjian HONORARY LECTURERS: Cheevers, Chefurka, Hudson, Krupka, MacPherson, Spencer, Vardanis, Wolfe

* Member of Division of Clinical Biochemistry

DEPARTMENT OF ORAL MEDICINE

Room 0134 Dental Sciences Building

Chairman: R. I. Brooke, B Ch D, L.D.S. Leeds: MRCS England: LRCP London: FDSRCS England
PROFESSORS: Brooke, Moore ASSOCIATE PROFESSORS: Johnson, Petersen, Reid, Zulgar-nain ASSISTANT PROFESSORS: Kogon, Ruprecht, Smith CLINICAL LECTURERS: Beam, Cornish, Hunter, Jack, Klein, Pellow, Thompson, Wainright, Whitman, Whiteman CLINICAL INSTRUCTORS: Clark, Dinniwell, Greenfield, Morris, Nordine, Reid

DEPARTMENT OF ORAL SURGERY

Room 0130, Dental Sciences Building

Chairman: A. G. Parnell FDS, RCS (Eng)
PROFESSORS: Parnell ASSOCIATE PROFESSORS: Schofield ASSISTANT PROFESSORS: Goldberg CLINICAL LECTURERS: Glennie CLINICAL INSTRUCTORS: McFarlane, Kandell

DEPARTMENT OF PAEDIATRIC DENTISTRY

Room 1012 Dental Sciences Building

Chairman: W. H. Feasby, DDS, Toronto; Dip Paedo, Toronto; MSc, Manitoba
PROFESSORS: Eastwood, Feasby, Hunter ASSOCIATE PROFESSOR: Wright CLINICAL LECTURES: Campbell, Ecclestone, Scott, Way CLINICAL INSTRUCTORS: Begg, Biesenthal, Frey, Goodbrand, King, Smith

DEPARTMENT OF PATHOLOGY

Room 4045 Dental Sciences Building

Department Head: A. C. Wallace, BA, MD, UWO; FACP; FRCP(C)
PROFESSORS: Haust, Kaufmann, McCaughey, Wallace ASSOCIATE PROFESSORS: Frei, Gardner, Warren ASSISTANT PROFESSORS: Ball, Gilbert, Lewis, Sapp CLINICAL PROFESSORS: Mills, Smout CLINICAL ASSOCIATE PROFESSORS: Davies, Slinger CLINICAL ASSISTANT PROFESSORS: Enriquez, Saeed, *Troster, Turnbull* INSTRUCTORS: *Adilman, Bell, Frishette, Rota*

DEPARTMENT OF PHARMACOLOGY

Room 275 Medical Sciences Building

Department Head: C. W. Gowdey, BA, MSc, DPhil Oxon
PROFESSORS: Gowdey, Hamilton, Parker ASSOCIATE PROFESSORS: Colhoun, Hirst, Philp ASSISTANT PROFESSORS: Hersey LECTURERS: Borda, Lovegrove, Meltzer, Spoerel, White INSTRUCTORS: Dinel, Geddes, Hansford

DEPARTMENT OF PHYSIOLOGY

Room 223 Medical Sciences Building

Chairman: V. B. Brooks, BA Toronto; MS Chicago; PhD Toronto
PROFESSORS: *Armstrong, Brooks, Calaresu, Mogenson* ASSOCIATE PROFESSORS: Bondy, Critz, Dellow, Harding, Mercer, Seguin, Squires, Vanderwolf, Wiesendanger ASSISTANT PROFESSORS: Cooke, Cunningham, Girvin, Lodge, O'Hea, Weick VISITING ASSISTANT PROFESSORS: Swart LECTURERS: Reese, Sellery HONORARY LECTURERS: Chess, Manning, Rounthwaite INSTRUCTOR: Bolter

DEPARTMENT OF RESTORATIVE DENTISTRY

Room 0145, Dental Sciences Building

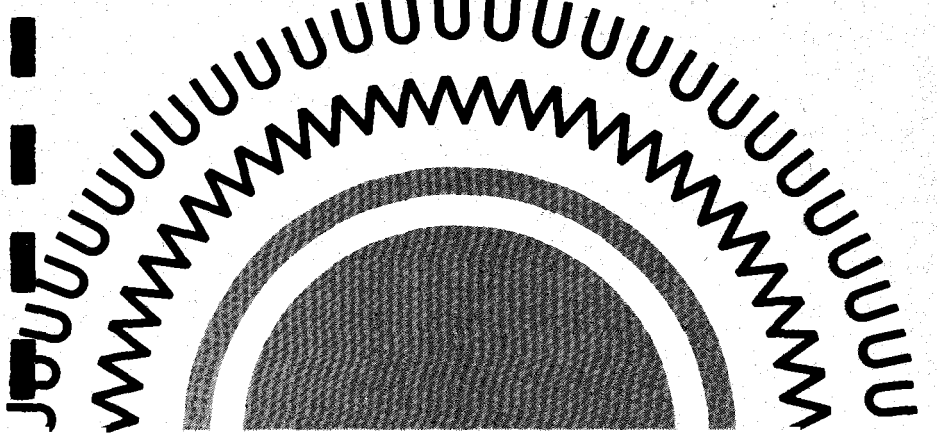
Chairman: R. E. Jordan, BA, Saskatchewan; DDS, Alberta; MSD, Washington; FICD
PROFESSORS: Jordan ASSOCIATE PROFESSORS: Gwinnett, Johnson, Ryan, Sills, Skinner, Suzuki, Teteruck ASSISTANT PROFESSORS: Bunston, Gilboe, Gratton CLINICAL ASSISTANT PROFESSORS: *Bedrosian, Hugill* CLINICAL LECTURERS: Halip CLINICAL INSTRUCTORS: Brown, Emmerton, Fowler, Guest, Kozoriz, Mills, Muxlow, Paiement, Reddon, Sears, Seneshen, Setterington, Taylor

DEPARTMENT OF SOCIAL DENTISTRY

Room 1007 (B-C-D) Dental Sciences Building

Chairman: B. P. Martinello, DDS, DDPH, Toronto
ASSOCIATE PROFESSORS: Baird, Dunn, Martinello ASSISTANT PROFESSORS: Banting CLINICAL INSTRUCTORS: Currie, Leake

Faculty of Medicine



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PROFESSORS EMERITUS
Macallum, A.B., BA, MD, PhD Toronto; FRSC
Stavraky, G.W., MD Odessa; MSc, MDCM McGill; FRSC
Tew, W.P., MB Toronto; FRCS(Edin), FRCS(C), MRCOG, FRCOG, LLD UWO
Watson, E.M., MD, MSc UWO; MRCP(Edin), FRCP(Edin), FRCP(C), FACP

Faculty of Medicine

OFFICERS OF ADMINISTRATION

Dean: Douglas Bocking, MD
Assistant Dean—Postgraduate Education: E. R. Ecclestone, MD
Assistant Dean—Continuing Education: A. T. Hunter, BA, MD
Assistant Dean: J. H. Watson, MD, CM
Health Sciences Librarian: M. Anne Seheult, BA, BLS
Administrative Officer: W. S. McBean
Administrative Assistants: Lorraine Evans, BA; Helen McCrady, BA

ACADEMIC CALENDAR FOR UNDERGRADUATE MEDICINE, 1973-1974 SESSION

1973

June 25, Monday	First Term begins for Fourth Year.
August 24, Friday	Examinations for removal of conditions begin at 9:00 a.m. in the Medical Sciences Building.
August 27, Monday	Second Term begins for Fourth Year.
September 4, Tuesday	First Trimester begins for First Year.
September 10, Monday	First Quarter begins for Second and Third Years.
October 8, Monday	Thanksgiving Day - Holiday with classes cancelled.
October 29, Monday	Third Term begins for Fourth Year
November 5, Monday	Second Quarter begins for Second and Third Years.
December 3, Monday	Second Trimester begins for First Year.
December 19, Wednesday	Christmas Vacation for First, Second and Third Years begins at 5:30 p.m. (Fourth Year students will each receive one week off during the Christmas vacation period, to be arranged by the Chairman or Head of the Department concerned).

1974

January 3, Thursday	Lectures resume for First, Second and Third Years.
January 7, Monday	Fourth Term begins for Fourth Year.
January 14, Monday	Third Quarter begins for Second and Third Years.
January 14, Monday	Payment of final instalment of fees is required on or before this date.
March 11, Monday	Third Trimester begins for First Year; Fourth Quarter begins for Second and Third Years; Fifth Term begins for Fourth Year.
April 12, Friday	Good Friday - Holiday with classes cancelled.
May 3, Friday	Classes end for Second and Third Years.
May 10, Friday	Examinations begin for Second and Third Years.
May 12, Sunday	Fifth Term ends for Fourth Year.
May 20, Monday	Victoria Day - Holiday with classes cancelled.
*May 22, Wednesday	Medical Council of Canada Examinations begin for Fourth Year.
May 31, Friday	Classes end for First Year.
*June 7, Friday	Spring Convocation (Medicine).

*These are tentative dates

Regular meetings of the Council of the Faculty of Medicine or its Executive Committee are held on the third Monday of every month, September to June inclusive.

EXAMINATION TIMETABLE

FIRST, SECOND AND THIRD YEARS, 1973-1974

Method and time of evaluation of First Year students will be announced. The following examinations are written at the termination of the courses: Biochemistry, Clinical Sciences and Genetics in the Second Year; Eye, ENT, Clinical Biochemistry and Physical Medicine in the Third Year. Final examinations in remaining subjects in Second and Third Years will be written May 10th to 17th inclusive.

FINAL YEAR EXAMINATION TIMETABLE

Medical Council of Canada Examinations, Spring of 1974

The examinations of the Medical Council of Canada will be written May 22nd, 23rd and 24th, 1974.

University Examinations, 1973-1974

Students are evaluated by their attendance and performance on each Service and by whatever method the Department involved selects at the termination of each rotation. Students with inadequate performance may be required, where the timetable permits, to take part of the Elective period to bring their performance up to the required level.

ORGANIZATION OF THE FACULTY

The Senate of the University is responsible for the academic policy of the Faculty. The Senate vests in the Council of the Faculty of Medicine executive powers in respect of details of admission of students, curricula and examinations. The administration of the affairs of the Faculty is the responsibility of the Board of Governors of the University, through its Health Sciences Committee and the Vice President (Health Sciences).

The Council of the Faculty is composed of all full-time members of staff of the rank of Lecturer to Professor, part-time members of staff of professorial rank, the Vice President (Academic), the Vice President (Health Sciences), the Dean of Medicine, Assistant Deans, the Deans of the other Health Sciences Faculties, the administrators of the major teaching hospitals, representatives of the Faculties of Arts, Social Sciences and Science, the President of the Hippocratic Society, and the President and one other student representative from each of the four years. The Vice Chancellor of the University is a member of the Council of the Faculty and its Committees. The Council of the Faculty meets quarterly. All business during the intervening months is conducted by the Executive Committee of the Council of the Faculty, consisting of Chairmen and Heads of Departments, Directors of Programs, the Vice President (Health Sciences), the Dean, and the President of the Hippocratic Council.

The Council of the Faculty divides its detail work related to undergraduate instruction among standing Committees which, being non-executive, are responsible to the Council of the Faculty.

Joint Relations Committees have been established with representatives from the University and the following affiliated teaching institutions and organizations: London Psychiatric, St. Joseph's, Victoria and Westminster Hospitals, The Children's Psychiatric Research Institute and the London Health Association.

HISTORY OF THE FACULTY OF MEDICINE

"The Western University of London, Ontario" received its charter from the Legislature of the Province of Ontario in 1878. The first classes graduated in Arts and Medicine in 1883. Although the Faculty of Arts was closed from 1885 to 1895, the Faculty of Medicine has maintained an unbroken existence since its founding. In 1912 control of the Medical School by a joint stock company ended and it came under the direct control of the Board of Governors of the University. At that time the Medical School was situated at the north-east corner of York and Waterloo Streets. In 1921, the Faculty of Medicine moved its Basic Science Departments to a new school on the north-east corner of South and Waterloo Streets, adjacent to Victoria Hospital. In the summer of 1965, the administrative offices, the medical library, the Basic Science Departments and the Department of Psychiatry and Preventive Medicine, with ancillary services, moved into the new Medical Sciences Building, which is directly contiguous with the Cancer Research Laboratory, the Dental Sciences Building and the Faculty of Nursing, which, along with the University Hospital, comprise the Health Sciences Centre. The administrative offices of the Departments of Ophthalmology and Therapeutic Radiology are located at Victoria Hospital, and the Department of Paediatrics at the War Memorial Children's Hospital. The administrative offices of the Departments of Anaesthesia, Clinical Neurological Sciences, Medicine, Obstetrics and Gynaecology, Otolaryngology, Physical Medicine and Rehabilitation, Psychiatry, Diagnostic Radiology and Surgery are located in the new University Hospital. The Departments of Epidemiology and Preventive Medicine and of Family Medicine are based at the Medical Sciences Building.

The associated teaching hospitals, through their respective administrations, provide clinical facilities for the Faculty of Medicine.

LIBRARIES

The Health Sciences Library, located on the first floor of the Medical Sciences Building, serves the Faculties of Medicine, Dentistry and Nursing. It contains over 101,000 volumes and regularly receives the leading Health Sciences periodicals. The library has an interesting collection of several thousand volumes dealing with the history of the medical sciences.

Adjacent to the library is a study hall for the use of the students in the Health Sciences.

Medical students are also permitted to use the library facilities in Victoria Hospital, St. Joseph's Hospital, Westminster Hospital and the Children's Psychiatric Research Institute.

CLINICAL FACILITIES

University Hospital

This 451-bed Hospital, which is operated by the London Health Association, is part of the Health Sciences Centre on campus. Construction was completed in the fall of 1972; the first patients were admitted November 2nd, 1972.

Victoria Hospital

Victoria Hospital has a total of 901 beds and 59 bassinets, of which the majority are available for teaching, 438 being in clinical teaching units and under the jurisdiction of Clinical Chiefs of Departments. There are also 292 *"modified"* teaching beds which are available to the Clinical Teachers, making a total of 730 teaching beds and bassinets.

The Hospital is approved by the Canadian Council on Hospital Accreditation, by the Canadian Medical Association and by the Royal College of Physicians and Surgeons of Canada for Interne and Resident training.

There are special facilities for the investigation and treatment of Cardiac and Pulmonary disorders, malignancy and other diseases.

Thirty-one Out-Patient Clinics are held, in addition to those under the direction of the Ontario Cancer Treatment and Research Foundation and the Crippled Children's Treatment Centre.

Victoria Hospital supports a Regional School for Nursing Education and is the site for the Regional School for Medical Laboratory Technologists for Southwestern Ontario. The Hospital also participates in other training programs, such as a Centralized School for X-ray Technicians, Dietetic Internes, Physiotherapy Internes, training of Registered Nursing Assistants, training of Food Supervisors, and others.

The War Memorial Children's Hospital

The War Memorial Children's Hospital, the Paediatric Department of Victoria Hospital, is situated directly opposite the main Hospital. Of the total beds listed above, there is accommodation for 174 Paediatric patients. The London and District Crippled Children's Centre has a two-floor clinic attached to the Hospital for the care of handicapped. A Child Guidance Clinic adjacent to the Hospital provides psychiatric out-patient services for children.

St. Joseph's Hospital

St. Joseph's is a general active treatment hospital owned and operated by the Sisters of St. Joseph. Its rated capacity is 583 beds with 90 bassinets. All patients are available for demonstration teaching and 382 beds are in Clinical Teaching Units under the supervision of 29 full-time teachers.

The Hospital is approved by the Canadian Council on Hospital Accreditation, by the Royal College of Physicians and Surgeons of Canada for graduate training as part of the University affiliated programs and by the Canadian Dental Association for training of dental internes.

Included in the Obstetrical Service is a 14-bed ante-natal unit with obstetrical neonatal intensive care units for supervision and delivery of patients with high risk pregnancies.

The paediatric department has 80 beds.

An advanced Training Program in Family Medicine is based at the Family Medical Centre located on Oxford Street.

Other educational programs include Nursing Education and participation in training of Laboratory Technicians and X-ray Technicians as well as Registered Nursing Assistants. The Hospital is also approved for the In-service training of Respiratory Technologists and Nuclear Medicine Technicians.

Westminster Hospital

This Hospital is situated at 777 Base Line Road and is operated by the Department of Veterans' Affairs. It is a hospital of 1,150 beds with three principal services—Medicine, Surgery and Psychiatry. It is approved by The Royal College of Physicians and Surgeons of Canada for graduate training and accredited by The Canadian Council on Hospital Accreditation. Over 25,000 patients are seen in the out-patient clinics annually.

London Psychiatric Hospital

This Hospital is operated by the Ministry of Health for the treatment of psychiatric disorder. Approximately 500 beds provide both inpatient, day-care and outpatient

services. Special services programs include Adolescent and Addiction Wards. A partial hospitalization program offers day, evening and weekend care. The Hospital is used for clinical instruction in Psychiatry as part of the training within the disciplines of Medicine, Psychology, Social Work, Nursing, Occupational Therapy and other allied health professions. As an Accreditated Hospital, it is recognized by The Royal College of Physicians and Surgeons of Canada for graduate training in Psychiatry.

St. Thomas Psychiatric Hospital

This 1200-bed Hospital, situated on No. 4 Highway, one-and-a-half miles south of St. Thomas, is recognized by The Royal College of Physicians and Surgeons of Canada for graduate training in Psychiatry and is used for clinical teaching in Psychiatry for allied health professions. It provides in-patient, out-patient, day-care, and emergency services for all types of psychiatric disorders, mainly the major psychoses, and includes a special psychogeriatric unit. There are programs of research and community education. The annual admission rate is approximately 800.

Sir Adam Beck Chest Diseases Unit

This Unit was formed at the site of the Sir Adam Beck Memorial Sanatorium in 1969 in order to expand the work of that hospital and to include all aspects of chest diseases including pulmonary tuberculosis. The Unit has now transferred to the University Hospital, London, and will consist of 30 beds for the investigation, diagnosis and treatment of all forms of chest diseases including pulmonary tuberculosis. In addition the Unit will include a further 18 beds for cardiothoracic surgery.

The Unit will continue its Outpatient Services and its role for the management of non-pulmonary tuberculosis, and retain its close relationship with the Provincial Chest Clinic.

St. Mary's Hospital

St. Mary's Hospital of 207 beds, owned and operated by the Sisters of St. Joseph of London, is for the care of long term illness. It operates an active department of Physical Medicine and Rehabilitation.

Bethesda Home and Hospital

Patients in Bethesda Home and Hospital are available for teaching purposes in Obstetrics. In addition to the usual confinement cases, two pre-natal clinics are held weekly.

Parkwood Hospital

This Hospital, owned and operated by The Women's Christian Association of London, has 186 beds for patients suffering from chronic illness. Active medical rehabilitation services are part of the treatment facilities provided.

The Children's Psychiatric Research Institute

This is a regional children's centre owned and operated by the Mental Health Branch of the Ontario Department of Health. There is an out-patient facility for children suspected of being mentally retarded, perceptually handicapped or emotionally disturbed. An inpatient facility accommodates 150 children. The Institute offers clinical diagnosis, assessment, treatment and counselling, using a multi-discipline model. A broad range of research studies are carried out by C.P.R.I. staff in collaboration with The University of Western and postgraduate medical students in Psychiatry, Paediatrics and Family Medicine. Special training programs for other professions are also available.

Occasional use is made of the McCormick Home for Aged People and the various Orphanages, for clinical instruction.

ADMISSION REQUIREMENTS, FACULTY OF MEDICINE

Students in the following categories are eligible to apply for admission to the first year of the four-year program in the Faculty of Medicine:

1. Those who are in, or who have successfully completed, a second year program at an Ontario university, provided that the program has included a minimum of four honors courses or equivalent within the first ten courses attempted. All applicants must have successfully completed one full laboratory course in each of Biology, Chemistry and Physics and are advised that it is to their advantage to have successfully completed one course in Behavioral Science. (The Admissions Committee will consider applications from candidates who achieve exceptional standing in first year programs in the Faculty of Science at The University of Western Ontario.)
2. Those in the final year of, or who have successfully completed, a graduate or undergraduate degree program at a recognized university. Graduate students will be expected to have completed all requirements for their graduate degree prior to registration in the Faculty of Medicine. Candidates in this category are advised that it is to their advantage to have successfully completed one full laboratory course in Biology, Chemistry and Physics and one course in Behavioral Science.

Prior to being permitted to register in the Faculty of Medicine, applicants who are granted admission will be required to have demonstrated competence in Organic Chemistry to the level of the first full course in Organic Chemistry offered at The University of Western Ontario.

All applicants including undergraduate, graduate, special, makeup and qualifying students, are reminded that careful assessment will be made of their academic record throughout all years at University.

Priority is given, all other things being equal, to Canadian citizens or landed immigrants who are residents of Southwestern Ontario and those areas of Ontario not serviced by an Ontario Medical School. Applications will not be accepted from applicants who are not Canadian citizens or landed immigrants. (Two positions may be available for students supported by The Canadian International Development Agency.)

ADVANCED STANDING

Unless circumstances are exceptional applications from other than Canadian citizens or landed immigrants will not be considered; similarly applications will at another medical school.

Students registered at another medical school will not generally be considered for admission with advanced standing to the Faculty of Medicine unless they can provide evidence, acceptable to the Committee on Admission with Advanced Standing, of compassionate or other reasons for wishing to transfer. A letter of support from the Dean of the medical school at which such students are studying should accompany the application.

All students applying for admission with advanced standing may be required by the Committee on Admission with Advanced Standing to submit the results of the Medical College Admission Test. In addition, they may be required to attend for interviews with members of the Committee.

Applicants from universities accredited by the Association of Canadian Medical Colleges or the Association of American Medical Colleges may be considered for admission with advanced standing without having to write examinations. However, the Committee on Admission with Advanced Standing reserves the right to review an individual application and to impose any conditions which it considers appropriate before admission will be granted.

Applications from students or graduates of universities which are not accredited by the Association of Canadian Medical Colleges or the Association of American Medical Colleges may be considered for admission with advanced standing if they successfully pass examinations required by the Committee.

Admission may be granted with advanced standing for the work of the First and Second Years, but advanced standing shall not be granted towards the work of the Third or Fourth Years.

APPLICATION FOR ADMISSION

1. First Year

Application for admission to the Faculty of Medicine must be made upon the regular application form which may be obtained from the Registrar's Office, The University of Western Ontario, London, Ontario, N6A 3K7. The completed application forms and the supporting documents (originals) are to be mailed to the Director of Admissions, The University of Western Ontario, London, Ontario, N6A 3K7, NOT LATER THAN FEBRUARY 1, 1973, for the class starting in September 1973 and December 1, 1973, for the class starting in September 1974.

A student registered at The University of Western Ontario must:

(a) submit a completed application for admission form;

(b) write the Medical College Admission Test in October or May and request that his test scores be MAILED directly to the Director of Admissions. Students must make their own arrangements for the administration of this test by writing to the Psychological Corporation, 304 East 45th Street, New York 17, N.Y., U.S.A.

A student who has never registered at The University of Western Ontario must:

(a) attach to his completed application form all his Ontario Grade 13 certificates (originals) or certified transcript of his completed secondary or high school record;

(b) request the Registrars of all universities, colleges and other institutions of post-secondary education which he has attended or is attending, to mail directly to the Director of Admissions certified transcripts of his record;

(c) request the Registrar of the University, which he is attending in 1972-73, to mail directly to the Director of Admissions a second transcript of his record at the end of his current registration;

(d) write the Medical College Admission Test in October or May and request that his test scores be MAILED directly to the Director of Admissions. A student must make his own arrangements for the administration of this test by writing to the Psychological Corporation, 304 East 45th Street, New York 17, N.Y., U.S.A.

When the initial documentation has been processed, the Committee on Admissions, meeting in February or March, may recommend Early Admission. On the other hand, in some instances an applicant may be advised that it will not be possible to gain admission in September, 1973. This will provide more time to

make a decision regarding alternative plans for the forthcoming year. Final determination on many applications, however, will be deferred until the marks on final examinations are available.

2. Advanced Standing

A student of another Medical School who applies for admission to the Faculty of Medicine of this University with advanced standing must submit the following:

(a) the completed application form;

(b) certified transcripts of his secondary or high school record;

(c) certified transcripts of his record at all colleges, universities and medical schools attended;

(d) a Calendar of the Medical School in which he has studied.

REGISTRATION

Students accepted for admission into any year of Medicine will be advised directly by the Registrar's Office concerning registration.

No student will be registered after the designated registration date except by special permission of the Dean. Those who register late will pay a late registration fee (see FEES below).

FEES

Fees are payable in full at the time designated by the Office of the Registrar, but if necessary they may be divided into two instalments, $450 payable with Registration and $382.50 payable on the first day of the Third Quarter, January 14th, 1974. Students may not attend lectures or examinations, nor be recommended for any degree or diploma until their tuition fees, fines and other accounts owed to the University are paid, except by permission of the Dean and the Comptroller.

Undergraduate Students

For full-time intramural students $827.50*

The above amount includes, for full-time students, Student Activity and Health Service fees totalling ..... $ 54.00

Note: A student who, by reason of sickness or other cause, is in attendance one-half a year or less will be charged $450.00

For part-time or special students, fees are set by the Registrar.

Other Charges

Evaluation of non-Ontario certificates for admission ..... $ 2.00

Transcript of record, each copy ..... $ 1.00

Late registration ..... $ 25.00

Examination for the removal of conditions, each paper ..... $ 15.00

The above-mentioned fees represent within the University as a whole less than 15% of the cost of your medical education. The balance is provided by Government grants, endowment income and other grants and gifts.

* The sum is increased by $5.00 if payment is not made in one instalment.

NOTE: The Board of Governors reserves the right to amend the above-mentioned fee structure after the printing of this Announcement.

STUDENTS' EXPENSES

The following statement of expenses is given for the guidance of students who are not familiar with the cost of board, room, etc. These items vary from year to year, and depend also on the individual taste of students:

Room and Board	
Approximately $28.00 per week	$950.00 to $1,150.00
Tuition and Prescribed Accessory Fees	$827.50
Books	Appr. $200.00
Microscope (needed first week of First Year)	$180.00
Instruments	$10.00 to $30.00
Registration with The College of Physicians and Surgeons of Ontario, if qualifications obtained outside Canada	$15.00
Fees in connection with Medical Council of Canada Examinations (Final Year Only)	$125.00
The College of Physicians and Surgeons of Ontario fee for Enabling Certificate (Final Year Only)	$10.00

RESTRICTED BURSARIES

These bursaries are generally awarded to students having an average of B (70%) or better in their previous year's work. In every case it is absolutely essential that the applicant demonstrate genuine financial need. Completion of an application form for the Ontario Student Awards automatically gains consideration for all the restricted and unrestricted bursaries except where otherwise stated.

The following bursaries are restricted by residence, sex, course, year, as indicated:

The American Medical Association Education and Research Foundation Bursary: Up to $200 each. Available to students in any year of Medicine.

Dr. James L. Anderson Memorial Bursaries: Up to $250 each. Available to students in any year in the Faculty of Medicine. The fund for these bursaries was established by a bequest of the late Mrs. Clare Leland Anderson as a memorial to her husband, Dr. James L. Anderson, Meds '09.

Bradshaw-Errington Fund: Up to $250 each. Available to students in any year of Medicine who reside twenty-five miles or more beyond the corporation limits of the city of London.

The Dr. Frank M. Cole and Dr. John M. Cole Memorial Awards: $200 each. These Bursaries are available to students entering the third year of Medicine.

Co-operative Medical Association of Ontario Bursary: Value: $500 a year to a maximum of $2,000. Available to students in any year of Medicine who are members, or the sons or daughters of members, of one of the Medical Co-operatives of the Co-operative Medical Services Federation of Ontario. Apply by October 10th.

Essex County Medical Association Bursary: $750. Available to a resident of Essex County who has been accepted in the first year of Medicine at a Canadian university. Apply directly to: Ethics and Credentials Committee, Essex County Medical Association, 1427 Ouellette Avenue, Windsor, Ontario.

The Meds '50 Bursary Fund: Up to $300 each. Available to students in any year of Medicine.

The M. C. Mowry Memorial Bursary: $75. Available to students in the fourth year of Medicine.

Ontario Medical Association Bursary and Loan Fund: Up to $350 each. Available to students in any year of Medicine.

Dr. Arthur F. Haasz Medical Student-Aid Bursaries: Up to $250 each. Available to students in any year of Medicine.

I.O.D.E. Bursaries: Students entering Medicine are eligible for the following continuing I.O.D.E. Bursaries, valued at $100 each: The Colonel William Gartshore Chapter; Bishop Hellmuth Chapter; William E. Saunders Chapter; Nicholas Wilson Chapter.

The Bill McKibbon Bursary: $500 each year throughout Pre-medicine and Medicine. A male student, preferably from Southwestern Ontario, is to be selected by the Secretary of the Loans and Bursaries Committee and the donor. Academic standing and personality will count equally in the selection. This bursary was endowed by the late Dr. Walton McKibbon of Wingham, a medical graduate of this University, in memory of his son.

Maud H. Smallman Awards: Two of $500 each. Available to students in any year of Medicine. The fund for these Awards was established by a bequest of the late Mrs. Maud H. Smallman of London, Ontario.

LOANS

To be eligible for a loan, a student must have a satisfactory academic record and be able to show that he cannot continue his studies without financial assistance. Application should be made to the Awards Officer.

Ontario Medical Association Grant-In-Aid Fund: Loans from this fund are interest-free and are on the honor system requiring no formal contract to repay. Available to students in the third and fourth years of Medicine.

The Dean Russell Medical Student-Aid Fund: Up to $400 each. Available to students in any year of Medicine. This fund was established by the late Mr. Dean Russell of Dean Russell Drugs Ltd. to provide small grants or interest-free loans.

Maude Abbott Memorial Scholarship Loan Fund: This fund has been established by the Federation of Medical Women of Canada. Loans of up to $350 per year are available to any woman medical student or first year interne. A second loan up to $350 may be granted to a previous recipient. In special cases, a loan up to $1,000 may be granted to a medical woman for postgraduate training. Loans are payable within seven years of date of issue, after which time interest will be charged at the rate of 5% compounded annually. Information regarding these loans may be obtained from Dr. Alice E. Gray, Director of Laboratories, Women's College Hospital, 76 Grenville Street, Toronto, Ontario.

STUDENT REGULATIONS

Any statement in this Announcement applies only to the session 1973-1974. Students registering in the Faculty of Medicine are subject to any decisions which may be made by the Council of the Faculty of Medicine and by the Senate or Board of Governors of the University.

FINANCIAL RESPONSIBILITY

No senior student having an unsound financial record, either in the School or in his dealings with others, will be recommended for graduation. All other students who are reported as having an unsound financial record will be subject to special review by the Council of the Faculty of Medicine before being recommended for promotion.

A student or students will be held financially responsible for any actions of a negligent or wantonly destructive nature which result in the damage of University property. Such charges will form part of the amount due to the University. Nonpayment will result in disciplinary action by the Dean's Office.

ATTENDANCE

(a) Students registered in any year are expected to attend the courses of instruction and are required to take the examinations in all subjects prescribed for that year, unless otherwise permitted by the Chairman or Head of the Department concerned and the Dean of Medicine.

(b) Absence from lectures, laboratories, seminars or clinical work is excused if due to illness or by expressed permission of the instructor. The Office of the Dean should be notified of absence due to illness.

(c) Classes desiring a change of scheduling of any lecture, seminar, clinic or laboratory period must have the concurrence of the Chairman or Head of the Department(s) concerned and the Dean's Office.

ACADEMIC REQUIREMENTS

1. To complete each year's work and be permitted to register in the succeeding year of the medical course a student must:
   (a) Meet the attendance and conduct requirements described in the announcement;
   (b) Complete the prescribed assignments;
   (c) Obtain at least 50% in each subject in which a final examination is held;
   (d) Obtain a general average of 60% in each of the first, second and third years;
   (e) In the fourth year only, for a pass in any subject, obtain a minimum mark of 50% in both the oral and written examinations. The final mark obtained in each subject must be 60% or over.
2. A student may be given permission by the Council of the Faculty of Medicine to write no more than two supplemental examinations, provided:
   (a) His general average is above 55% and below 60%;
   (b) His grades are below 50% in no more than two subjects.
3. A student will be considered to have failed to complete a year's work if:
   (a) His general average (in all subjects of that year) falls below 55%;
   (b) He has failed in more than two subjects;
   (c) He has been given permission to write supplemental examinations and has failed to meet the requirements under section 1 (c) or 1 (d) above.
4. A student who fails to complete a year may be permitted by the Council of the Faculty of Medicine to repeat that year. Permission is given only under exceptional circumstances, and then only when a vacancy is available in that year. When a student is allowed to repeat a year he must pass that year without conditions to be allowed to continue in the course. Permission to repeat a year has been seldom given.
5. A student who obtains an average of 80% or over, in a year's work, is considered to have passed that year with honors. A student who passes with honors in each year in the Faculty of Medicine will be graduated *cum laude*.

6. In each subject the ratio of term grades to final examination grades is determined by the teaching staff of the Department concerned. Weighted grades, based on the teaching time in each subject, are used in computing the general average in each year of the course.
7. In the case of Combined Examinations, as in Second and Third Years, a student failing to obtain 50% of the marks assigned for any section will be required to rewrite the entire Combined Examination unless he has obtained at least 60% on the overall paper.
8. At the end of each academic year, a report will be mailed to each student, showing his grade in each subject and his general average grade for the year. Key to Grades is as follows:

   A 80-100%
   B 70-79%
   C 60-69%
   D 50-59%
   E 40-49%
   F Below 40%

REQUIREMENTS FOR DEGREE OF DOCTOR OF MEDICINE

Every candidate for graduation in Medicine must give satisfactory evidence:

1. That the entrance requirements of the Faculty of Medicine of The University of Western Ontario have been fully satisfied;
2. That he is at least twenty-one years of age, and has been engaged in the study of medicine for the period prescribed by the Senate of the University, during which he has completed the course of required instruction in this or some other recognized University, College of School of Medicine, at least two sessions of which must have been spent at this Faculty of Medicine;
3. That his attendance at lectures, seminars, clinics and laboratories as prescribed for the different years has been satisfactory to the Departments concerned and that he has met the requirements for the courses at the time of the examinations;
4. That he has attended the prescribed clinical services at the teaching hospitals of this University.

REQUIREMENTS FOR LICENCE TO PRACTISE MEDICINE

A university degree in medicine does not give the right to practise the profession of medicine. It is necessary to conform to the laws pertaining to the practice of medicine in the province, state or country in which it is proposed to begin practice. Each Province in Canada has its special requirements for licence. A licence to practise in any part of the Dominion may be obtained by passing the examination of The Medical Council of Canada; a certificate from one of the provincial medical councils is necessary for eligibility for this examination. To obtain such a certificate requires compliance with the regulations of the medical council of the province issuing the certificate, regarding: (1) Preliminary education; (2) Matriculation; (3) Medical Curriculum; (4) Graduation. Information relative to licences to practise in any one province may be obtained from the Registrar of that province. All questions relating to the requirements for the provincial certificate necessary as a

preliminary to taking examination of The Medical Council of Canada should be similarly addressed.

Applicants (or students) who have received their premedical or any previous medical education in foreign medical schools must have their credentials confirmed by The College of Physicians and Surgeons of Ontario.

THE CANADIAN INTERNE MATCHING SERVICE

The Matching Service is a clearing-house designed to help final year medical students obtain the interneships of their choice, and to help hospitals and interneship program directors obtain the students of their choice. It provides an orderly method for students to decide where to interne and for hospitals to decide which applicants they wish to enrol. For both students and program directors, it removes the factors that generate unfair pressures and premature decisions.

The Matching Service acts as the student's agent on the instructions embodied in the student's confidential list of all the interneships for which he or she has applied, ranked in order of preference. Similarly, the Matching Service acts as the hospital's agent on the instructions embodied in its confidential list of all the students that have applied, ranked in order of the hospital's preference.

The CIMS is operated by the Association of Canadian Medical Colleges. Policy is under the control of an Advisory Committee on which seven national medical organizations directly involved in medical education are represented. Student representatives are invited to attend and to participate in the Advisory Committee meetings.

The CIMS brochure and relevant documents for participation in the matching program are distributed annually in June to all final year medical students through each Dean's Office. Further information is available from the CIMS Office, c/o AC4c, 151 Slater Street, Ottawa, Ontario, K1P 5H3 (telephone 613-237-0070).

MEDICAL LICENSING BODIES

The Provincial Medical Licensing Bodies are as follows:

The College of Physicians and Surgeons of British Columbia, Vancouver, B.C.;

The College of Physicians and Surgeons of Alberta, Edmonton, Alberta;

The College of Physicians and Surgeons of Saskatchewan, Saskatoon, Saskatchewan;

The College of Physicians and Surgeons of Manitoba, Winnipeg, Manitoba;

The College of Physicians and Surgeons of Ontario, Toronto, Ontario;

The College of Physicians and Surgeons of Quebec, Montreal, Quebec;

The Medical Council of New Brunswick, Saint John, New Brunswick;

The Provincial Medical Board of Nova Scotia, Halifax, Nova Scotia;

The Medical Council of Prince Edward Island, Charlottetown, P.E.I.;

The Newfoundland Medical Board, St. John's, Newfoundland.

N.B. When writing to any of the above, address the letter to The Registrar.

Information concerning The Medical Council of Canada, its licence, examinations, fees, etc., may be obtained from The Registrar, Box 8234, 1867 Alta Vista Drive, Ottawa, Ontario, K1G 3H7.

DEPORTMENT AND APPEARANCE OF MEDICAL STUDENTS IN TEACHING HOSPITALS

The matter of Deportment and Appearance of medical students is of concern to teaching hospitals. The following statement has been endorsed by the Board of Trustees of Victoria Hospital and the Medical Advisory Committees of St. Joseph's and Westminster Hospitals:

"Students are reminded that, since they are now members of the treatment team in which the patients must place their entire trust, they no longer have complete freedom in matters of dress, deportment and grooming. Illness in hospital is a very major event in a patient's life, accompanied by a great deal of apprehension and emotional disturbance. There is no justification for doctors and clerks to add to the patient's fears by adopting what the patient may, rightly or wrongly, regard as bizarre dress, behavior or grooming. Attending physicians and surgeons, since they bear full responsibility for their patient's welfare, are entitled to deny students the right to work with their patients if they feel a student's appearance or behavior to be unacceptable. Most patients in general hospitals are a good deal older than student physicians. Consideration for their feelings in this matter is not only a sign of courtesy and good manners, but is also evidence of their willingness to put the patient's interest ahead of their own, which is the mark of a good doctor."

HONORS PROGRAMS LEADING TO THE BSc IN ONE OF THE BASIC HEALTH SCIENCES

The Departments of Anatomy, Bacteriology and Immunology, Biochemistry, Biophysics and Physiology offer programs in the Faculty of Science leading to the degree of BSc with Honors in their respective disciplines. The Department of Physiology in collaboration with the Department of Pharmacology also offers an honors program in Physiology with a Pharmacology Option. In all cases, these programs consist of a Fourth Year Honors following successful completion of the Three-Year BSc Biology Program. In addition, however, the Departments of Biochemistry and Biophysics provide a two-year program following successful completion of the second year in Honors Chemistry or Physics respectively. The Department of Physiology also offers a Physiology-Psychology program in collaboration with the Department of Psychology. The Announcement of the Faculty of Science and the Department concerned should be consulted for the details of the Programs and their prerequisites.

GRADUATE STUDIES

The Basic Health Sciences

Information concerning graduate studies in the basic health sciences may be obtained from the Announcement of the Faculty of Graduate Studies. Studies leading to the degrees of MSc and PhD may be carried out in the following Departments: Anatomy, Bacteriology and Immunology, Biochemistry, Biophysics, Epidemiology and Preventive Medicine, Pathology, Pharmacology and Physiology.

The Clinical Sciences

Graduates in Medicine, who have completed the required graduate and post-graduate training in a clinical department of the Faculty of Medicine, are eligible for the Degree of Master of Clinical Science MC1Sc. The Announcement of the Faculty of Graduate Studies contains further details.

PhD-MD and MSc-MD Combined Programs

The Faculties of Medicine and Graduate Studies have established combined PhD-MD and MSc-MD programs, in which the research curriculum of the Graduate Program is integrated into the program leading to a medical degree.

The aim of such programs is the development of future medical teacher-scientists, within an investigative discipline while contact still exists between the medical student and the basic medical sciences.

Candidates must be accepted by the Committee on Admissions of the Faculty of Medicine prior to commencing the combined program and must be accepted by the relevant basic health science department and the Faculty of Graduate Studies prior to commencing the graduate research program. The prerequisite training and academic standing required for admission to these programs are:

(a) A Bachelor's degree (Honors), with at least a "B" average in a science related to the proposed research program, or

(b) A Bachelor's degree (General) plus the successful completion of one year of the medical curriculum with at least a "B" average, plus an "A" average in courses of the chosen discipline, or

(c) The successful completion of two years of the medical curriculum, with at least a "B" average for those who have been accepted into Medicine following the two-year premedical program, plus an "A" average in courses of the chosen discipline.

A candidate with a Bachelor's degree (Honors) who elects to complete one or two years of the medical curriculum prior to entering the PhD or MSc portion of the program, will require a "B" average with an "A" average in courses of the chosen discipline, during the medical curriculum.

The minimum residence requirement for the PhD degree in this program consists of six consecutive terms plus at least one additional summer term; the minimum residence requirement for the MSc degree in this program consists of at least three consecutive terms. This minimum residence requirement will apply whether or not the candidate possesses a previous undergraduate degree.

The student will be re-admitted to the appropriate year of the undergraduate medical course when he has completed the MSc or PhD program.

Inquiries should be directed to the offices of the Deans of the Faculties of Graduate Studies and of Medicine.

POSTGRADUATE EDUCATION

Postgraduate Education and training at the University is offered in the following disciplines: Anaesthesia, Clinical Microbiology, Family Medicine, Medicine, Neurology, Neurosurgery, Obstetrics and Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Pathology, Clinical Pathology, Medical Biochemistry, Haematologic Pathology, Physical Medicine and Rehabilitation, Psychiatry, General Surgery, Cardiovascular and Thoracic Surgery, Orthopaedic Surgery, Plastic and Reconstructive Surgery, Urology, Diagnostic Radiology and Therapeutic Radiology.

All programs are accredited by The Royal College of Physicians and Surgeons of Canada. The training program in Family Medicine fulfills the requirements for the Certification examination of the College of Family Physicians of Canada. The Committee on Postgraduate Education, the Assistant Dean—Postgraduate Education, the Program Directors of the Clinical Departments and the Directors of Medical Education at all of the major teaching hospitals co-operate in the co-ordination of clinical postgraduate education.

The clinical programs utilize the facilities both within and outside London.

Appointments are made at least six months prior to the July 1st beginning of the academic year.

CONTINUING EDUCATION

All the basic science and clinical departments participate in an active program of continuing education for family practitioners and specialists. Special lectureships, seminars, refresher days and short courses are arranged in conjunction with the Committee on Continuing Medical Education. Inquiries should be made to the Assistant Dean—Continuing Education. The Committee is continuing to experiment with the use of modern communication media in continuing medical education. A concerted effort continues to be made to develop ongoing programs of continuing medical education in several centres in Southwestern Ontario. The program of continuing medical education is assisting in the organization and administration of these programs, and members of the Faculty of Medicine are involved in regular visits to these communities, where they take part in ward rounds, lectures, case demonstrations and other forms of instruction.

LECTURESHIPS

The Dr. F. R. Eccles Memorial Medical Alumni Lectureship

This Lectureship in the Faculty of Medicine was inaugurated through the support of the Medical Alumni and a fund established by the will of the late Dr. F. R. Eccles. An outstanding clinician is invited to deliver the memorial lecture and participate in a clinical program presented annually in rotation by one of the clinical departments.

The John A. Macgregor Memorial Lectureship

The Lectureship was initiated in 1946 by friends of the late Dr. Macgregor, former Professor of Medicine, and by medical alumni, and is now supported by the Continuing Education funds of the Faculty. The lecture is given annually by an eminent pathologist and is open to all medical students and members of the medical profession.

The F. J. H. Campbell Lectureship

This Lectureship was established by Dr. Georges Lachapelle, Meds '45. The income from this fund is to be used to bring outstanding physicians, chosen by the Department of Medicine, to lecture to the Faculty, students and members of the medical profession; or on occasion to provide travel funds for a member of the Department of Medicine to attend a meeting in another Medical Centre, or with a medical group, to bring back to his colleagues the benefit of his findings.

The Doctor William Banghart Memorial Lectureship

This Lectureship was established in 1965 with funds transferred to The University of Western Ontario from the London Academy of Medicine and contributed by friends of the late Dr. Banghart. The lecture is arranged by the Department of Paediatrics in conjunction with the Continuing Education program.

RESEARCH

An active research program in the various departments is supported by grants from the Medical Research Council, the Department of National Health and Welfare, the Defence Research Board, the Department of Health of Ontario and voluntary organizations. A limited number of Medical Research Council Summer Undergraduate Medical Scholarships are available for undergraduate students annually.

Within the Faculty of Medicine three research funds have been established:

(a) The John McClary Memorial Fund for research in Industrial Medicine;

(b) The George Routledge Herman Fellowship for research in Heart Disease;

(c) The Ruth Knox Herman Fellowship for research in the general field of Cardiovascular Disease.

Information about any of the above may be obtained from the office of the Dean.

SCHOLARSHIPS AND PRIZES, 1973-1974 SESSION

Monetary prizes in each year are arranged in descending order of dollar value and are awarded in this order. No one student in any year will be awarded more than one prize of monetary value, excluding competitive essay prizes and certain other prizes awarded by selection. Should a student qualify for more than one prize, he will be awarded the prize of greatest monetary value and any lesser prizes will then revert to the next eligible students.

London Academy of Medicine Memorial Scholarship

This Scholarship, value $150, is endowed by the London Academy of Medicine as a memorial to deceased Academy members. It is awarded annually to the student entering First Year in the Faculty of Medicine, from a program in The University of Western Ontario, who in the opinion of the Senate Scholarship Committee has demonstrated the highest scholarship for admission to the Medical Program.

The Verda Taylor Vincent Scholarship

This Scholarship, value $1,000, was established by the late Miss Verda Taylor Vincent, a graduate of The University of Western Ontario. It is to be awarded annually to the student achieving the highest standing in the examinations at the conclusion of the first year.

The J. B. Campbell Memorial Scholarship in Physiology

The J. B. Campbell Memorial Scholarship in Physiology, value $100, will be given to the student obtaining the highest marks in the examination in Physiology. The late Dr. J. B. Campbell was Professor of Physiology from 1910 to 1913.

Hippocratic Society Award in Anatomy

The Hippocratic Society has provided a sum of $50 to be awarded annually as a prize to the student doing the best work in Gross Anatomy in the first year.

C. V. Mosby Company Scholarship Awards, First Year

A book to the value of $30 will be given to the student obtaining the highest standing in each of the following first year subjects: Biochemistry, Histology.

The Lange Awards, First Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The Rowntree Prizes in Medical History

The sum of $150 is given annually in memory of the late Dr. L. G. Rowntree, for essays in Medical History. Essays may be submitted by students in any year, and students in the first year class are particularly encouraged to do so. The students writing the three best essays will be awarded prizes of $75, $50 and $25 respectively. These essays will be judged on the basis of historical content, style, accuracy and originality. The essays are to be submitted to the Department of Medical History on or before March 31st of each year.

The Rachel Slobasky Kaplan Scholarship

This Scholarship of $300 has been established by Mrs. Kaplan of Windsor, Ontario. It is to be awarded annually to the student achieving the highest standing in the examinations at the conclusion of the second year of the medical course.

Will Pharmaceuticals Prizes

In order to promote interest in Pharmacology, a Fund has been established by Will Pharmaceuticals, which is made available for student competition. The Fund is to be used in the following manner:

(1) Will Pharmaceuticals First Prize in Pharmacology, valued at $100 to be awarded to the student obtaining the highest marks in Pharmacology.

(2) Will Pharmaceuticals Second Prize in Pharmacology, valued at $75 to be awarded to the student obtaining the second highest marks in Pharmacology.

(3) The First Will Pharmaceuticals Prize for an Essay in Pharmacology, valued at $75.

(4) The Second Will Pharmaceuticals Prize for an Essay in Pharmacology, valued at $50.

Undergraduate students standing in the upper third of the class will be eligible for the essay competition, the subjects to be chosen by the students competing for the prizes. Essays in duplicate are to be submitted to the Dean's office on or about February 15th of each year. The first and second prize winners (3 and 4) will be decided by a special committee, which shall include the Professor of Pharmacology and the Professor of Medicine. The quality of the essays must be such that they will warrant publication in a recognized journal or review.

The Ciba Prize

This Prize, consisting of a set of the Ciba Collection of Medical Illustrations, is awarded to a student in the second year, at the discretion of the Council of the Faculty.

The B'Nai Brith Scholarship in Pathology

The sum of $50 is to be awarded annually by the London Lodge of the B'Nai Brith Society to the second year student with the highest standing in Pathology.

The Dean Russell Prizes in Neurological Science

Combination Ophthalmoscope and Otoscope sets are to be given annually to the two second year students obtaining the highest standings in Neurological Science.

C. V. Mosby Company Scholarship Awards, Second Year

A book to the value of $30 will be given to the student obtaining the highest standing in each of the following second year subjects: Bacteriology and Immunology, Psychiatry.

The Lange Awards, Second Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The Charles E. Frosst Medical Scholarship

Charles E. Frosst and Company will award a Scholarship of $500 and a bronze Medal at the end of the Third Year to a medical student who has shown most promise in the field of Therapeutics.

The Dr. I. W. Mann Award

This Award of $250 established by the late Dr. I. W. Mann, Meds '37, is awarded to the third year medical student showing superior achievement in studies in Family Medicine and demonstrating personal monetary need.

The Leonard Sutcliffe Memorial Scholarship

This Scholarship of $150 is to be awarded to the student with the highest standing in the third year of the medical course.

The Carleton C. Whittaker Memorial Scholarship in Psychiatry

This Scholarship, value $125, established by the late Miss Edith M. Whittaker, will be awarded to a student in the third year with high standing in Psychiatry and other evidence of interest in the subject.

The Bristol Prize in Medicine

Medical Texts in Therapy and/or Pharmacology to the value of $125 will be awarded annually by Bristol Laboratories to the Third Year student selected on the basis of meritorious performance in Clinical Medicine.

The Ontario Medical Association Prize in Preventive Medicine

This Prize, value $100, is awarded by the Ontario Medical Association to the most able student in the Third Year as selected by the Chairman of the Department of Epidemiology and Preventive Medicine.

The Borden Award in Paediatrics

This Award, value $100, is granted by the Borden Company, Limited, to the student showing the greatest merit in Paediatrics in the third year.

The Ciba Prize in Medicine

This is a Prize of $75 to be awarded to the third year student in the Faculty of Medicine who shows the greatest proficiency in Medicine.

The Dr. William Zaharia Memorial Prize in Endocrinology

This Prize, value $65, is awarded to a student in the Third Year of the Faculty of Medicine who has shown the greatest competence in the laboratory and/or clinical aspects of Endocrinology, as selected by the Council of the Faculty of Medicine.

C. V. Mosby Company Scholarship Award, Third Year

A book to the value of $30 will be given to the student obtaining the highest standing in Clinical Biochemistry.

The Lange Awards, Third Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The W. H. McGuffin Scholarships in Radiology

Two Scholarships, consisting of awards of $75 and $50, will be given to the students of either of the two final years presenting the best essays on a subject pertaining to Radiology. The essays are to be in the Dean's office on or before February 15th of each year.

The Medical Alumni Gold Medal

A medal is to be given annually to the student graduating in Medicine with the highest aggregate marks during his full course taken exclusively at The University of Western Ontario.

The Alpha Kappa Kappa Gold Medal

A medal provided for in Alpha Kappa Kappa's contribution to the University Endowment Fund will be awarded to the student taking the highest standing in the final year.

The Dr. F. R. Eccles Scholarship

The late Dr. Eccles established a Scholarship fund to enable students of medicine to study abroad following graduation. An award of $1,200 is to be made annually

to the student obtaining the highest standing in the final year of the medical course.

The Dr. Glen S. Wither Memorial Award

This Award, established by the family, classmates and friends of the late Dr. Glen S. Wither, Meds '68, is awarded to the final year medical student who, in the opinion of his peers and associates, demonstrates the highest attributes of the physician—integrity, concern for his patients, compassion, and a devotion to his profession. The amount of the Award will be $250.

Poulenc Award

The sum of $250 is donated annually, along with a suitably inscribed gold medal, to the student

obtaining the highest marks for the two final years in the following clinical subjects: Medicine, Obstetrics and Gynaecology, Paediatrics, Physical Medicine, Psychiatry and Surgery.

The Class of '55 Prize

An annual Prize of $200 is provided by the Class of Meds '55 to be awarded at the discretion of the Dean and Faculty to a student in the final year showing outstanding promise in the practice of Clinical Medicine.

The Dr. R. A. H. Kinch Prize in the Community Aspects of Medicine

This Prize of $150 established by Dr. R. A. H. Kinch will be awarded annually to the final year medical student who demonstrates the greatest competence in the community aspects of medicine, as determined by the Department of Epidemiology and Preventive Medicine and the Department of Family Medicine.

The Abbott Prize in Anaesthesia

This Prize of $150, awarded by the Abbott Laboratories Limited, will be given to the fourth year student who has shown outstanding interest in the Specialty of Anaesthesia. For the Prize the marks in the third year examination and the performance during the fourth year clerkship as judged by the Clinical Instructors shall be taken into consideration.

The Dr. Fred N. Hagerman Memorial Prize in Surgery

This Prize of $100 established by the family and friends of the late Dr. Fred N. Hagerman, Meds '63, is awarded to the final year student showing the greatest merit in Surgery during the third and fourth years as assessed both by marks in written examinations and performance in clinics.

The Pearl Devenow Fox Memorial Prize in Obstetrics and Gynaecology

This Prize of $100 will be awarded by the London Section of the National Council of Jewish Women of Canada to the final year student showing the greatest merit in Obstetrics and Gynaecology during the third and fourth years as assessed by both marks in written examinations and performance in clinics.

The J. B. Campbell Memorial Scholarship in Medicine

The J. B. Campbell Memorial Scholarship in Medicine, value $100, will be given to the student obtaining the highest marks in the combined examinations in Medicine and Clinical Medicine in the final year. The late Dr. J. B. Campbell was Associate Professor of Medicine from 1913 to 1919.

The Kingswood Scholarship

A Scholarship of $100 is awarded annually to such student in the graduating year in Medicine as the authorities of the University consider most proficient. The fund was established by a bequest of the late Mr. Isaac William Kingswood.

The Elena B. Wolf Memorial Awards

The sum of $100 is awarded annually in memory of Mrs. Elena B. Wolf for essays in the field of cancer research or treatment submitted by final year medical students. Awards in the amount of $60 and $40 will be presented for the two best essays as judged by a special committee appointed by the Dean of Medicine. Essays are to be submitted to the Office of the Dean of Medicine on or before March 31st of each year.

The Dr. T. H. Coffey Memorial Prize in Physical Medicine and Rehabilitation

This Prize of $50 and a book has been established by Dr. M. G. P. Cameron in memory of the late Dr. T. H. Coffey. It will be awarded to a third or fourth year medical student for the best essay in the field of clinical investigation or research related to Physical Medicine and Rehabilitation. Essays are to be submitted to the Office of the Dean of Medicine on or before March 31st of each year.

The Dr. Lawrence A. Burk Memorial Prize in Paediatrics

This Prize of $50 established by Mrs. Barbara Burk in memory of her late husband, Dr. Lawrence A. Burk, class of 1959, is awarded to the final year student showing the greatest merit in Paediatrics.

The Class of 1917 Prize

An award of $50 will be given to the student in the final year keeping the best case records on patients on the wards and in the out-patient departments.

The Roche Scholarship

This Scholarship, value $50, is to be awarded to a final year student at graduation, on the work of the two final years of the course. It will be based on the general lines of the Rhodes Scholarship, in which proficiency, progress and leadership will be evaluated by a board of assessors.

The Ivan Hamilton Smith Memorial Prize

This Prize of $25 for books donated by the friends of the late Dr. Ivan Hamilton Smith is awarded to the final year student obtaining the highest mark in Therapeutic Radiology.

The Lange Awards, Fourth Year

Prizes of four books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The Horner Gold Medal Awards in Ophthalmology and Otolaryngology

Frank W. Horner Limited will award gold medals to the final year medical students showing the highest proficiency in Ophthalmology and Otolaryngology in all years of the medical course.

The Khaki University and Y.M.C.A. Scholarship

Applications for the Khaki University and Y.M.C.A. Scholarship, value $200, will be received by the Dean from the sons or daughters of veterans of the Canadian Armed Forces. In the event that no applications are received from any veteran's dependents, then applications will be accepted from other students. The Scholarship will be awarded at the discretion of the Council of the Faculty of Medicine.

Nellie L. Farthing Memorial Fellowship

This Fellowship in the Medical Sciences, value $1,500 per academic year, is available to students engaged in postgraduate work or medical research. Applications should be submitted to the Dean of Medicine no later than March 15th.

Advanced Graduate Scholarships

There are several scholarships tenable abroad for highly qualified students to do further postgraduate work. Information concerning these scholarships can be obtained from the Dean's Office.

MEDICAL SOCIETIES

The Hippocratic Society

The Hippocratic Society is the official undergraduate Medical Society of the University. The membership consists of all medical students in the first, second, third and fourth years. It is governed by the Hippocratic Council which is elected annually from the members of the Society. This Council consists of an executive and the year presidents, and handles all student affairs. It sponsors the U.W.O. Medical Journal, the Osler Society, the Meds' Merrymakers and *"Tachycardia"*, the annual variety show. The social program of the Hippocratic Society includes the annual Meds' picnic, the Annual Hippocratic Banquet and the Meds' At Home. The Council provides certain services for the students, including current newspapers and magazines, a telephone and current non-medical books. The University of Western Ontario Undergraduate Medical Journal is published, edited and controlled by the student body through the Hippocratic Council. A consulting editorial staff is appointed each year by the Council of the Faculty to assist the students in this publication. A Staff-Student Liaison Committee and a Mentor System provide lines of communication between students and faculty. A two-dollar fee for membership in the Society is payable on registration day.

Osler Society

The Osler Society is an organization open to all medical students, academic staff and local physicians. The aims of the Society are to perpetuate the name of the great Canadian physician, Sir William Osler, and to provide an opportunity for the presentation and discussion of papers on medical history and various aspects of medicine.

Alpha Omega Alpha

This is an Honor Society for medical students, membership in which is based on scholarship and character. It was first organized at the College of Medicine, University of Illinois, in 1902. The Beta Chapter of The University of Western Ontario was organized in 1942. The aim of the Society is to encourage the spirit of medical research. Chapter meetings are devoted to the presentation of scientific papers.

PLAN OF INSTRUCTION

The undergraduate medical curriculum provided by the Faculty of Medicine is designed to permit the acquisition by the student of a core of fundamental knowledge and the basic technical skills, and to assist in developing attitudes which will form a basis for further postgraduate or graduate study leading to family medicine, other clinical specialties or basic or clinical research, etc.

Students entering the first year in September, 1973, will follow the new curriculum. Approximately 40% of the timetable in the first two years of the new curriculum is unscheduled to permit the student to pursue various electives. A program of electives is available from the Office of Service and Research in Medical Education and the Office of the Dean.

The First Year will begin with an Introduction to Medicine where students will work with physicians, see several types of health care facilities, and discuss issues in the provision of Health Care. Students are introduced to patients in the first year in a Clinical Methods course where interviewing, history-taking and the physical examination will be taught. The problems and issues of Health Care Systems will be examined from a broad perspective in the Medicine and Society course. Other courses in the first year will include Gross Anatomy, Histology, Biochemistry, Biophysics, Physiology, Bacteriology and Pathology, and the relationships of these basic sciences will be examined in the Integrative Biology course. Several basic and clinical science departments will cooperate in an integrated Neuroscience and Mind course which will begin in the latter part of the first year.

For the 1973-1974 Session, the second, third and fourth years of the course will continue as in the previous curriculum, as follows:

In Second Year, several basic and clinical science departments cooperate in an integrated Neurological Sciences system course. In addition to Bacteriology and Immunology, Genetics, Pathology and Pharmacology, students receive further instruction in Biochemistry and Physiology and the Clinical Sciences.

In Third Year the curriculum is devoted mainly to the Clinical Sciences and includes a course in Clinical Biochemistry. Short courses in legal medicine, medical ethics and an introduction to computer and information science are given in Third Year.

Students have considerable exposure to Family Medicine throughout the entire four years of the program.

The Fourth Year is a forty-eight-week clinical clerkship providing opportunity for rotation through the various clinical services in the teaching hospitals and including a nine-week elective period. The clinical clerk, as the junior member of the clinical team, is involved in the diagnosis, investigation and treatment of patients under the care of the team. The clerkship provides an opportunity for the student to relate the knowledge, skills and attitudes already acquired to the solution and management of clinical problems. The elective period permits the student to pursue further basic science or clinical studies and to explore future career choices. The 48-week clinical clerkship comprises five nine-week terms and three weeks for study, examinations, etc.

DEPARTMENT OF ANAESTHESIA

Second Floor, University Hospital

Head of Department: W. E. G. A. Spoerel, MD Frankfurt-on-Main: FRCP(C)

PROFESSOR: Spoerel; ASSOCIATE PROFESSORS: Webster, MacDonald; CLINICAL ASSOCIATE PROFESSORS: Aitken, Keeri-Szanto; ASSISTANT PROFESSOR: Sellery; CLINICAL ASSISTANT PROFESSORS: Bain, Cameron, Clancy, Russell; LECTURER: Heinrich; CLINICAL LECTURERS: Adamson, Butlin, Diamond, Glennie, Hersey, Millman, Muir, Nielsen, Norry, Slater, Squire, Walker; HONORARY LECTURERS: Groom, Growse; INSTRUCTORS: Kandel, McFarlane, Stewart; RESEARCH ASSOCIATE: Leung.

THIRD YEAR

Together with the Department of Pharmacology, twelve lectures are given in clinical pharmacology, with particular emphasis on aspects of acute medical condition and anaesthesia. Another twelve hours of lectures and demonstrations cover clinical anaesthesia and special patient care associated with it, including respirator care, inhalation therapy, and cardiopulmonary resuscitation.

FOURTH YEAR

During their Clinical Clerkship, students are assigned for one week to Anaesthesia. Instructions are given in practical anaesthesia, care of the airway and artificial ventilation, management of the unconscious patient and respirator treatment in the Intensive Care Unit.

ELECTIVES

Students interested in anaesthesia and intensive patient care are invited to use their elective time for further studies in this specialty.

DEPARTMENT OF ANATOMY

Departmental Office: MS 472

Professor and Chairman of the Department:
D. G. Montemurro, BA, MSc, PhD UWO

PROFESSORS: Barr, Buck, Montemurro. ASSOCIATE PROFESSORS: Donisch, Gwinnett, Gwyn, Shaver, Singh, Soltan, Wilson. ASSISTANT PROFESSORS: Altmann, Clattenburg, Flumerfelt, Gammal, Kiernan, Sergovich. HONORARY LECTURERS: Robinow, Walden. LECTURER: Cline. INSTRUCTORS: Jory, Leyshon, Warma.

FIRST YEAR

1. Developmental and Definitive Anatomy.

(a) Definitive Anatomy is presented as a series of concepts each of which has developmental, definitive and applied aspects. Time strictures prevent comprehensive dissection by students but dissection of certain parts may be retained. Class members will be permitted to use departmental teaching aids as they wish; these include film loops, steroscopic slides, radiographs, models and prosections. The general objective of the course is to equip the medical student with sufficient anatomical knowledge to permit his intelligent participation in more advanced courses whether in anatomy or in the clinical sciences.

(b) Lecture demonstrations will be presented, mainly on a systemic basis. Experienced instructors will conduct groups of twenty students through learning sessions which make extensive use of prosected material and highlight the important morphological details in normal individuals; wherever possible, extrapolation to the 'living' state will be attempted and emphasis will be given to structuro-functional relationships.

144 hours.

2. Histology.

(a) The objective is to acquire sufficient knowledge of the microscopic structure of the various tissues and organs of the body so that the functioning (Physiology) and the disease processes (Pathology) can later be understood. Since histology is concerned with the structure and relationships of normal cells, tissues and organs, it serves as a basis for understanding and recognizing normality and normal variation, both of which are significant in health maintenance or disease prevention.

(b) A practical laboratory course in the structure of normal human tissue and organs.

60 hours.

SECOND YEAR

3. Neuroanatomy.

(a) A series of lectures dealing with the microscopic and gross features, internal structure and major fibre tracts of the human central nervous system. The dynamic approach is emphasized. This is part of a course in Neurological Science, in which the Departments of Anatomy, Pathology, Pharmacology, Physiology and Clinical Neurological Sciences collaborate.
39 hours.

(b) A practical course in the dissection of the human brain, together with the study of sections of the brain stem and a review of the main aspects of Neurohistology. This is also part of the course in Neurological Science.
18 hours.

4. Medical Genetics. A short course stressing the application of several genetic principles to medicine and acquainting the student with the basic terminology of the various branches of human genetics.
16 hours.

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Room 352, MSB

Head of the Department: R. G. E. Murray, BA, MA Cantab; MDCM McGill; FRSC
PROFESSORS: Fitz-James, Murray, Robinow, Whitby. CLINICAL PROFESSOR: Hatch. ASSOCIATE PROFESSORS: Ebisuzaki, Medzon, Robinson, Zajic. CLINICAL ASSOCIATE PROFESSOR: Bakerspigel. ASSISTANT PROFESSORS: Black, Cheevers, Percy, Rozanis, Sinclair, Singhal, Strejan, Wilkins. CLINICAL ASSISTANT PROFESSOR: Campsall. LECTURER: Galsworthy. HONORARY LECTURERS: Chodirker, Hannay, Roslycky, Toogood.

FIRST YEAR (NEW CURRICULUM)

1. Medical Microbiology and Immunology Core Course. A course of lectures and laboratory demonstrations which will outline attributes of man and of infectious agents that are relevant to the understanding of the causation, control and management of infectious diseases. Material will be grouped as follows: Infectious agents; Man as host to infectious agents, where Immunology will comprise the major part, but material on transmission of infection and sources of infection will also be included; Fundamentals of the causation of disease; selected examples of be presented as coordinated sessions with the Department of Epidemiology and Preventive Medicine; Laboratory diagnosis of infection.
78 hours.

2. The Department will also contribute relevant sections to a number of other first and second year medical courses; in the Therapeutics Course on Antibiotics, in Integrative Biology and in Systems Courses, which constitute the Introduction to Clinical Clerkship. Here there will be an Immunology System Course and also material will be presented as appropriate on infections of the Respiratory, Genito-Urinary, Gastro-intestinal and Central Nervous Systems, and on Immunology in the Haematopoetic System.
30 hours.

SECOND YEAR (PRESENT CURRICULUM)

1. Medical Microbiology and Immunology . A course of lectures dealing with the nature and morphology of bacteria; host-parasite relationships; disinfection and sterilization; a survey of bacteria of medical and dental importance; the nature of viruses and virus infections; serological diagnostic methods; immunization, hyper-sensitivity; antibiotics and chemotherapy; and major topics in mycology and concerned with Immunobiology.
80 hours.

2. A course of laboratory exercises, demonstrations and tutorials integrated with the lecture course and illustrating the application of bacteriology, virology, mycology, parasitology, and immunology to the practice of medicine.
70 hours.

DEPARTMENT OF BIOCHEMISTRY

Room 316, MSB

Acting Chairman of the Department: K. P. Strickland, BSc, MSc, PhD UWO PROFESSORS: Bigelow, Carroll, Fitz-James, McCarter, McMurray, Rossiter, Smith, Stewart, Strickland. ASSOCIATE PROFESSORS: Ball, Heagy, Magee, Walker, Webling. ASSISTANT PROFESSORS: Cook, Donisch, Galswothy, Gatfield, Gordon, Guthrie, McDonald, Possmayer, Trevithick. HONORARY LECTURERS: Cheevers, Chefurka, Hudson, Krupka, MacPherson, Spencer, Vardanis, Wolfe. INSTRUCTOR: Boyadjian.

DIVISION OF CLINICAL BIOCHEMISTRY

Chairman of Division: J. C. Griffiths, BS Wales: MB BCh Welsh National: FCSCC PROFESSORS: Brownstone, Hobkirk. ASSOCIATE PROFESSORS: Griffiths, Tustanoff. CLINICAL ASSOCIATE PROFESSORS: Binns Smith, Haines, Haust. ASSISTANT PROFESSOR: Garg.

FIRST YEAR (NEW CURRICULUM)

121. A Course of Lectures in General Biochemistry. Structures, functions and biosynthesis of macromolecules; the chemistry and metabolism of carbohydrates, lipids, amino acids and minerals; composition and properties of tissues and body fluids; structure and function of vitamins and hormones; regulation and integration of metabolism; introduction to clinical aspects of biochemistry.
4 hours (2 trimesters) Lecture and Laboratory, full course.

SECOND YEAR (PRESENT CURRICULUM)

Neurochemistry. Lectures in Neurochemistry are given as part of the Second Year course in Neurological Science.

121. Integrative Biochemistry. A course of lectures and seminars devoted to a consideration of control mechanisms in biological processes including genetic, hormonal and chemical mechanisms.
Lecture and Clinical Demonstrations, half course.

THIRD YEAR

121. Clinical Biochemistry. As a necessary complement to the acquisition of clinical skills, the student must become acquainted with laboratory medicine by exposure to Medical Biochemistry, Haematology, Blood Banking and other areas of laboratory medicine. This is accomplished as follows:

(1) Introductory sessions with the entire class will serve the purpose of scrutinizing the major principles of methodology currently available in the foregoing fields and surveying their wide range of clinical applicability.

(2) Students in small groups will then participate in the critical evaluation of laboratory data for diagnosis and management of disease.

DEPARTMENT OF BIOPHYSICS

Room 122, MSB

Chairman of the Department: Margot R. Roach, BSc New Brunswick; MD, CM McGill; PhD UWO; FRCP(C)

PROFESSORS: Roach, Burton (Part-Time), Groom. ASSOCIATE PROFESSORS: Inch, Taylor. ASSISTANT PROFESSORS: Boughner, Canham, Duncan, Sherebrin, Sutherland. LECTURER: Song. HONORARY LECTURERS: Finlay, Johnson, Miller, Nagai.

FIRST YEAR

Aim: To show students how physical factors contribute to health and disease.

Contents: (1) Physical properties of tissues (elasticity, stability, isotropy, etc.). (2) Transport phenomena - how oxygen gets from the air to the cell with a discussion of the difference between diffusion and bulk flow and some comment on how this is altered by disease. (3) Biomechanics - including joint motion, trauma, head injuries, fractures. (4) Energy and work including temperature regulation and efficiency.

Evaluation: 2 assignments and 1 test. 24 hours in first trimester.

Instructors: Boughner, Canham, Groom, Roach.

Other Medical Teaching: Integrative Biology, Clinical Methods, Clinical Science, Introduction to Clerkship. Electives.

CANCER RESEARCH LABORATORY

(A Unit of the National Cancer Institute of Canada)

Director: J. A. McCarter, BA, MA British Columbia; PhD Toronto; FRSC

The Cancer Research Laboratory was established by a grant from the Ontario Division of the Canadian Cancer Society, and is maintained chiefly by annual grants from the National Cancer Institute of Canada. It is housed on the main University campus. Activities are centred on a variety of problems in basic cancer research. Senior members of the Laboratory hold joint appointments in appropriate Departments of the Faculty of Medicine, and participate in the teaching of undergraduate and graduate students.

Graduate students may proceed to MSc and PhD degrees in the Laboratory,

receiving their advanced degrees in whatever discipline their supervisor has his joint university appointment. These include at the present time Bacteriology and Immunology and Biochemistry.
Application should be made, in the first instance, to the Director of the Laboratory.

DEPARTMENT OF CLINICAL NEUROLOGICAL SCIENCES

7th Floor, University Hospital

Chairman of the Department: C. G. Drake, MD, MSc UWO; FRCS(C), MS Toronto
PROFESSORS: Drake; Kaufmann ASSISTANT PROFESSORS: Blume; Gilbert CLINICAL ASSISTANT PROFESSOR: Allcock HONORARY LECTURERS: Ball; Coates; Haust

DIVISION OF NEUROLOGY

Chairman of the Division: H. J. M. Barnett, MD Toronto; FRCP(C)
PROFESSOR: Barnett ASSOCIATE PROFESSORS: Bolton; Hudson ASSISTANT PROFESSORS: W. F. Brown; Kertesz; Paty CLINICAL ASSISTANT PROFESSOR: McInnis LECTURERS: J. D. Brown; Jaatoul HONORARY LECTURER: Hinton CLINICAL LECTURER: McPherson

DIVISION OF NEUROSURGERY

Chairman of the Division: C. G. Drake
PROFESSOR: Drake ASSISTANT PROFESSORS: Amacher; Girvin CLINICAL ASSISTANT PROFESSOR: Barr

SECOND YEAR

Neurological Sciences

A combined course is given in conjunction with the Departments of Anatomy, Physiology, Biochemistry, Pathology and Pharmacology. The course provides an integrated basic science and clinical study of the different regions of the nervous system in lectures, laboratories and clinical demonstrations.
160 hours.

DIVISION OF NEUROLOGY

1. Clinical Sciences. An introductory clinical course is given in the teaching hospitals, in conjunction with the Departments of Medicine, Obstetrics and Gynaecology, Paediatrics and Surgery. Emphasis is placed upon the physical examination.

THIRD YEAR

2. Clinical Neurology. Students will be assigned to the Neurological Service of the teaching hospitals for a period of eight weeks for a total of 28 hours. Emphasis will be placed on neurological history-taking and the elicitation of signs in the localization of neurological disease.

3. Applied Therapeutics. In the course of "Principles of Medicine and Applied Therapeutics" in the Department of Medicine, lectures and case assignment essays will be given in neurology as part of the general course.

FOURTH YEAR

4. Clinical Clerkship. Students will be assigned patients that are admitted or referred to the neurological service in the teaching hospitals and will assume responsibility for their care under the supervision of the attending staff. A complete history, physical examination, course of investigation and treatment will be required on all of the cases that have been assigned.

5. Clinical Neurological Sciences Rounds. The students are expected to attend the weekly combined rounds of the Division of Neurology and Neurosurgery, as well as Neurology, Neuroradiology, Neuropathology and basic science teaching sessions.

DIVISION OF NEUROSURGERY

SECOND YEAR

1. Clinical Science. The Division of Neurosurgery participates in an introductory course in clinical neurological examination and basic neurosurgical principles.
5 hours.

THIRD YEAR

2. Clinical Neurology. The Division of Neurosurgery participates in the program of clinical neurology.

FOURTH YEAR

3. Clinical Clerkship. Students are assigned to the neurosurgical service for one week. Patients are assigned for examination and subsequent clinical study at the bedside. In addition, the student is attached to the resident staff for daily rounds, investigation of cases and appropriately in the operating room as an observer or assistant.

4. Seminars. Students participate in each of the four neurosurgical seminars at Victoria Hospital and at St. Joseph's Hospital.

5. Clinical Neurological Sciences Rounds. Students are expected to attend the weekly combined rounds of the Division of Neurology and Neurosurgery as well as Neuroradiology, Neuropathology and basic science rounds.

THIRD AND FOURTH YEARS

An elective is offered in the Department for both the Third and Fourth Years.

DEPARTMENT OF EPIDEMIOLOGY AND PREVENTIVE MEDICINE

Medical Sciences Building, Room 115

Professor and Chairman of the Department
Carol W. Buck, MD, PhD UWO; DPH London, England
M. F. FALLON MEMORIAL PROFESSOR OF PREVENTIVE MEDICINE: Buck ASSOCIATE PROFESSORS: Rand, Stavraky, Wanklin CLINICAL ASSOCIATE PROFESSOR: Hutchison ASSISTANT PROFESSORS: McKim, Robertson, Sangal, Thurlow, Watson, Williams CLINICAL LECTURERS: Aldis, Cram, Evans, Harris, Leake, Smith HONORARY LECTURERS: Banting, Martinello, Neilson INSTRUCTORS: Donaldson, Mumby

THIRD YEAR

Community Medicine. A course given mainly by seminar discussions of assigned reading on the comprehensive approach to the prevention, detection and control of health problems.
32 weeks, 2 hours per week.

FOURTH YEAR

Field experience in preventive medicine is included in the Family Medicine Clinical Clerkship.

ELECTIVE COURSES

May be arranged for students in all years.

DEPARTMENT OF FAMILY MEDICINE

Room 115, Medical Sciences Building

Professor and Chairman of the Department:
Dr. I. R. McWhinney, MB BCh, MRCP, MD, CCFP
PROFESSOR: McWhinney ASSOCIATE PROFESSORS: Butson, Pratt ASSISTANT PROFESSORS: Brennan, Hennen, J. S. McKim, Molineux, Orchard, Vinger, Williams CLINICAL ASSISTANT PROFESSOR: Hanna LECTURERS: Baxter, Biehn, Dickie, Newell CLINICAL LECTURERS: Annett, Burns, Collyer, Dillon, Edwards, Elliott, Ellyatt, Fraser, Gambrill, Gay, Gibson, Gillick, Johnston, Keidan, Marchuk, McCue, McGhie, Merritt, Naftolin, Patten, Pennington, Ragula, Redden, Robinson, Sangster, Suffel, Weston HONORARY LECTURERS: Buck, Chernick, Chernick, Clarke, Fletcher, Fraser, Hutchison INSTRUCTORS: Bernstein, Brady, Brubacher, Bryant, Butler, Clark, Ferrier, Hickey, Hiscock, Lamb, Leeson, McCallum, J. C. McKim, Meredith, Milne, Moulton, O'Neil, Piper, Shearer, Thompson, Warren, Zaltz

SECOND YEAR

The Family Health Care Program. An elective for 20 students. Each student is assigned a family from one of the Family Medical Centres. The student provides continuing care for the family under the supervision of a member of faculty.

THIRD YEAR

Students have a course of half-day sessions with instructors in their offices.

2 hours a week for 24 weeks.

FOURTH YEAR

(1) **Clinical clerkship.** Students are assigned to one of the Family Medical Centres or to a teaching practice in the community. Working as a member of the health care team they have experience of primary and continuing care of patients. They also have the opportunity to study community health services.

(2) **Rounds and seminars.** During their clerkship, students attend the program of rounds and seminars put on by the department.

(3) **Teaching practice program.** For their elective, students are offered a choice of teaching practices which have been selected in all parts of Ontario.

DEPARTMENT OF HISTORY OF MEDICINE AND SCIENCE

Room 1006, Dental Sciences Building

Professor and Chairman of the Department:
F. L. Holmes, BS MIT; MA, PhD Harvard
PROFESSOR: Holmes ASSOCIATE PROFESSOR: Richardson ASSISTANT PROFESSOR: Plotkin HONORARY LECTURERS: Balderston, Lewis, Warwick

FIRST YEAR

The Department participates in the teaching of the course Medicine and Society, which includes a historical component. For description see "First Year Integrated Courses" at the end of the Medicine section of this catalogue.

The Department also offers courses available to honors students in the Health Sciences and Faculty of Science (see descriptions at the beginning of the section Faculty of Science), to students in the Faculty of Social Sciences (see descriptions at the beginning of the section Faculty of Social Science), and to the School of Library and Information Science. The Department is proposing, with the Department of History, a Combined Honors Program in History and the History of Science (see description under History).

DEPARTMENT OF MEDICINE

Room 5-Of-5, University Hospital
Chairman of the Department:
R. W. Gunton, MD UWO; DPhil Oxon; FRCP(C), FACP
PROFESSORS: Barnett, Brien, Gunton, Hession, Lefcoe, Lewis, Manning CLINICAL PROFESSORS: Meltzer, Pace, Rechnitzer, Walker ASSOCIATE PROFESSORS: Ahuja, Barton, Bocking, Bondy, Cameron, Chamberlain, Chodirker, Clarke, Harth, Hudson, Linton, Loudon, Roach, Rodger, Smith, Thompson, Toogood, Watson CLINICAL ASSOCIATE PROFESSORS: Aikenhead, Coulter, England, Fisher, Pickard, Sears, White ASSISTANT PROFESSORS: Ahmad, Barr, Bell, Borda, Boughner, Goddard, Green, Jones, Kertesz, Kimber, Kostuk, McCourtie, McDonald, Plunkett, Redinger, Shaw, Stiller, Stuart, Tevaarwerk, Wolfe, Wood CLINICAL ASSISTANT PROFESSORS: Albers, Chertkow, Cholod, Filipich, Lohmann, Price HONORARY LECTURERS: Bartram, Hobbs, Kennedy, Langland, Middleton, Neufeld, Parker, Robinson, Sexton, Warwick, Webling, Wilcox LECTURERS: Brown, Jaatoul CLINICAL LECTURERS: Douglas, Hagerman, Purres INSTRUCTORS: Dreidger, Theoret, Veldhuis

SECOND YEAR

1. Clinical Science. An introductory course in Clinical Science is given in conjunction with the Departments of Surgery, Obstetrics and Gynaecology, Paediatrics and Clinical Neurological Sciences. Emphasis is placed upon physical examination.
60 hours.

THIRD YEAR

2. Clinical Science. Continuing instruction and experience in physical diagnosis and history taking.
32 hours, (First semester).

3. Principles of Medicine and Applied Therapeutics. A course of systematic lectures and case assignment essays on the principles of Medicine and Therapeutics.
78 hours.

4. Clinical Medicine. For a five-week period students will be assigned supervised hospital ward duties, three half-days per week. Patients will be assigned to each student and bedside teaching by members of the staff will occur at each session.
60 hours. (Second semester).

5. Noon Rounds. Students are expected to attend noon-hour and other Staff Conferences in the various hospitals when the scheduled time of the Conference and the timetable permit.

FOURTH YEAR

6. Clinical Medicine.

(1) Clinical Clerkship. Students will be assigned patients in one of the major teaching hospitals, with increasing responsibility, with advice and supervision from staff members in attendance on the ward and at the bedside. They will have the opportunity of performing histories and physical examinations, and discussing diagnostic and therapeutic techniques with Residents and Staff on a formal as well as informal basis. Seminars are conducted by staff members in sub-specialties, on both formal and informal bases.
366 hours.

(2) Out-Patient Department. Students attend clinics one half-day per week.
36 hours.

(3) Noon Rounds. Students are expected to attend the noon-hour and other staff Conferences in the various hospitals when the scheduled time of the Conferences and the timetable permit.

7. Interdisciplinary Conferences (Third and Fourth Years). Interdisciplinary Conferences are held on alternate weeks, one morning per week, all year, and may involve several Departments at one session. All students are expected to attend.

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

9th Floor, University Hospital

Chairman of the Department:
E. R. Plunkett, MD, PhD UWO; FRCP(C)
PROFESSORS: Armstrong, Plunkett, Walters CLINICAL PROFESSOR: Allen ASSOCIATE PROFESSOR: Harding CLINICAL ASSOCIATE PROFESSORS: Collins, Wearing ASSISTANT PROFESSORS: Anderson, Gammal, Milne, Possmayer, Raud, Yuzpe CLINICAL ASSISTANT PROFESSORS: Copeland, Girvan, Manners, Prueter CLINICAL LECTURERS: Lawrence, Robinson, Sloan, Tew, Wright HONORARY LECTURER: Johnson

FIRST YEAR (NEW CURRICULUM)

The Department participates in the integrated courses in Clinical Methods and Clinical Sciences.

SECOND YEAR (PRESENT CURRICULUM)

Clinical Science

In the Second Year nine hours are devoted to clinical science as applied to Obstetrics and Gynaecology. During this time the class will be split up in small groups and a tutorial approach will be carried out. The emphasis will be on the correct methods of obstetrical and gynaecological history taking and examination of the obstetrical and gynaecological patient. This will be the medical student's first introduction to the obstetrical and gynaecological patient.

THIRD AND FOURTH YEARS—THE CLINICAL YEARS

During this time clinical teaching dominates with only twenty-three didactic lectures scheduled for third year and none in the fourth. The third year, divided into small groups, spends two weeks on the Service during the first semester and three weeks during the second semester. Selected seminar topics, in part prepared by the student, are used to augment the clinical experience. The remainder of the time is devoted to clinical clerking. Accommodation is available in both St. Joseph's and Victoria Hospitals for the students to "live in" and permit the close follow-up of patients in labour. Out-patient clinics in both hospitals provide additional opportunity for learning.

The intention is to have the student see the patients on the private teaching service and follow their progress while in hospital. Special aspects of the subject will be covered by seminars and discussion groups.

During the Fourth Year, students spend four-and-a-half weeks on this Service as Clinical Clerks. Fourth year students may also increase their experience by initiating a research project or working within one of the clinical units. Such electives are arranged on an individual basis.

DEPARTMENT OF OPHTHALMOLOGY

3 North, Victoria Hospital

Head of the Department:
C. Dyson, MD UWO; DOph McGill; CRCS(C)
CLINICAL PROFESSOR: Dyson ASSOCIATE PROFESSOR: McKinna CLINICAL ASSOCIATE PROFESSORS: Ballantyne, Nicholls, Thompson CLINICAL ASSISTANT PROFESSORS: Collyer, McFarlane, Mills CLINICAL LECTURERS: Burt, Oliver INSTRUCTOR: Willis

THIRD YEAR

1. A course of lectures dealing with the anatomy, physiology, methods of examination, and the commoner diseases of the eye.
12 hours.

FOURTH YEAR

2. Each student will be attached to the Ophthalmology service of one of the teaching hospitals for one week. During this period, he will participate in daily dressing rounds, observe in the clinics and operating room, and be present at the examination of inpatients by the residents and staff. He will be given the opportunity to acquire some of the basic skills of ophthalmic examinations, particularly fundoscopy, tonometry, analysis of strabismus, and the treatment of the commoner ophthalmic emergencies.

DEPARTMENT OF OTOLARYNGOLOGY

6th Floor, University Hospital

Head of the Department:
F. J. Rounthwaite, BSc, MDCM McGill; FRCS(C),FACS
PROFESSORS: Rounthwaite, Greenway CLINICAL ASSOCIATE PROFESSORS: Babb, Burnett ASSISTANT PROFESSOR: Ruby CLINICAL ASSISTANT PROFESSOR: Lebolous CLINICAL LECTURERS: MacRae, Smith, Wong INSTRUCTOR: Janzen HONORARY LECTURER: Gettas

THIRD YEAR

1. Otology, Rhinology and Laryngology. A course of lectures dealing with anatomy, physiology, methods of examination, and the commoner diseases of the ear, nose and throat.
12 hours.

FOURTH YEAR

2. Each student will spend one week taking part in the day-to-day activities of the Department.

DEPARTMENT OF PAEDIATRICS

10th floor, University Hospital

Professor and Acting Head:
G. H. Valentine, MB, ChB Bristol; MRCS(Eng), MRCP(London), DCH(Eng), FAAP, FRCP(C)
PROFESSORS: Haust, Jaco, Valentine ASSOCIATE PROFESSORS: De Veber, Hinton CLINICAL ASSOCIATE PROFESSORS: Denison, Vincent ASSISTANT PROFESSORS: Amacher, Blume, Bolton, Ecclestone, Hardie, Jenner, M.D. Li, CLINICAL ASSISTANT PROFESSORS: Cram, Dubois, K. T. Li, McKim, Nicholson, Rajic, Riese, Sergovich, Walker, Whelen CLINICAL LECTURERS: Atkinson, Marshall, Pozsonyi, Randall, Trout HONORARY LECTURERS: Feasby, McAlpine INSTRUCTORS: Donald, Oteruelo, Robinson

DIVISION OF MEDICAL GENETICS

Clinical Associate Professor and Chairman of the Division:
H. C. Soltan
Honorary Lecturers: Gatfield, Gordon, Sergovich, Singh, Walden, Walker

FIRST YEAR

1. A series of case presentations is offered demonstrating clinical problems which can be explained by simple basic science knowledge.
6 hours.

SECOND YEAR

2. An introductory lecture and demonstration course on the examination of the infant and young child, including growth and development, is given as part of the Clinical Science programme, at St. Joseph's Hospital.
9 hours.

THIRD YEAR

3. A series of twenty-four lectures is given covering Nutrition, Diseases of the Newborn, Infancy and Childhood. The differences between the infant and the child's response to disease when compared with the adult are pointed out. Electives are available.
24 hours.

4. Bedside Teaching. Each clinic group is given a block of bedside teaching in Paediatrics, mainly in the second semester. Some further demonstrations are given in clinical

science. Students are given the opportunity to examine sick children, noting the effect of disease on the young patient. Signs and symptoms of disease are demonstrated by members of the paediatric staff and discussion held with the groups on management.
42 hours.

FOURTH YEAR

5. Final year students are expected to attend and participate at thirty weekly Paediatric Rounds held in the Busby Room, Victoria Hospital, and thirty weekly Staff Rounds held in the Classroom of War Memorial Children's Hospital. Interesting cases presently undergoing treatment in Children's Hospital are discussed.
60 hours.

6. Clinical Clerking. Each student is required to act as a clinical clerk for one 5-week period, writing histories, examining patients, making physical diagnoses and doing laboratory tests under the direction of members of the staff. He also attends clinics given by members of the staff in the Out-Patient Department at War Memorial Children's Hospital. Students are on call in the evenings in order to see acute admissions. The student is required to present the findings in these cases to attending physicians on ward rounds. Four-week or eight-week electives are available along with an opportunity for each student to attend and participate in clinics held at the Muncey Indian Reservation. While on paediatrics, students are expected to prepare and present a weekly seminar on a topic of current paediatric interest.

7. The Department of Paediatrics participates in interdisciplinary teaching throughout all years.

8. In addition to bedside teaching formal teaching is given daily by a member of the staff on his specialty within paediatrics. A paediatric x-ray unit, situated in the War Memorial Children's Hospital, allows for instruction of the student in Paediatric Radiology. Students are expected to attend and participate in a weekly paediatric radiology round. A paediatric E.E.G. laboratory is also available in Children's Hospital. A Paediatric Immunohaematology Research Laboratory is situated in an annex to the Children's Hospital. This permits research in this growing field.

DEPARTMENT OF PATHOLOGY

4th Floor, Dental Sciences Building

Head of the Department:
A. C. Wallace, BA MD UWO; FACP, CRCP(C)
PROFESSORS: Haust, Kaufmann, McCaughey, Wallace CLINICAL PROFESSORS: Mills, Smout ASSOCIATE PROFESSORS: Frei, Warren CLINICAL ASSOCIATE PROFESSORS: Davies, Slinger ASSISTANT PROFESSORS: Ball, Gilbert, Lewis CLINICAL ASSISTANT PROFESSORS: Enriquez, Saeed, Troster, Turnbull INSTRUCTORS: Adilman, Frishette, Rota

DIVISION OF ORAL PATHOLOGY

Chairman of the Division:
D. G. Gardner, DDS Toronto; MSD Indiana
ASSOCIATE PROFESSOR: Gardner ASSISTANT PROFESSOR: Sapp INSTRUCTOR: Bell

MEDICINE

1. GENERAL PATHOLOGY (First Year Medicine 1973-1974). A course of lectures, demonstrations and laboratory periods dealing with fundamental aspects of disease processes. Subjects include inflammation, repair, regressive changes, vascular disturbances, neoplasia, alterations in growth and specific examples of inflammation.
60 hours.

2. GENERAL PATHOLOGY (Second Year Medicine 1973-1974). A course of lectures, demonstrations and laboratory periods dealing with fundamental aspects of disease processes. Subjects include inflammation, repair, regressive changes, growth disorders, vascular disturbances, and neoplasia.
66 hours.

3. SPECIAL PATHOLOGY (Second Year Medicine 1973-1974). A comprehensive course in human pathology taught on a regional and systemic basis. The course is taught by means of formal lectures, gross and microscopic demonstrations and informal teaching to small groups. Museum specimens, microscopic slide collections, current postmortem and surgical material from participating hospitals are used.
180 hours.

4. SPECIAL PATHOLOGY (Second Year Medicine 1974-1975). A course in systemic human pathology dealing with common diseases. The course is taught by means of lectures, gross and microscopic demonstrations and tutorials in small groups.
120 hours.

5. ELECTIVES IN PATHOLOGY. Courses in systemic pathology involving reading assignments, attendance at specified lectures and tutorials.

6. MEDICAL JURISPRUDENCE. Lectures dealing with the law as related to the practice of medicine, duties of a coroner, the coroner's autopsy, matters of medico-legal importance.

7. CLINICAL PATHOLOGICAL CONFERENCES. In co-operation with the clinical departments, conferences are held throughout the academic year for the discussion of selected autopsies in each of the teaching hospitals. Students present the clinical history, physical findings, laboratory and radiological investigations, the differential diagnosis and preferred diagnosis. The professor in the clinical department concerned discusses and comments upon the case. The pathologist discusses the pathological findings particularly from the standpoint of cause of death, the mode of death and clinical pathological correlations.
16 hours.

8. PATHOLOGY FOR NURSING, MEDICAL REHABILITATION AND NON-MEDICAL HONORS STUDENTS. This is a survey course of 12 lectures and demonstrations dealing with the basic components of general pathology. It is designed to introduce the student to the common disease processes. The course is appropriate for students of Nursing and Medical Rehabilitation and, combined with Course 512, for graduate and honors science students.
18 hours.

9. METHODS IN PATHOLOGY. This course of twelve lectures and demonstrations deals with modern methods of investigating disease processes using the techniques of experimental pathology. It is appropriate for medical or non-medical graduates who desire some understanding of the investigation of disease processes from the point of view of experimental pathology.
24 hours.

10. The Department contributes to a number of integrated courses including Neuroscience and Mind course, Integrative Biology and the Introduction to the Clinical Clerkship.

DEPARTMENT OF PHARMACOLOGY

Departmental Office MS 275

Professor and Head of the Department:
C. W. Gowdey, BA, MSc UWO; DPhil Oxon
PROFESSORS: Gowdey, Hamilton, Parker ASSOCIATE PROFESSORS: Colhoun, Hirst, Philp ASSISTANT PROFESSOR: Hersey LECTURERS: Borda, Lovegrove, Meltzer, Spoerel, White INSTRUCTORS: Dinel, Geddes, Hansford

SECOND YEAR

Medical Pharmacology. The course of lectures deals with the absorption, distribution, metabolism and excretion of drugs, the relation between chemical structures and pharmacological activity, the mechanism of action, therapeutic uses, contraindications and toxic effects of the clinically important drugs.
Eight 4-hour laboratory demonstration / tutorial / workshop periods are scheduled in the Third Quarter in which the actions of important classes of drugs are demonstrated by experiments, films and slides. Small-group discussions with faculty are encouraged.
120 hours, full course.

Neuropharmacology—Part of Neurological Science. In cooperation with the Departments of Anatomy, Biochemistry, Physiology and Clinical Neurological Science; A study of the effects of both endogenous chemical substances and drugs on neuromuscular transmission and on the central nervous system in both healthy and diseased states, including drugs used in anaesthesia, and anaesthetic agents.
24 hours, lectures and laboratory demonstrations.

THIRD YEAR

Toxicology. A short series of lectures dealing with the general problem of toxic substances in the environment as well as the toxic effect of drugs, both from their use and misuse. Prevention and treatment are discussed.
5 lectures.

Clinical Pharmacology. A series of colloquia given in collaboration with the Department of Anaesthesia. Subjects include: clinical trials, placebos, general sedation; autonomic blockade, muscle relaxants, therapeutic gases, electrolyte balance, and the management of pain, hypotension, shock, convulsions and drug intoxication.
13 hours.

NURSES

Survey of Pharmacology and Drug Therapy. A course outlining the properties of drugs, their mechanisms of action, therapeutic uses, limitations and toxicity.
2 lectures, full course.

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

University Hospital, 4th Floor

Head of the Department:
M. G. P. Cameron, MD Toronto; FRCP(C)
PROFESSOR: Cameron ASSISTANT PROFESSORS: Durnin, Stewart LECTURERS: Krysztofiak, Newell CLINICAL LECTURERS: Berkeley HONORARY LECTURERS: Donisch, Robinson

THIRD YEAR

Lecture-demonstrations will be given on medical, surgical and paediatric problems in rehabilitation. Techniques of electrodiagnosis, physical therapy and the use of braces and prostheses will be shown. Physical therapy prescription writing will be stressed. The social, economic and psychological effects of chronic disability will be discussed with various members of the rehabilitation team.
16 hours.

FOURTH YEAR

During a one week period, each student will act a s a clinical clerk on the rehabilitation service. There will be opportunities to study electrodiagn ostic techniques, amputees and prosthetics, and to participate in assessing and writing physiotherapy prescriptions for patients in an out-patient setting.
20 hours.

DEPARTMENT OF PHYSIOLOGY

M.S.B. 223

Chairman of the Department:
V. B. Brooks, BA PhD Toronto; MS Chicago
PROFESSORS: Armstrong, Brooks, Calaresu, Mogenson ASSOCIATE PROFESSORS: Bondy, Critz, Dellow, Harding, Mercer, Seguin, Squires, Vanderwolf, Wiesendanger ASSISTANT PROFESSORS: Cooke, Cunningham, Girvin, Lodge, O'Hea, Weick VISITING ASSISTANT PROFESSOR: Swart LECTURER (Sessional): Sellery HONORARY LECTURERS: Chess, Manning, Rounthwaite INSTRUCTOR: Bolter

FIRST YEAR

Human Physiology. The course is composed of lectures, informal group discussions, demonstrations, laboratory work, and assigned study. The general objective of the course is to develop a basic core knowledge of human physiology, utilizing the main general themes of homeostasis and control mechanisms of bodily functions. Attention will be given to basic material necessary for the understanding of human physiology as a medical discipline and for the applied physiology of the "Introduction to Clinical Clerkship" and the "Neurosciences and Mind" programmes. The course of study involves: Man and his environment; Neuronal mechanisms and an introduction to the Central nervous system; Cardiovascular system; Respiratory system; Endocrine system; Renal system; Gastrointestinal system; Sex and reproduction; and Integrative mechanisms. A student is expected to acquire a fundamental knowledge of all the body systems, of the interrelations among these systems, and of man as an integrated organism capable of ad-

justing to his environment. It is also expected that the parameters of health at all ages, and will be able to predict those changes that will occur during both internal and external stresses.
This course is taught jointly to Medical and Dental Students.
96 hours.

Laboratory Physiology Elective. This course consists of laboratory exercises in mammalian and human physiology and is aimed at providing instruction in experimental methods and techniques.
Limited enrolment (for details consult the Department of Physiology).
96 hours.

SECOND YEAR

Advanced Physiology Elective. This course consists of tutorials, reading assignments, and laboratory and clinical demonstrations designed to provide students with in-depth study of specific body systems.
Limited enrolment (for details consult the Department of Physiology).
96 hours.

THIRD YEAR

Advanced Physiology Elective. This course consists of tutorials, reading assignments and laboratory and clinical demonstrations designed to provide student with in-depth study of specific body systems.
Limited enrolment (for details consult the Department of Physiology).
96 hours.

FIRST, SECOND AND THIRD YEARS

Interdisciplinary Teaching. The study of physiology of bodily systems is part of other courses in the Medical curriculum, i.e. Integrative Biology, Neurosciences and Mind, Clinical Science, and Introduction to Clinical Clerkship and consists of interdisciplinary coverage of normal and abnormal function correlated to the presentation of clinical cases.
Hours not assigned (see under various interdisciplinary courses).

201. Physiology: (Second or Third Year Nursing, Second Year Physical Therapy, First Year Occupational Therapy, and Second Year Communication Disorders). A course of lectures covering the principles of Physiology; general properties of the living cell and tissue, peripheral nerve and muscle, blood, metabolism and nutrition, digestion, circulation, respiration, kidney and body fluids, and endocrine glands and reproduction. Concurrent with the lectures, a course of laboratory exercises and conferences to demonstrate and analyse the function of the various physiological systems.
130 hours.

FOURTH YEAR (PHYSICAL THERAPY)

442. Physiology. Advanced course in neuromuscular and exercise physiology.
52 hours, half course.

443. Physiology. Advanced course in neurophysiology.
26 hours, half course.

DEPARTMENT OF PSYCHIATRY

10th Floor, University Hospital

Chairman of the Department:
G. F. D. Heseltine, BA Manitoba; LMSA West London; DPsych McGill; FRCP(C); MRC Psych(Eng).
PROFESSORS: J. J. Aufreiter, Heseltine, Hobbs ASSOCIATE PROFESSORS: Bacal, Keil, MacPherson, Mai, Max, Tillmann CLINICAL ASSOCIATE PROFESSORS: Goldberg, Wickware ASSISTANT PROFESSORS: Frelick, Gort, Jurjans, McLeish CLINICAL ASSISTANT PROFESSORS: G. Aufreiter, Boyce, Conlon, Deinum, Dubois, D. A. Galbraith, F. G. Johnson, Summerby, Thompson LECTURERS: Stewart, Thurlow CLINICAL LECTURERS: Andrews, Babiak, R. C. Corrin, Dolan, H. C. Galbraith, Jenkins, D. M. M. Johnson, Kalb, Kaufman, Lapp, McKenzie, Palmer, Russell, Tobin INSTRUCTORS: B. N. Corrin, R. L. Dingus, R. M. Dingus, Hoover, Lovegrove, McKim, Mountain, Nugent, Rai, Riese

FIRST YEAR

1. Neuroscience and Mind. An integrated approach with Neurosciences emphasizing normal and abnormal psychological concepts, their recognition as psychiatric entities, and general principles of management.

SECOND YEAR

2. A lecture course with demonstration clinics covering the clinical syndromes of Psychiatry. Emphasis is on the syndromes encountered in the practice of Medicine.
48 hours.

THIRD YEAR

3. A series of lectures emphasizing the background knowledge essential in the understanding of the psychiatric case in the first term and the various therapies in the second term.

4. During the first term, there is one clinic on the psychiatric examination. During the second term there are twelve three-hour clinics in the various psychiatric facilities associated with the Department.

FOURTH YEAR

5. For a three-week period students will act as clinical clerks in the psychiatric wards of the general hospitals.

6. Clinical experience with psychiatric disorders of children will be provided during the clerkship in Paediatrics.

DEPARTMENT OF DIAGNOSTIC RADIOLOGY

University Hospital - 2nd Floor

Chairman of the Department:
L. S. Carey, MD, CM, MSc(Med) Queen's; MS Minnesota
PROFESSORS: Allcock, Carey ASSISTANT PROFESSOR: Gold CLINICAL PROFESSORS: Johnston, Wilkins CLINICAL ASSOCIATE PROFESSOR: Agnos CLINICAL ASSISTANT PROFESSORS: R. K. Coates, CLINICAL LECTURERS: Black, Brown, Edgar, Greenhow, Hamilton, Harwood, Linsdell, Reid-Smith HONORARY LECTURERS: Hauch, Hill INSTRUCTORS (P.T.): C. F. Coates, Eakins, Lefcoe

A course in Diagnostic Radiology is given in the Third Year. This consists of sixteen hours of instruction in weekly sessions, the first few of which are devoted to didactic lectures. In the remaining sessions the class is divided into small groups, each assigned to an instructor with whom current Radiological cases are studied in detail and in which System Study is accentuated.

In the Fourth Year, each student spends one week in the Department of Diagnostic Radiology at the new University Hospital, Victoria Hospital or St. Joseph's Hospital.

The staff of the Department contributes to interdisciplinary conferences, mainly in the Third and Fourth Years. There is as well active participation on the part of the departmental staff within the Department of Anatomy.

DEPARTMENT OF THERAPEUTIC RADIOLOGY

c/o The Ontario Cancer Foundation London Clinic, Victoria Hospital

Head of the Department:
T. A. Watson, MB, ChB New Zealand; DMR London; MD Saskatchewan; FACR, CRCP(C)
PROFESSOR: Inch CLINICAL PROFESSOR: Watson ASSOCIATE PROFESSORS: Heagy, MacDonald CLINICAL ASSOCIATE PROFESSOR: Thomson CLINICAL ASSISTANT PROFESSORS: Banerjee, Fetterly LECTURER: Sutherland HONORARY LECTURERS: Barton, McCredie, Plunkett, Reese, Warwick, White CLINICAL LECTURER: Dawson INSTRUCTORS: Driedger, Gilchrist, Willan

Instruction for the most part is built around clinical material which is available through The Ontario Cancer Foundation's London Clinic at Victoria Hospital. Joint teaching sessions in conjunction with the clinical departments are arranged. Each Fourth Year student rotates through this Department for five half-days for instruction in radiation therapy, the medical uses of radioisotopes and general experience in cancer. A limited number of electives in radiotherapy, radiobiology, nuclear medicine and chemotherapy is available.

DEPARTMENT OF SURGERY

Professor and Head of the Department:
A. D. McLachlin, MD, MSc UWO; DPhil Oxon; MS Toronto; FRCS(C), FRCS(Eng), FACS

Division of Cardiovascular and Thoracic Surgery

Clinical Professor and Chairman of the Division:
J. C. G. Coles, BA, MD, MSc UWO; FRCS(C)
CLINICAL PROFESSOR: Coles CLINICAL LECTURER: Gergely

Division of General Surgery

Professor and Chairman of the Division:
A. D. McLachlin
PROFESSORS: Carroll, Duff, A. D. McLachlin CLINICAL PROFESSOR: Johnston ASSOCIATE PROFESSOR: McCredie CLINICAL ASSOCIATE PROFESSOR: McLarty ASSISTANT PROFESSORS: Grace, Passi CLINICAL ASSISTANT PROFESSORS: Jamieson, MacKenzie CLINICAL LECTURERS: Marshall, J. A. McLachlin, Meads, Walker INSTRUCTOR P.T.: Sweeney

Division of Neurosurgery

(See Department of Clinical Neurological Sciences)

Division of Orthopaedic Surgery

Clinical Professor and Chairman of the Division:
J. C. Kennedy, MD UWO; FRCS(C)
CLINICAL PROFESSOR: Kennedy CLINICAL ASSOCIATE PROFESSOR: Cameron ASSISTANT PROFESSORS: Brash, Repo CLINICAL LECTURERS: Bailey, Fowler, Grainger LECTURER P.T.: Ollerhead

Division of Plastic & Reconstructive Surgery

Clinical Professor and Chairman of the Division:
R. M. McFarlane, MD, MSc UWO; FRCS(C), FACS
CLINICAL PROFESSOR: McFarlane ASSISTANT PROFESSOR: Hurst CLINICAL LECTURER: Stavraky

Division of Urology

Clinical Professor and Chairman of the Division:
L. N. McAninch, MD UWO; FRCS(C), FACS
PROFESSOR: McAninch CLINICAL ASSOCIATE PROFESSOR: Wyatt ASSISTANT PROFESSOR: Sharpe CLINICAL ASSISTANT PROFESSORS: Reese, Sales CLINICAL LECTURERS: Busby, Shepherd INSTRUCTOR: Downham

The course content and method of teaching have been changed extensively. Greater emphasis is placed on the principles of surgery and the contribution by the Basic Sciences. The anatomical and technical aspects play a much smaller role. Acquiring knowledge from clinical contact and discussion is encouraged. Few didactic lectures are given.

SECOND YEAR

An introductory course in Clinical Science is given in conjunction with the Departments of Medicine, Obstetrics and Gynaecology, and Paediatrics. Major emphasis is placed on history-taking and physical examination.
63 hours.

THIRD YEAR

Lectures. The principles of surgery and course content are presented.
46 hours.

Clinical Teaching. This is mainly accomplished by ward rounds, clinical demonstrations and seminars. The ability to take a good history and perform an adequate physical examination are regularly checked.
96 hours.

FOURTH YEAR

Clinical Clerkship. Each student works in general surgery and one Surgical specialty. Students are required to take the history, make physical examination, and write orders under supervision on patients assigned to them. Two-hour seminars are held each morning on topics covering the major fields in surgery.
140 hours.

Interdisciplinary and Clinical Pathological Conferences. These are presented weekly. There are no formal lectures.
38 hours.

FIRST YEAR INTEGRATED COURSES (New Curriculum)

Introduction to Medicine. This course will begin the week prior to the formal teaching of first year and will give the students an unequalled opportunity to hear about the health care system and those involved in it. They will spend the first day in health care facilities, another day with a physician discovering some of the rules that are required of health care personnel and another day discussing and exploring problems and issues in health care.

Clinical Methods. In this first of two years of instruction in the acquisition of clinical data employing interview techniques, history development and physical examination, there will be an evolution from the teaching of basic interviewing and examination skills to a clinical approach to patient presentations, using clinical data in problem definition.

Medicine and Society. This course, which is interdepartmental in design and presentation, is given during the first two years of the medical curriculum. It comprises the following topics: the history of medical science, the health of society, the health care system, ethical values in medicine and medicine in relation to the law.

Integrative Biology. An interdisciplinary approach to human biology emphasizing problems in medicine. Illustrative topics will include intra and intercellural control systems, differentiation and embryogenesis, total body control, energy balance, aging, inborn errors of metabolism and selected aspects of basic and applied human genetics.

Clinical Sciences. This course is designed to present a wide spectrum of common clinical problems from an interdisciplinary viewpoint. Classroom discussions and small group clinical sessions will demonstrate logical methods of problem solving.

Neuroscience and Mind. An interdisciplinary course involving mainly Neuroanatomy, Neurophysiology, Neuropharmacology, Neuropathology, Neurology, Neurosurgery and Psychiatry. Instruction takes the form of lectures, clinical demonstrations and laboratory work, the immediate objective being to enable students to use their core of basic and clinical knowledge in the clinical clerkship years.

SPECIAL LECTURES

Legal Medicine. Special Lecturer: H. Krever.
A course of lectures to the students of the Third Year on law and its relation to the practice of medicine.
5 hours.

Medical Ethics. Special Lecturer: J. B. C. Robinson.
A series of nine lectures is given by Dr. J. B. C. Robinson on medical ethics and problems of practice to the Third Year.
9 hours.

Information and Computer Science. A series of four lectures introducing students to the field of Information and Computer Science will be given in the third year with the co-operation of the Department of Computer Science.

TIMETABLE 1973-1974 SESSION

First Year

First Trimester.	September 4 to November 30 (includes extra week at the beginning for "Introduction to Medicine" Course)
Second Trimester	December 3 to March 8
Third Trimester	March 11 to May 31

Second and Third Years

First Quarter	September 10 to November 2
Second Quarter	November 5 to January 11
Third Quarter	January 14 to March 8
Fourth Quarter	March 11 to May 3

Fourth Year

The Fourth Year will be a 48-week Clinical Clerkship, broken into five nine-week Terms as follows:

First Term	Monday, June 25th to Sunday, August 26th, inclusive:
Second Term	Monday, August 27th, to Sunday, October 28th, inclusive:
Third Term	Monday, October 29th, to Sunday, January 6th, inclusive:*
Fourth Term	Monday, January 7th, to Sunday, March 10th, inclusive:
Fifth Term	Monday, March 11th, to Sunday, May 12th, inclusive.

*This Term is ten weeks to allow one week's leave during the Christmas holiday period.

The students will rotate through the various Departments so that each student will be on the various Services for the length of time specified below:

SERVICE	NUMBER OF WEEKS
Anaesthesia	1
Family Medicine (including Preventive Medicine and Physical Medicine)	3 1/2
Medicine	9
Obstetrics and Gynaecology	4 1/2
Ophthalmology	1
Otolaryngology	1
Paediatrics	4 1/2
Psychiatry	3**
Diagnostic Radiology	1
Therapeutic Radiology	1/2
Surgery	7

SERVICE	NUMBER OF WEEKS

The remaining twelve weeks will be utilized as follows:

Elective	8
Travel Time with Elective	1
Examinations and Study Time	2
Christmas Leave* (see note above)	1

*To be arranged by the Head of the Department concerned in each case.

**In order to comply with the regulations of The College of Physicians and Surgeons of Ontario, all students contemplating a Straight Interneship rather than a Rotating Interneship must arrange to take a fourth week of Psychiatry during Elective or vacation time.

Interdisciplinary Conferences will be held, jointly with Third Year, at 0800 hours, Thursday morning, at Victoria Hospital, weekly beginning Thursday, January 17th. Clinical Pathological Conferences will be held at the various hospitals, students being expected to attend at the hospital where they are working at the time.

All students will be provided with detailed schedules and instructions for each Term before the beginning of the Session.

PROGRAM IN COMMUNICATION DISORDERS

Room 0009-35A, Dental Sciences

Director:

J. L. Stouffer, BSc Buffalo State; MSc, PhD Pennsylvania State

ASSOCIATE PROFESSOR: Stouffer

ASSISTANT PROFESSORS: Booth, Kroll, Tuomi, Yovetich HONORARY LECTURER: Rounthwaite

GENERAL INFORMATION

Communication Disorders is a four-year course of study. The first year of study is in a general university program, and students are not eligible to apply to Communication Disorders until their first year of university training is completed. The aim of the program is to provide students with an education in the sciences and social sciences and simultaneously prepare students for a career in Audiology and Speech Pathology. The Program in Communication Disorders is designed to develop a broad theoretical background in Audiology and Speech Pathology and to provide students with practical experience in Audiology and Speech Pathology. Graduates of the program receive a Bachelor of Science degree in Communication Disorders, BSc(CD), and are encouraged to obtain a Master's degree to further develop their therapeutic, remedial and research skills.

ADMISSION REQUIREMENTS FOR COMMUNICATION DISORDERS (SECOND YEAR OF UNIVERSITY)

In the first year of university studies, Psychology 20 is required, and several science courses are recommended. The first university year can be completed at any accredited university and in addition to Psychology 20, it is suggested that applicants include courses equivalent to the following courses offered at the University of Western Ontario: Biology 20 or 21, Physics 20 or 22, Mathematics 20 or 24 or 27 or Applied Mathematics 20. Other non-terminal courses may be accepted upon individual consideration. The suggested courses will provide students with a good background for the program and will also prepare students for many alternate programs of study if they are not accepted into Communication Disorders.

NOTE: SOME OF THE SUGGESTED FIRST YEAR SCIENCE COURSES WILL NOT PREPARE STUDENTS FOR CERTAIN PROGRAMS OF STUDY. THUS, PROSPECTIVE STUDENTS SHOULD SELECT THEIR FIRST YEAR COURSES UNDER THE GUIDANCE OF THE DEPARTMENT IN WHICH THE ALTERNATE COURSE OF STUDY WILL BE PURSUED.

Admission Requirements to Communication Disorders will be based on:

(a) First year achievement - Minimum "C" standing

(b) Achievement in Psychology 20 - Minimum of "C" standing.

Enrollment in the Program in Communication Disorders is limited and admission to the first professional year (second year university) is by selection. In the past, the first year academic average of students admitted to the program has been in excess of 70%; interested students are advised to obtain the best grades possible. Application forms are available from the Director of Admissions. Final date for application to First Year university studies: July 1. Final date for application to the Program in Communication Disorders: May 31.

Prospective students are advised to schedule an interview with a member of the faculty by calling 519-679-6465.

FEES AND OTHER EXPENSES

Refer to the General Information section of this Calendar.

COURSES OF STUDY

SECOND YEAR

216a. Introductory Audiology. Basic considerations of hearing impairment. Discussion of causes, types and measurement of hearing loss.
3 lecture hours, 2 laboratory hours.

223b. Phonetics. Concepts and principles of phonetic analysis. Application of the International Phonetic Alphabet to the description and analysis of speech.
2 lecture hours, 2 laboratory hours.

238. Survey of Speech Disorders. Development of speech and language. Introduction to the etiology, symptomatology, and nature of defective speech.
3 lecture hours.

20a. Anatomy. Introduction to Anatomy. Systemic anatomy designed primarily for students in the Allied Health Professions. The Embryology, Gross and Microscopic Anatomy of the major organ systems of the body will be studied.
2 hours.

202a. Anatomy. Anatomy for students in Communication Disorders program. A detailed consideration of the head and neck regions of the human body. Special emphasis is placed on the anatomy of the speech and hearing mechanisms.
(Prerequisite: Anatomy 20a).
2 hours.

241. Psychology. Developmental Psychology: Basic Principles.

34. Physics. Physics of Speech and Hearing.

201. Physiology. A survey course of lectures, demonstrations and laboratory exercises outlining the principles of mammalian physiology with emphasis on human environment, nerve and muscle, cardiovascular, respiratory and gastrointestinal systems; metabolism and nutrition; body fluids and kidney; the nervous system; endocrine glands; reproduction, controls regulations and homeostasis.

THIRD YEAR

321b. Auditory Tests. Supervised clinical practice in puretone air and bone conduction audiometry. Audiogram interpretations and rehabilitative recommendations considered.
1 lecture hour, 3 laboratory hours.

324. Hearing Measurement. Advanced puretone and speech audiometry, psychophysics of audition related to clinical problems special tests and exploratory techniques for assessing the usefulness of residual hearing. Study of the physical components of hearing aids, hearing aid performance and clinical evaluation of hearing aid use in education and rehabilitation.
3 lecture hours.

327. Remedial Principles. Principal methods used for rehabilitation of individuals manifesting disorders of articulation, voice, language, fluency etc. Students will be required to observe and participate in the therapeutic process of various clinics.
3 lecture hours, 2 laboratory hours.

330a. Speech Reading. Principles and techniques of remedial procedures for hearing handicapped; examination of clinical practices; evaluation of recent research in this field.
3 lecture hours.

382. Diagnostic Methods in Speech Disorders. Clinical instrumentation; case history taking; examination procedures and materials used in diagnosing speech disorders; interpretation of findings; interviewing and counselling procedures; report preparation.
3 lecture hours.

242. Psychology. Developmental Psychology: Exceptional Children.

Any one of:

Psychology 80. The Human Animal

Psychology 211. Principles of Sensation and Perception.

Psychology 221a. Biological Basis of Behavior and 224b. Neural Basis of Cognitive Processes

Psychology 281. Research Methods and Statistics

Practicum*

***Practicum.** During the summer months after the third and fourth years, students in Communication Disorders will be required to undergo an 8 week period of practicum at various clinics in the London area during which time they will observe and participate in diagnostic, therapeutic, counselling, etc. procedures under the supervision of the various therapists in charge.

FOURTH YEAR

428a. Stuttering. Research and theory of stuttering behaviour, causes, developmental factors, and remedial procedures.
3 lecture hours, 2 laboratory hours.

492. Seminar in Audition. Concepts and principles relevant to the normal hearing processes; acoustics, review of the gross anatomy of the ear, psychophysical methods and basic subjective correlates of the auditory system.
3 seminar hours.

494. Seminar in Speech Pathology. A consideration of physiogenic and psychogenic disorders of speech with reference to diagnostic and rehabilitative procedures.
3 seminar hours.

497a. Speech Science. Physiologic, acoustic and perceptual characteristics of speech. Principles and methods for the laboratory study of speech.
2 lecture hours, 2 laboratory hours.

One Option (free)

201a. Psychology. Basic Principles of Learning.

204b. Psychology. Human Learning: Behavior Modification.

Two Electives (must be chosen from the following):

484a. *Seminar* in Special Areas. Directed study of special problems in Speech Pathology and Audiology including the organization and administration of speech and hearing programs in special settings.
2 seminar hours.

495b. Research in Speech Pathology. A review of current literature and research in Speech Pathology.
3 lecture hours.

488b. Noise and Man. Environmental noise; its characteristics, effects on hearing and its control; associated topics. (Consent of instructor)
2 lecture hours, 2 laboratory hours.

490y. Psychoacoustics. Lectures and discussion on advanced topics and current research in auditory sensation and perception. (Consent of instructor)
2 lecture hours, 2 laboratory hours.

Practicum*

***Practicum.** During the summer months after the third and fourth years, students in Communication Disorders will be required to undergo an 8 week period of practicum at various clinics in the London area during which time they will observe and participate in diagnostic, therapeutic, counselling, etc. procedures under the supervision of the various therapists in charge.

STANDARDS OF ACHIEVEMENT

Students in Communication Disorders automatically qualify for advancement to each subsequent year by obtaining a grade average of at least 70% and a passing grade in every course.

Students who obtain an 80% or better grade average in any year will pass that year with honors. Students who pass each year of the Program with honors will graduate cum laude.

Students who fail to qualify for automatic advancement but who have a grade average of at least 60% and a passing grade in every course may be permitted to progress at the discretion of the Program.

A professor, at his discretion, may allow a student to take one supplemental examination in professional courses in each academic year.

A student will fail a complete year if his average in all courses falls below 60%, or if he fails one or more professional courses. A student who has failed a year may be given permission, under special circumstances, to repeat that year. When a student is allowed to repeat a year, he must pass that year without condition in order to continue in the Program.

LICENSING

In Canada at the present time, only the Provinces of Manitoba and Quebec require that Audiologists and Speech Pathologists be licensed.

Regulations regarding eligibility for practice in Canada, Britain, the United States or other countries may be obtained by writing to the following:

The Canadian Speech and Hearing Association
74 Hughson Street South
Hamilton, Ontario

The American Speech and Hearing Association
9030 Old Georgetown Road
Washington, D.C. 20014

Secretary
The College of Speech Therapists
47 St. John's Wood High Street
London, N.W.8
England

International Association of Logopedics and Phoniatrics
Svejagervij 52, Hellerup
Copenhagen, Denmark

PROGRAM IN OCCUPATIONAL THERAPY

Health Science Centre, The University of Western Ontario, London

Director:
Margaret F. Trider, O.T.Reg
ASSOCIATE PROFESSOR: Trider ASSISTANT PROFESSORS: Ernest, Mack, Parker CLINICAL LECTURERS: Shimeld, Stevenson, Verma, Woolcock

The objective of the four-year undergraduate Program in Occupational Therapy is to offer students a general education through the study of appropriate biological, medical and behavioral sciences, in conjunction with professional courses, in preparation for the practice of occupational therapy. The curriculum is designed to prepare future practitioners to provide a service directed towards the prevention, reduction or elimination of incapacity resulting from physical, psychosocial or environmental stress. The course of study leads to the degree of Bachelor of Science in Occupational Therapy (BSc (OT).

ADMISSION REQUIREMENTS: UNDERGRADUATE PROGRAM

FIRST YEAR

Enrollment in Occupational Therapy is limited. The candidate is advised to have an alternate plan should he not gain entry into the Program. Applications for the Program should be submitted to the Director of Admissions by March 31.

A full Ontario Grade XIII program, or its equivalent, as described in the 1972-73 General Information Booklet, plus satisfactory completion of the tests of the Service for Admission to College and University (SACU) administered through the Ontario high schools, OR the tests of the College Entrance Examination Board (CEEB). A minimum acceptable Grade XIII average is not specified since enrollment in this program is limited. Applicants will be considered by the Admissions Committee on the basis of individual merit and in competition with other applicants to the Program.

Candidates are advised to include Biology in their Grade XIII courses.

An interview is given by members of the Faculty of the Program to ensure that applicants have full knowledge of the Program and of his chosen profession, and is personally suited for the practice of occupational therapy.

The final choice made by the Admissions Committee of the Program is dependent upon the academic record of the student, plus his personal suitability. The Admissions Committee reserves the right to reject candidates who have obtained the published minimum requirements.

ADMISSION REQUIREMENTS: POST-DIPLOMA PROGRAM

Candidates holding a Diploma from a school of Occupational Therapy accredited by the World Federation of Occupational Therapists and recognized as the equivalent of the Canadian Schools of Occupational Therapy, and who hold Canadian citizenship or Landed Immigrant status, may apply for admission to the Post-Diploma Program which consists of 10 credits, and leads to the bacca-laureate degree. This Program is four semesters in length, and may include summer sessions.

Applications for the Program should be submitted to the Director of Admissions by March 31.

FEES

Each Year:

Payable at registration $617.50

Laboratory fee $45.00

If paid in two instalments -

Registration Day (including Laboratory fee) $395.00

First Day of Second Term $272.50

NOTE: The Board of Governors reserves the right to amend the above mentioned fee structure after the printing of this announcement.

ADDITIONAL EXPENSES

Books, instruments, travel, stationery, uniforms, approximately $150.00.

COURSES OF STUDY

FIRST YEAR

Sociology 20
Psychology 20
Anatomy 20a
Anatomy 23
Physiology 201
Occupational Therapy 100a
Occupational Therapy 180b

SECOND YEAR 1973-74 ONLY

Psychology 241
Sociology 40
Anatomy 20a
Anatomy 23
Neuroanatomy 278b
Occupational Therapy 221
Occupational Therapy 223

SECOND YEAR 1974-75

Psychology 241
Sociology 40
Anthropology 20
Psychology 251
Neuroanatomy 278b
Occupational Therapy 221
Occupational Therapy 223

THIRD YEAR

Psychiatry y
Paediatrics y
Medical and Surgical Lectures 198
Pathology a
Occupational Therapy 331
Occupational Therapy 340a
Occupational Therapy 341b
Occupational Therapy 343
Occupational Therapy 361
Occupational Therapy 370
Occupational Therapy 353
(Field Placement during summer months)

FOURTH YEAR

Psychology 262a
Psychology 263b
Occupational Therapy 410
Occupational Therapy 413
Occupational Therapy 415
Occupational Therapy 454
Occupational Therapy 471
Occupational Therapy 490
Selective: One of
Psychology 252
Psychology 242
Anatomy 214-4
Physiology 201-4
Sociology 346
Anthrolpology 20
Engineering 290
Mathematics 37a and 38b

REQUIREMENTS FOR STANDING

ATTENDANCE

80% attendance at lectures and laboratories is required. 100% attendance is required for field placements. Students may be denied the right to write examinations because of unsatisfactory attendance at lectures or laboratories, or unsatisfactory work.

EXAMINATIONS

(a) Each examination subject is weighted according to its value and number of lecture-laboratory hours.

(b) Tests, assignments and practical work will account for a certain percent of the total mark, the remainder being accounted for by the final examination in the Spring.

(c) Grades:

80 - 100% A
70 - 79% B
60 - 69% C
50 - 59% D
40 - 49% E
0 - 39% F

A, B, C and D are passing grades.

(d) One supplemental examination is permitted in professional courses in each academic year.

(e) Examinations may be of an oral, written, practical, subjective or objective nature. The fourth year final examinations in the professional subjects are comprehensive examinations, and are designed to cover the whole four years work, and to determine whether the student has sufficient general knowledge to become a competent occupational therapist. These examinations may be written or oral, or both, and are additional to the course examinations.

(f) The student is advised that a failed paper has been read at least twice. Note statement on "Appeal" in the General Information Booklet.

ADVANCEMENT

ADVANCEMENT TO SECOND YEAR

A student qualifies for admission automatically if, for the previous year he has obtained a grade of at least 70% in each required course, and an overall grade average of at least 60%, with a passing grade in any subsidiary course. A student who fails to qualify for automatic admission but has a grade of at least 60% in each required course, and an overall grade average of at least 60%, and a passing grade in any subsidiary course, may be permitted to advance at the discretion of the Program.

ADVANCEMENT TO SUBSEQUENT YEARS

A student qualifies for admission automatically to each subsequent year, if he has obtained a grade average of at least 70% and a passing grade in every course. A student who fails to qualify for automatic admission but who has a grade average of at least 60% and a passing grade in every course may be permitted to progress at the discretion of the Program.

(One supplemental examination is permitted in professional courses in each academic year.)

A student who obtains an average grade of 80% or better in a years work is considered to have passed that year with honors. A student who passes with honors in each year in the Program in Occupational Therapy will be graduated cum laude.

A student will be considered to have failed to complete a years work if:

(1) His general average (in all courses of that year) falls below 60%, or

(2) He has failed in more than one professional course.

A student may be given permission by the Program in Occupational Therapy to write a supplemental examination in a professional course. (Note that supplemental examinations are not offered by the Faculties of Arts, Science, or Social Science.)

GRADUATE INFORMATION

The governing and registering body is the Canadian Association of Occupational Therapists. Applicants for registration must have successfully completed a University program in Occupational Therapy.

Registration permits the therapist to practice in Britain, the United States, or other countries and information may be obtained by writing to the following:

Canadian Association of Occupational Therapists
Suite M19, 4 New Street
Toronto 189, Ontario

The American Occupational Therapy Association
251 Park Avenue South
New York, New York 10010, U. S. A.

The Association of Occupational Therapists
251 Brompton Road
London S.W.3, England

The World Federation of Occupational Therapists
29 Sherbrooke Avenue
Glasgow S.1, Scotland.

DESCRIPTION OF COURSES

FIRST YEAR

Psychology 20. Introduction to Psychology. A general survey of the methods and findings of Psychology in the scientific analysis of animal and human behavior. Topics to be covered may include Learning, Motivation, Perception, Thinking, Memory, Development and Maturation, Personality Theory and Measurement, and Social Interaction. Voluntary participation in approved projects will be encouraged.
3 lecture hours.

Sociology 20. Introduction to Sociology. An examination of the major theoretical perspectives in the field of Sociology, methods of empirical investigation of social phenomena, socialization, group structure, principles of social organization, community structure, population and social change.
3 lecture hours.

Occupational Therapy 100(a). Introduction to the philosophy and history of Occupational Therapy; orientation to the Health Sciences and Behavioral Sciences; survey of systems of delivering health care.
3 lecture/demonstration hours.

Occupational Therapy 180(b). Research design and elementary statistics. An introduction to empirical methods in Occupational Therapy including normal distribution, frequency distribution, probability testing and experimental design.
3 lecture hours.

Physiology 201. 1. A course of lectures covering the principles of Physiology: general properties of the living cell and tissue, peripheral nerve and muscle, blood, metabolism and nutrition, digestion, circulation, respiration, kidney and body fluids, the endocrine glands and reproduction.
2 lecture hours.

2. A course of laboratory exercises and conferences to demonstrate and analyse the functions of the various physiological systems.
3 laboratory hours.

Anatomy 20(a). Introduction to Anatomy. Systemic anatomy designed primarily for students in the Allied Health Professions. The Embryology, Gross and Microscopic Anatomy of the major organ systems of the body will be studied.
2 lecture/laboratory hours.

Anatomy 23. Anatomy for students in the Occupational Therapy Program. The musculo-skeletal anatomy of the human shoulder region and upper limbs will be covered in detail by lecture and laboratory dissection. Other areas of the human body will be studied from prosected specimens and surface anatomy sessions.
(Co-requisite Anatomy 20(a)).
2 lecture/laboratory hours First Term, 4 lecture/laboratory hours Second Term.

SECOND YEAR

Psychology 241. Developmental Psychology: Basic Principles. A general survey of theory and research in developmental psychology including learning, cognition, perception, personality, and social development in infancy and early childhood.
2 lecture hours, 2 seminar hours.

Sociology 40. Social Problems. Study of theories of deviant behavior and of social disorganizations, with particular attention to certain specific problems of the contemporary period.
3 lecture hours.

Anthropology 20. A survey of the basic concepts and teachings of anthropology. Discussion topics include: the origin of man; origin and development of culture and social structure; nature of race; comparative study of such cultural institutions as language, art and religion; ethnology of a selected area.
3 lecture hours.

Psychology 251. Research oriented analysis of representative personality theories examination of typical personality assessment techniques; consideration of methods and findings of research on personality.
4 lecture/demonstration hours.

Neuroanatomy 278(b). A summary of the gross, microscopic and functional anatomy of the brain and spinal cord of the human. A two-hour television demonstration is provided in lieu of laboratory periods.
1 lecture/demonstration hour.

Occupational Therapy 221. An introduction to clinical kinesiology utilizing the essentials of gross anatomy, and the principles of biomechanics and neurophysiology as they apply to an integrated study of motor function under normal and pathological conditions. Techniques preparatory to the assessment of physical disability and the kinetic analysis of activities are explored.
2 lecture hours, 2 laboratory hours.

Occupational Therapy 223. The theory and practice of occupational therapy emphasizing techniques of kinetic analysis of activity including kinesiological and electromyographic approaches. Introductory topics relating to industrial euthenics, tool and workplace design, lifting theory, etc.,

are discussed. Included also are the principles of construction and design as related to adaptive equipment for the disabled.
2 lecture hours, 2 laboratory hours.

THIRD YEAR

Psychiatry (b). An introduction to the clinical syndromes in psychiatry. Consideration of various theoretical frames of reference and therapeutic methods.
1 lecture hour.

Paediatrics (y). An introduction to clinical paediatrics.
1 lecture hour.

Pathology (b). A brief description of general pathological processes enabling the student to comprehend the pathology of disease.
1 lecture hour.

Medical and Surgical Lectures 198. Lectures and demonstrations emphasizing the aetiology, symptomatology and treatment of diseases, emphasizing those of particular interest to the occupational therapist.
3 lecture/demonstration hours.

Occupational Therapy 331. Introduction to the analysis of occupational roles and occupational behavior.
1 lecture hour, 1 laboratory hour.

Occupational Therapy 340(a). Special clinical procedures, tests and measurements.
3 lecture/demonstration hours.

Occupational Therapy 341(b). Introduction to principles of orthotics and prosthetics; to include study of materials, and the design and fabrication or orthotic devices, as well as a study of prosthesis, and training procedures.
4 lecture/demonstration hours.

Occupational Therapy 343. Theory and practice of Occupational Therapy related to the evaluation and management of medical, surgical (including orthopaedic), neurosurgical and neurological conditions; specific assessment and management techniques.
1 lecture hour, 2 laboratory hours.

Occupational Therapy 361. The theory and practice of occupational therapy as applied to child health. Study of normal growth and development precedes consideration of childhood disorders, both congenital and acquired.
1 lecture hour, 2 laboratory hours.

Occupational Therapy 370. An introduction to the theory of object relations, including the application to an understanding of normal behavior, and to clinical syndromes. Students will be exposed to the use of projective techniques and to the psychological analysis of activity, in First Term. Second Term will include an introduction to the practice of dynamically oriented occupational therapy in the mental health field with emphasis on techniques and procedures utilized in the treatment of emotional dysfunction.
1 lecture, 2 laboratory hours.

FOURTH YEAR

Psychology 262(a). Industrial Psychology. The use of behavioral principles in industry. Problems in personnel selection, employee morale, human engineering, and organizational psychology.
2 lecture hours, 2 tutorial hours.

Psychology 263(b). Occupational Psychology. An appraisal of the relationship between human abilities and personality and occupational choice, performance and tenure.
2 lecture hours, 2 tutorial hours.

Occupational Therapy 410. Introduction to case method and techniques of problem solving in the clinical and non-clinical fields of Occupational Therapy. Includes field placement.
1 lecture hour, 4 laboratory/demonstration hours.

Occupational Therapy 413. Advanced theory and practice. Analysis of occupational behavior. Current trends in Occupational Therapy practice. Includes field placement.

1 lecture hour, 2 laboratory/demonstration hours.

Occupational Therapy 415. Studies of selected topics including Program planning, Administration, Ethics and Jurisprudence, Community Programs, Preventive Occupational Therapy, and Techniques of providing consultation.
5 seminar hours.

Occupational Therapy 454. Field work.
5 hours.

Occupational Therapy 471. Consideration of current theoretical frames of reference in Occupational Therapy in the mental health field. Specific therapeutic techniques as applied to various theoretical positions.
3 seminar hours.

Occupational Therapy 490. A comprehensive report or study done by the student on some aspect of Occupational Therapy. The subject must be approved by the Program. One hour per week will be assigned for preparation, at which time faculty members will be available for consultation.
1 hour.

Psychology 242. Developmental Psychology. Exceptional Children. Problems and methods in work with mentally deficient, brain-damaged, and emotionally disturbed children with emphasis on behavior abnormalities and behavior change techniques.
2 lecture hours, 2 seminar hours.

Psychology 252. Abnormal Psychology. An introduction to psychopathology. General principles such as description and classification, development and dynamics, causation, evaluation, treatment, research design. Application of these principles to the analysis of the main syndromes of abnormal behavior.
4 hours.

Sociology 346. Medical Sociology. The study of the social components of health, illness, and patienthood with an emphasis on the nature of health institutions and professions and current issues of lay or professional concern.
3 hours.

Mathematics 37(a). Statistical Methods. An introduction to frequency distributions, measure of central tendency, correlation, probability and hypothesis testing. Intended primarily for students in the Social Sciences, and cannot be taken for credit by students in Mathematics programs.
3 lecture/demonstration hours.

Mathematics 38(b). Distributions, hypothesis testing, multiple regression, prediction and experimental design. Intended primarily for students in the Social Sciences, and cannot be taken for credit by students in Mathematics programs.
3 hours.

Engineering Science 290. Man and His Environment. An interdisciplinary course designed to provide a thorough introduction to all aspects of the study of the environment and environmental problems in a manner which shows their intimate relations with one another.
2 lecture hours, 2 seminar hours.

NOTE: The above outline of courses is subject to change.

POST-DIPLOMA PROGRAM

The course of study shall be determined by the Director, who shall appoint one advisor for each candidate. Successful completion of this Program leads to the degree of Bachelor of Science in Occupational Therapy BSc(O.T.).

Sociology 31

Psychology 271

Occupational Therapy 480 (1 1/2 courses)

Occupational Therapy 495

Five full course electives from:
Anatomy 214-4
Neuroanatomy 278b
Occupational Therapy 422 (1 1/2 courses)
Philosophy 44
Engineering Science 290
1 senior Anthropology
1 senior Psychology
1 senior Sociology
1 Elective

Occupational Therapy 422. Seminars on advanced topics in applied kinesiology with emphasis placed on implications for clinical practice in occupational therapy.

Occupational Therapy 480. Special studies in depth on selected topics of inquiry in an applied bioscience, behavioral science or clinical field related to occupational therapy.

Occupational Therapy 495. Thesis, incorporating the results of an investigation in an appropriate field, as approved by the candidate's advisor.

Anatomy 214-4. An advanced lecture and laboratory dissection course with special emphasis on the nerves, muscles and skeletal system; demonstration lectures in organ anatomy.

Neuroanatomy 278(b). A summary of the gross, microscopic and functional anatomy of the brain and spinal cord of the human. A two-hour television demonstration is provided in lieu of laboratory periods.

Philosophy 44. Philosophy of the Social Sciences and the Philosophy of History. The first term will be devoted to a philosophical examination of the structure and methodology of the social sciences, e.g. psychology and sociology. Special attention will be given to problems of functionalism, teleological explanation, and verification of social theories. The second term will be devoted to a critical examination of various theories of history and historical understanding. Emphasis will be given to problems of explanation, objectivity, chronicling, describing, predicting, etc.
2 lecture hours.

Engineering Science 290. Man and His Environment. An interdisciplinary course designed to provide a thorough introduction to all aspects of the study of the environment and environmental problems in a manner which shows their intimate relations with one another.
2 lecture hours, 2 seminar hours.

Sociology 31. Research Methods and Statistics. An introduction to empirical methods in Sociology, including elementary statistical methods, experimental design, and basic techniques for the measurement of sociological variables.
3 hours.

Social Psychology 271. An introduction to the theories, methods, findings, and problems encountered in the study of man as a social being. Emphasis will be placed on laboratory and field research. Substantive areas to be covered include the following: socialization, social factors in perceptual cognitive processes; attitudes, prejudice and propaganda; social influence; group dynamics; leadership; intergroup relations.

PROGRAM IN PHYSICAL THERAPY

Room B-RE 28, University Hospital, London 72, Ontario

Director:
S. Morgan, Teacher's Diploma in Physiotherapy; BA (U.W.O.)
ASSOCIATE PROFESSOR: Morgan ASSISTANT PROFESSORS: Edwardson, Egan, Grantham CLINICAL LECTURERS: Cameron, Gilroy, MacRae, Read, Thiruchelvam, Valentine

PHYSICAL THERAPY PROGRAM

INTRODUCTION

A Bachelor of Science in Physical Therapy (BSc (P.T.) is offered upon successful completion of a First Year General Program and three years of specialised studies in physical therapy. The program is designed to inlude courses in the Social, Natural and Health Sciences which will provide a basis for and supplement the physical therapy subjects.

CAREER OPPORTUNITIES

Graduates who have satisfactorily completed the required clinical experience are eligible for membership in the professional association and for provincial licensing. Practice is possible in almost all facilities which provide patient care; many diverse areas of specialisation are developing.

Regulations regarding work in Britain, the United States of America, or other countries may be obtained by writing to one of the following addresses:

The Canadian Physiotherapy Association
25 Imperial Street
Toronto 7, Ontario

The Chartered Society of Physiotherapy
14 Bedford Row
London W.C. 1, England

The American Physical Therapy Association
1156 15th St., N.W.
Washington, D.C. 20005

The World Confederation of Physical Therapy
Secretary General
Brigray House
20/22 Mortimer St.
London W.1, England

EXPENSES

a) Fees

Payable at registration annually	$617.50
If paid in two instalments—	
Registration Day	$300.00
First Day of Second Term	$222.00

The fee includes Student Activity and Health Insurance fees totalling $54.

A $50 non-refundable tuition deposit is required of all freshmen students.

b) Other expenses over 3 years: Texts, uniforms, travel, instruments—$700.

c) Interning

Financial support may not be provided during summer internship periods.

ADMISSION

a) Admission Requirements:

Completion of First Year university studies, which must include full courses in the following:

1 in Psychology, Sociology, or Anthropology

2 laboratory, non-terminal courses in 2 of Chemistry, Physics or Biology

2 electives

It is suggested that the candidate choose subjects in his final year in secondary school which will best prepare him for this first university year. He should choose his electives in the First Year so that he assures himself of eligibility for alternative programs.

b) Basis for Admission:

(a) first year achievement - Minimum, overall "C" standing

(b) achievement in required courses - *Minimum overall "C" standing*

(c) counselling: Before applying, prospective candidates are asked to consult the Program Director concerning personal suitability requirements.

Candidates are advised that enrollment in the program is limited, and that minimum achievement will not necessarily be adequate for admission.

Application forms are available from the Director of Admissions.

Final date for application to First Year university studies: July 1, 1973.

Final date for application to Physical Therapy Program: April 30, 1973.

c) Admission with Advanced Standing

Applicants eligible for membership in the Canadian Physiotherapy Association may be granted advanced standing of up to two years of the Four Year Program. Summer Session courses in the Program will be offered for applicants with advanced standing.

Applications for admission with advanced standing for the Winter Session must be submitted to the Director of Admissions by April 30, 1973.

Applications for admission with advanced standing for the 1974 Summer Session must be submitted to the Director of Admissions by December 15, 1973.

PROGRAM OF STUDY

SECOND YEAR

Anatomy 20a
Anatomy 201
Neuroanatomy 278b
Pathology 189a
Physiology 201
Physical Therapy 210
Physical Therapy 220
Physical Therapy 230
Occupational Therapy 340a
Elective
Clinical Physical Therapy 270
Practicum 280
Approximate hours 30 per week

THIRD YEAR

Medicine & Surgery 390
Physical Therapy 300
Physical Therapy 310

Physical Therapy 320
Physical Therapy 330
Physical Therapy 340
Elective
Clinical Physical Therapy 370
Practicum 380
Approximate hours: 30 per week

FOURTH YEAR

Physical Therapy 410a
Physical Therapy 420b
Physical Therapy 440
Physical Therapy Paper 490
Physiology 442a
Physiology 443b
Sociology 46 or senior course
in Social Sciences
Elective: (Advanced Anatomy is offered)
Clinical Physical Therapy 470
Approximate hours: 30 per week.

NOTE: Above outline of courses is subject to change.

ACADEMIC REGULATIONS

Progression in the Program will be based on each year's achievement, the minimum for which is:

an overall course average of "C", "C" in each of principal courses (physical therapy subjects), and satisfactory clinical performance; 80% attendance at lecture and laboratory courses as prescribed for the different years, such attendance to be attested by the Program Director before admission to examinations; 100% attendance in Hospital placements; examination privileges may be cancelled for failure to meet any of the above requirements.

Tests, assignments and practical work, as well as performance in final examinations will constitute final mark in each course.

EXAMINATIONS

Examinations may be oral, subjective, objective, or practical. The Fourth Year examinations in the professional subjects are designed to cover the whole three years' work, and to determine whether the student has sufficient general knowledge to become an effective Physical Therapist.

SUPPLEMENTAL EXAMINATIONS

The privilege of supplemental examinations in courses offered by the Program will be extended to students who obtain an overall average of at least 60% when failed subject is excluded from average.

Aegrotat standing may be granted only in the final year.

Privilege of deferred examination may be granted by the Program Director for illness or other reasons.

FAILED YEAR

Failure to obtain "C" standing average

Failure to obtain "C" standing in each principal course.

Unsatisfactory clinical performance.

Failure in more than one subject.

COURSES

SECOND YEAR

20a. Anatomy. Offered by the Department of Anatomy; an introductory course in systemic anatomy designed primarily for students in the Allied Health Professions. The Embryology, Gross and Microscopic Anatomy of the major organ systems of the body will be studied.
2 hours per week; lecture-demonstration, half course, first term.

201. Anatomy. Offered by the Department of Anatomy: Anatomy for Physical Therapy students. A series of lectures in regional anatomy, supplemented by dissection, demonstration of prosected material and audio-visual aids.
Prerequisite, Co-requisite: 20a Anatomy
8 hours per week; lecture - dissection laboratory, full course.

278b. Neuroanatomy. Offered by the Department of Anatomy: A descriptive course of the gross anatomy of the central nervous system with demonstration of prepared specimens.
2 hours per week; lecture-demonstration, seminar, half course, second term.

189b. Pathology. Offered by the Department of Pathology; an introduction to disease processes, with emphasis on inflammation.
1 1/2 hours per week; lecture-slide demonstration, half course, first term.

201. Physiology. Offered by the Department of Physiology; an introductory course covering the principles of physiology; general properties and functions of the living cell and tissue, peripheral nerve and muscle, blood, metabolism and nutrition, digestion, circulation, respiration, kidney and body fluids, the endocrine glands and reproduction.
5 hours per week; lecture-laboratory, full course.

210. Physical Therapy: Introductory Therapeutic Exercise. A study of the control and development of normal and abnormal movement, and of the rationale and application of therapeutic exercise.
5 hours per week; lecture-laboratory, full course.

220. Physical Therapy: Assessment of Movement. An introduction to the structural and functional units concerned with movement; methods of evaluating and recording normal muscle action and joint movement, in preparation for assessment of disability.
4 hours per week; lecture-laboratory, half course.

230. Physical Therapy: Patient Management. A course designed to give the student the opportunity to gain skill in the application of basic rehabilitation and nursing procedures, and massage.
4 hours per week; lecture-laboratory, half course.

340a. Occupational Therapy: Disaster Planning: Offered by the Program in Occupational Therapy. A practical course in training the student to cope in an emergency situation.
3 hours per week; lecture-laboratory, half course, first term.

Elective

THIRD YEAR

300. Physical Therapy: Electrotherapy. A study of the production, effects and uses of electrical energy. Demonstration and practice in the application of various forms of electrical energy, heat and cold.
5 hours per week; lecture-laboratory, full course.

310. Physical Therapy: Advanced Therapeutic Exercise. Analysis and application of advanced techniques of therapeutic exercise.
2 hours per week; laboratory, half course.

320. Physical Therapy: Physical Therapy in Orthopaedics. A study of orthopaedic conditions, with emphasis on assessment and treatment approaches.
5 hours per week; lecture-laboratory, full course.

330. Physical Therapy: Physical Therapy in Neurology. A study of neurological conditions, with emphasis on assessment and treatment approaches.
4 hours per week; lecture-laboratory, full course.

340. Physical Therapy: Physical Therapy in Cardiovascular and Pulmonary Affections. A study of cardiovascular, pulmonary and other conditions, and treatment approaches.
2 hours per week; lecture-laboratory, seminar, half course.

390. Medicine and Surgery: Offered by the Faculty of Medicine. Core courses and special lectures on the medical and surgical aspects of conditions referred to physical therapy.
3 to 5 hours per week; lecture, full course.
Prerequisite: Pathology 189.

410a. Physical Therapy: Rehabilitation. A seminar approach to a study of roles of personnel in the health field, and problems relating to community health and rehabilitation.
2 hours per week; seminar, half course, first term.

420b. Physical Therapy: Administration. Introduction to departmental administration and planning, and the responsibilities of the graduate physical therapist.
2 hours per week; lecture-seminar, half course, second term.

440. Physical Therapy: Advanced Clinical Studies. Advanced techniques including those used in Manual Therapy, with discussion of problems relating to clinical physical therapy.
4 hours per week; lecture-laboratory, full course.

490. Physical Therapy: Paper. A study or project in an area related to physical therapy.
2 hours per week; tutorial, half course.

442a. Physiology: Physiology of Exercise: Offered by the Department of Physiology. A course primarily designed for Physical and Health Education students, covering various aspects of the physiological effects of exercise, with the emphasis on application to activity and on research.
Prerequisite: Physiology 201.
4 hours per week; lecture-laboratory, half course, first term.

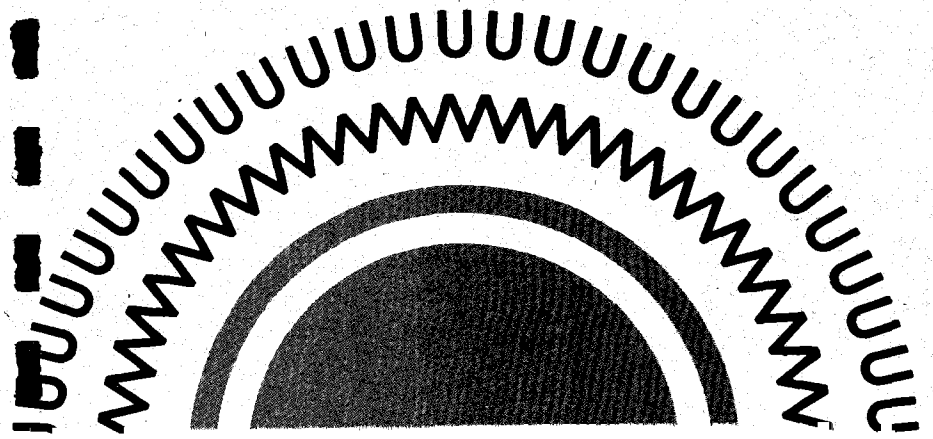
443b. Physiology: Neurophysiology: Offered by the Department of Physiology. Advanced studies with emphasis on the neurophysiological basis of movement.
Prerequisite: Physiology 201.
2 hours per week; lecture, half course, second term.

Anatomy: (Elective) Advanced Anatomy for Physical Therapy: Offered by the Department of Anatomy. A seminar course covering various aspects of anatomy applied to physical therapy.
Prerequisite: Anatomy 20a and 201
2 hours per week; lecture-seminar, full course.

NOTE: a) Program and course content are subject to change.

b) Clinical Physical Therapy and Practicum total 1200 hours

Faculty of Nursing



Officers of Administration	Location	Phone
Dean		
R. Catherine Aikin, RegN; BA, BN McGill; MA Chicago	107	3876
Assistant Dean (Academic)		
Amy E. Griffin, RegN; BA Toronto; MSc Wayne State; EdD Columbia	110	3874
Assistant Dean (Administration)		
Dorothy M. Hibbert, RegN; BSc, MA, Professional Diploma Columbia	106A	3878
Health Sciences Librarian		
M. Anne Seheult, BA; BLS	193HC	3912
Administrative Assistant		
G. W. Graham	100B	3885
Coordinator Graduate Programs		
Amy E. Griffin, RegN; BA Toronto; MSc Wayne State; EdD Columbia	110	3874

Faculty of Nursing

Coordinator Basic Nursing Degree Program		
Jean Forrest, RegN; BN McGill; BA Laurentian; MS Boston	209	3869
Coordinator Post Basic Nursing Degree Program		
Caroline Dauk, RegN; BN McGill; MA Columbia	109	3875

PROFESSORS: Griffin, Hibbert ASSOCIATE PROFESSORS: Brown, Forrest, Horn, Mantle, Stewart, Wood ASSISTANT PROFESSORS: Brown, Creeggan, Dauk, Fraleigh, Gerhard, Given, Gow, Patterson, Potter, Roberts, Shea, Wynne LECTURERS: Anonsen, Fuller, Hykawy, Jasinski, Laman, Lenhardt, Skafel INSTRUCTORS: Kelly, MacMaster, Melchior, Titherington, Wilson

HISTORY OF THE FACULTY OF NURSING

The year 1973 marks the fifty-third year since the establishment of the first educational program in nursing at The University of Western Ontario.

It is important to view our present Faculty against those years of effort and interest, but equally important to go back to an earlier date, the year 1917, in order to bring a significant event into perspective. That year, with considerable awareness of need and concern to carry its special educational role in the control of disease and the promotion of health, the University's Board of Governors brought into being the Faculty of Public Health - the first independent Faculty of Public Health to be established in a university within the British Commonwealth. The objective of this educational program was to prepare graduate physicians for their responsibilities as medical officers of health. The new Faculty was housed in the building of the Institute of Public Health at the corner of South and Waterloo Streets, just across from the old Medical School, and the Director of the Institute, the late Dr. H. W. Hill, was appointed Dean of the new Faculty.

In 1920, the Canadian Red Cross Society granted to five Canadian universities sufficient funds to support, for a three-year period, educational programs in Public Health Nursing. Having been selected, and receiving its grant through the Ontario Division of the Canadian Red Cross Society, the University of Western Ontario established a Division of Studies for Graduate Nurses within the Faculty of Public Health under Dean Hill. The late Miss Margaret McDermid was appointed to give professional leadership to the new program.

Dean Hill was succeeded by the late Dean A. J. Slack. Thus, under the capable leadership of two successive Deans, both of whom were outstanding public health men, the University's varied public health enterprises within the Institute continued to expand. This became increasingly true of the laboratory services provided for London and the counties of Southwestern Ontario. Expanding laboratory services during this period might be taken as an index of the growth of health services throughout the region, and an index of the rapidly growing, though still very young, public health movement.

In 1924, the Board of Governors and Senate approved the establishment of a five-year under-graduate program, leading to the degree of Bachelor of Science in Nursing. The following year, two further post-basic programs were established:

1. A program designed to prepare teachers for hospital schools of nursing, leading to a Certificate of Instructor of Nursing.
2. A program designed to prepare hospital administrators, leading to a Certificate in Hospital Administration.

In 1946, nearing the completion of three decades of public health activity within the Institute of Public Health, the Board of Governors of the University reviewed its many enterprises to see what reorganization might be undertaken. As preventive medicine had become an integral aspect of medical education, it was decided that the Faculty of Public Health should close with the end of the 1946-1947 academic year. This year coincided with the retirement of Dean Slack. A further decision was made to withdraw from the laboratory services so that these, as a regional laboratory, would become the responsibility of the Ontario Department of Health.

The future of educational programs in nursing was assured with a further decision of the Board of Governors to establish a School of Nursing, as an autonomous unit within the constituent University. The late Miss Edith M. McDowell was appointed Dean of this new Faculty in the summer of 1947. The W. K. Kellogg Foundation of

Battle Creek, Michigan, made a grant of $50,000 to be spent over a three-year period (1947-1950) in improving and strengthening the educational programs of the School. Under Dean McDowell's inspiring leadership, the School developed rapidly in both quality of programs offered and in enrolment.

The new School of Nursing remained in the Institute Building until January 1951, when it moved to the lower hall of University College. As enrolment in the School of Nursing continued a marked upward trend, it was not long before the space in University College became inadequate. During the summer months of 1958, the School of Nursing moved to more spacious quarters in the upper floor of the Physics-Chemistry Building, but before a year had passed, these quarters became overcrowded.

The 1957-1958 academic year saw the establishment of a third post-basic program leading to a Diploma in Nursing Service Administration. Eleven students were enrolled. (The Certificate program in Hospital Administration had not been offered since the 1946-47 academic session). Hospital administrators, governing boards and members of the medical and nursing professions had become acutely aware of the need for better preparation for those who are given responsibility for the administration of nursing services in our hospitals. The new program was an outgrowth of that expressed concern.

In the early summer of 1959, having approved a brief presented by the School of Nursing, the W. K. Kellogg Foundation of Battle Creek, Michigan, presented the University with the first of a series of cheques which reached a total of $142,000 over a six-year period. This was spent in the development of projects in administration.

This very generous grant made possible the establishment of a two-year graduate program in administration leading to a Master of Science in Nursing degree. The first candidate was presented at the 1961 Spring Convocation and her degree, Master of Science in Nursing, was conferred. This was the first time in the history of nursing in Canada that a Master's degree had been granted by a Canadian University.

Another significant event occurred during the 1960-61 academic session. During the Christmas recess the School of Nursing moved to its own building. This attractive new building was made possible largely through a very generous grant from the Kresge Foundation. The 1960's saw the development of the Health Sciences concept at The University of Western Ontario, with nursing as an integral part. Expansion of the physical facilities of the Health Sciences complex is now being planned. In this expansion nursing will have new accommodation. Additional space and facilities are needed for an increasing student enrolment and the corresponding increase in numbers of faculty. Seminar rooms and self-instruction units will enable the faculty to put into effect the more recent beliefs about the teaching-learning process.

Major changes in the programs offered by the School of Nursing occurred during 1966 and 1967. All diploma programs were discontinued. A four-year basic program leading to the degree of Bachelor of Science in Nursing was inaugurated in September 1966, and replaced the five-year undergraduate program established in 1924. The Program for Registered Nurses was altered and expanded to correspond with the current requirements for a Bachelor of Science in Nursing awarded by this University. The Master of Science in Nursing program now offers a major in teaching as well as in administration.

In May, 1969, on the recommendation of the Senate, the Board of Governors changed the designation of "School of Nursing" to "Faculty of Nursing".

CONTINUING EDUCATION

The Continuing Education activities of the Faculty of Nursing have been increasing in number and scope during the past four years.

The Faculty emphasizes non-credit courses and our offerings have included courses for senior executives, teachers, community nurses, head nurses and general duty nurses. Nursing education, administration and community nursing are the major classification of courses offered.

LIBRARY SERVICES

The Nursing Library is a fully integrated part of the Health Sciences Library serving Nursing, Dentistry, Medicine and associated basic Sciences.

Although located separately on the main floor of the Health Sciences Centre, the Health Sciences Library is part of the main University Library. An additional study room is located adjacent to the library.

The collection of the Health Sciences Library contains about 95,000 books. Approximately 1600 journals are currently received. The library also has a collection of several thousand volumes dealing with the history of the medical sciences.

PROGRAMS OF THE FACULTY OF NURSING

The Faculty of Nursing offers two programs leading to the degree Bachelor of Science in Nursing. The Basic Nursing Program extending over four years is designed for high school graduates. The Program for Registered Nurses is planned for graduates from diploma schools of nursing and extends over a period of three academic years. In both programs the nursing component gives focus to critical survey of the major concepts, assumptions and skills upon which professional nursing is based. The Faculty of Nursing reserves the right to limit the number of applicants admitted to either Bachelor of Science in Nursing program.

Two graduate programs in nursing are offered. One program leads to the degree Master of Science in Nursing (Administration), and the other leads to the degree Master of Science in Nursing (Education). Individual planning makes provision for study in the particular area of administration or teaching for which the candidate is preparing. Admission requirements are: a Bachelor's degree in Nursing or, a Bachelor's degree in Arts or Science in addition to graduation from an approved school of nursing and an academic year of post-basic study with a diploma in one of the nursing specialties at a university school of nursing. An overall B standing in undergraduate university courses is the minimum admission standard.

Further information concerning the Master of Science in Nursing programs may be obtained by writing to the Faculty of Nursing for the Announcement of the Faculty of Graduate Studies.

NURSING

THE BACHELOR OF SCIENCE IN NURSING PROGRAMS

The purpose of the programs is to prepare professional nurse practitioners who:

1. are capable of assuming beginning professional responsibilities in hospitals and other health agencies;
2. are capable of using further experience to proceed to the assumption of greater responsibility in the practice of nursing;
3. have a sound education foundation for proceeding to graduate studies preparing clinical specialists, teachers, administrators, consultants and researchers.

The major objectives of the programs are to assist the student to develop to the optimum:

1. as an individual participating in the process of higher education for a profession
   (a) inherent abilities
   (b) an understanding of self and others
   (c) an examined value system giving meaning and direction to life:
2. as a future professional nurse
   (a) the ability to apply basic nursing theories, concepts and principles in the practice of nursing
   (b) a scientific approach to the practice of nursing and basic skill in its implementation
   (c) an understanding of and commitment to the role of the nurse and the nursing profession in a dynamic society;
3. as an educated citizen
   (a) appreciation of the privileges of citizenship
   (b) acceptance of the responsibilities pertaining thereto.

THE BASIC NURSING PROGRAM

This is a four-year program leading to the degree of Bachelor of Science in Nursing (BSc N) and qualifies graduates to apply for registration with the College of Nurses of Ontario. The curriculum includes both general education in the arts and sciences and professional nursing education throughout the four years. The University provides and directs clinical nursing experiences essential for learning. These are currently arranged in teaching hospitals and health agencies in the community. The enrolment in this program is limited. Possession of published minimum requirements does not, therefore, guarantee admission.

ACADEMIC ADMISSION REQUIREMENTS

Applicants for first-year studies for 1973-74 admission be strongly advised to take SACU tests.

Applicants who do not take the SACU tests will be considered on the basis of their secondary school records.

Applicants with poor secondary school records and those applying for admission scholarships or for limited enrolment programs be strongly advised to take the SACU tests.

Counsellors of applicants for admission, both at the secondary school and this University be requested to emphasize to such students that they should take the SACU tests.

A. For Applicants With Ontario Grade 13 Standing

Completion of secondary school studies, including a full year of successful study to include at least six (6) credits. Nursing requires Grade 13 Chemistry and Biology with minimum science average of 60%. Grade 12 Mathematics will be required starting in 1974.

B. For Applicants With High School Standing From Other Canadian Provinces

All applicants with standing from high school in jurisdictions outside of Ontario should write the tests offered by the College Entrance Examination Board (CEEB) or the tests of the Service for Admission to College and University (SACU).

C. For Applicants With High School Standing From Other Countries

All applicants from other countries interested in the Basic Nursing Program are requested to write to the Dean, Faculty of Nursing, The University of Western Ontario, London, Ontario, N6A 3K7.

OTHER

Prior to enrolling in the Faculty of Nursing, all students should submit proof of immunization against diphtheria, tetanus, poliomyelitis and smallpox. This immunity should be at a maximum level of protection through the administration of a booster or reinforcing dose where indicated.

SUBMISSION OF APPLICATIONS FOR ADMISSION

Applications for admission to the Basic Nursing Program are to be submitted to the Registrar, The University of Western Ontario, by July 1. Because of the large number of applicants, it is recommended that application be made early.

LENGTH OF ACADEMIC YEARS

Each of the four years consists of two terms of the same length as those of the Faculties of Arts, Science and Social Science.

Year 1 is followed by an additional term of three weeks.

Year 2 is preceded by one week and followed by an additional three weeks.

Year 3 is preceded by one week and followed by an additional five weeks.

Year 4 is preceded by one week.

These additional periods provide an opportunity for concentrated emphasis on nursing.

REQUIRED COURSES

Approximately one half of the total program is planned for nursing courses; the other half is planned to include general education and health-related courses. The electives provide opportunity for progressive study in the sciences or humanities from which the student selects an area of concentration consisting of three

courses. These electives are selected at the 20 or above level. Students are expected to complete all courses in one year before proceeding to the next year.

Year 1

Anatomy	20a
Anatomy	20b
Chemistry	25
Nursing	20
Psychology	20
Sociology	20

Year 2

Biochemistry	206b
Chemistry	33a
Nursing	230
Physiology	201
One elective from Sociology, Psychology or Anthropology	
Two additional electives	

Year 3

Medical Science	206
Microbiology	206
Nursing	330
Nursing	340
Pharmacology	206
Research and Statistics	28

Year 4

Community Medicine	206
Nursing	450
Nursing	460
Nursing	470b
Psychiatry	206
Two electives	

The above is the normal course load. Additional courses may be studied only with the permission of the Dean.

REQUIREMENTS FOR REGISTRATION TO PRACTICE NURSING*

The Council of the College of Nurses of Ontario shall register as a nurse any person who:

(a) has successfully completed the course of instruction at a school of nursing in Ontario

(b) has passed the examinations for nurses

(c) pays the registration fee.

*Nurses Act, 1961-62, p. 3.

THE PROGRAM FOR REGISTERED NURSES

This is a three-year program leading to the degree of Bachelor of Science in Nursing (BSc N) for registered nurses graduated from a diploma school of nursing. The nursing courses are designed to utilize the nursing knowledge that the student brings to university. Initially, the student considers the organization, development and delivery of health services which allows her to view nursing within a broad conceptual framework. Then, the more specific aspects of the professional nurse's role are examined in the light of a rapidly changing social and health milieu. In the final year, the student examines critically the purpose of nursing and applies the professional and general knowledge that bears on her practice. The electives provide opportunity for progressive study in the sciences, social sciences and humanities.

ACADEMIC ADMISSION REQUIREMENTS

A. For Applicants With Ontario Grade 13 Standing

Registered nurse applicants who meet admission requirements of this University must have obtained Ontario Grade 13 Chemistry with a 60% standing for admission to the nursing program.

B. For Applicants With High School Standing From Other Canadian Provinces

Students from other provinces in Canada are eligible to apply for admission to this Faculty if their academic records meet in subject matter and standing obtained both the requirements for admission to this Faculty and to a recognized university in their own province in a program similar to the one to which admission is being sought at this University.

C. For Applicants With High School Standing From Other Countries

All applicants from other countries interested in the Program for Registered Nurses are requested to write to the Dean, Faculty of Nursing, The University of Western Ontario, London, Ontario, N6A 3K7.

D. For Mature Applicants

An applicant who is at least 23 years of age during the calendar year of her application and who does not hold the required Grade 13 or equivalent standing normally necessary for admission may be considered for admission as a Mature Applicant if she has obtained the equivalent of Ontario Grade 13 Chemistry with a 60% standing.

OTHER ADMISSION REQUIREMENTS

All applicants to the Program for Registered Nurses must also meet the following qualifications:

1. Graduation from an approved diploma school of nursing.
2. Registration as a nurse in good standing with the College of Nurses of Ontario.
3. Professional competence.

OTHER

1. Students are encouraged to be members of the Registered Nurses' Association of Ontario and to take out malpractice insurance.
2. Prior to enrolling in the Faculty of Nursing, all students should submit proof of immunization against diphtheria, tetanus, poliomyelitis and smallpox. This

immunity should be at a maximum level of protection through the administration of a booster or reinforcing dose where indicated. An Immunization Record form will accompany Forms of Application.

SUBMISSION OF APPLICATIONS FOR ADMISSION

Applications for admission to the Program for Registered Nurses are to be submitted to the Dean, Faculty of Nursing, The University of Western Ontario, London, Ontario, N6A 3K7, by July 1.

LENGTH OF ACADEMIC YEARS

Each of the three years consists of two terms of the same length as those of the Faculties of Arts, Science and Social Science. A third term of a maximum of three weeks may be required at the end of Year 2. A third term of a maximum of three weeks may precede or follow Year 3.

REQUIRED COURSES

Year 2

Chemistry	25
Nursing	221
Research and Statistics	28
One elective from Psychology, Sociology or Anthropology	
Two additional electives	

Year 3

Biochemistry	206b
Chemistry	33a
*Nursing	361 (Proposed)
Nursing	371
Physiology	201
One elective from Psychology, Sociology or Anthropology	
One additional elective	

Year 4

Microbiology	206
Nursing	471
Pharmacology	206
One elective from Psychology, Sociology or Anthropology	
Two additional electives	

(a) Students are required to select an area of concentration consisting of three courses from one of Psychology, Sociology or Anthropology.

(b) Among the electives, students are required to select a minimum of five courses from the Faculties of Arts and Social Science. These electives are selected at the 20 or above level.

(c) Students are expected to complete all courses in one year before proceeding to the next year.

(d) Additional courses in any year of the program may be studied only with the permission of the Dean.

GENERAL INFORMATION

EQUIVALENT CERTIFICATES

Provided that the subjects are acceptable for admission, the following certificates and/or academic standings are accepted as equivalent to Ontario Grade 13 standing:

BRITISH COLUMBIA: First year at U.B.C., Simon Fraser University, University of Victoria, Notre Dame; OR Grade 13 (prior to 1972).

ALBERTA, SASKATCHEWAN, MANITOBA: Grade 12.

QUEBEC: Grade 12 (fifth year high school) or its equivalent.*

PRINCE EDWARD ISLAND: First year at the University of Prince Edward Island.

NEW BRUNSWICK: Senior matriculation OR first year of a four-year General Program at New Brunswick universities.

NOVA SCOTIA: Grade 12 OR first year at Nova Scotia universities.

NEWFOUNDLAND: First year at Memorial University of Newfoundland.

It is strongly advised that the tests of the College Entrance Board (CEEB) or the tests of SACU be written.

***NOTE**: Applicants from Quebec

Applicants from the Province of Quebec who hold Provincial certificates attesting to the completion of Grade 12 are considered for admission. Applicants enrolled in the Collegial Programs at Bishop's, McGill or Sir George Williams Universities or at a C.E.G.E.P. will be considered for placement upon presentation of a transcript showing work completed.

PROFICIENCY IN ENGLISH

Lectures, seminars and examinations in this University are for the most part conducted in English and it is essential that all students have an adequate knowledge of written and of spoken English. An applicant for admission for whom English is a second language must submit, with her application, evidence acceptable to this University of her proficiency in English. The results of two tests are accepted as providing such competence: The Test of English as a Foreign Language OR The English Language Proficiency Test (University of Michigan).

The Admissions Committee reserves the right to deny admission to applicants who do not demonstrate satisfactory knowledge of English, by means of one of the tests mentioned above, regardless of academic qualifications.

COURSE DESCRIPTIONS

20a. Anatomy - Introduction to Anatomy. Systemic anatomy designed primarily for students in the Allied Health Professions. The Embryology, Gross and Microscopic Anatomy of the major organ systems of the body will be studied. This course is taught by the Department of Anatomy.
2 hours/week, Half Course - Term 1.

20b. Anatomy - Anatomy for Nurses. Major concepts of functional and topographic anatomy are stressed. Special emphasis is given to the "living" state rather than to cadaveric anatomy. This course is taught by the Department of Anatomy.
(Co-requisite Anatomy 20a).
3 hours/week, Half Course - Term 2.

Biochemistry 206b. An introductory course of lectures in general biochemistry is presented to students enrolled in the Nursing baccalaureate programs. This course is taught by the Department of Biochemistry.
Prerequisites: Chemistry 25 and 33a.
25 hours, Half Course-Term 2.

Chemistry 25. General Chemistry. For students in Home Economics and Nursing programs only. This course is taught by the Department of Chemistry.
Prerequisite: Grade 13 Chemistry.
2 lectures, 3 lab hours.

Chemistry 33a. Organic Chemistry. For students in Home Economics and Nursing programs only. This course is taught by the Department of Chemistry.
Prerequisite: Chemistry 25.
3 lab hours - Term 1, 2 lectures, Half Course - Term 1.

Community Medicine 206. A course given mainly by seminar discussions of assigned reading on the comprehensive approach to the prevention, detection and control of health problems. Taught by the Faculty of Medicine.
52 hours.

Microbiology 206. Lectures, practical classes and demonstrations to illustrate the scope and principles of Microbiology and Immunology, and the application to nursing and to public health. The course involves a survey of microbial life, sterilization, disinfection, and antibiosis; the host-parasite relationship; immunity mechanisms and hypersensitivity; serological diagnosis; specific bacterial, viral and fungal infective processes and their prevention; sanitary and food microbiology, protozoon and animal parasites; the practice of immunization; the services and responsibilities of hospital, regional, provincial and government laboratories. This course is taught by the Department of Bacteriology.
Prerequisite: Biochemistry 206b.
80 hours.

20. Nursing. Introduces all aspects of the nursing process. Theories of need and development, and theories of communication are considered. Nursing intervention is planned and carried out with one or more patients on several occasions. Study is made of nursing as a profession and of the role of nursing in health care.
6 hours class and lab, Terms 1 and 2.
3 weeks lab - Term 3

221. Nursing. (a) Three major themes, namely, the phenomena of health and illness, organizational patterns for delivery of health care, evolving health roles and relationships, are threaded throughout the course. Each will be considered from the perspective of the people who are served, the people who serve, and the systems providing service.
2 hours, Term 1; 4 hours, Term 2.
(b) This seminar course deals with current health services issues. Special emphasis is given to implications for nursing.
2 hours, Term 1.

230. Nursing. Nursing care of the family during the childbearing years focusing on normal growth and development. Experience is provided to develop increasing skill in the promotion and maintenance of maternal, child and family health. Theory is supplemented by selected experiences with families and community agencies.
Prerequisite: Nursing 20.
1 week class preceding Term 1.
4 hours class. (Lab varies weekly - averages 4 hours/week.).
3 weeks lab - Term 3

330. Nursing. Nursing of the child within the framework of the family dynamics with particular emphasis on the illness crisis in the family when the young members of the family are

ill. Experience is provided in the nursing of selected children and families in hospital and community.
Prerequisite: Nursing 230.
2 hours class. (Lab varies weekly - averages 4 hours/week.).
1 week class preceding Term 1

340. Nursing. Nursing care of the ill adult with emphasis on utilization of the nursing process in identifying and meeting patient needs. Theory is supplemented with selected clinical experiences. Experiences in Term 3 are provided for the student to develop skill in management of patient care with emphasis on the leadership role.
Prerequisite: Nursing 230.
1 week class preceding Term 1.
2 hours class, 12 hours lab, Terms 1 and 2.
20 hours class, 160 hours lab - Term 3

361. *Nursing. The purpose of this course is to prepare the student for community health nursing practice at a beginning level. The focus is on nursing the family within the community. Specific content areas such as family development, crisis intervention, multiproblem families are considered. A concurrent practicum is planned.
Prerequisite: Nursing 221.
2 hours class, 1 hour tutorial, 1 hour practicum, Terms 1 and 2.
(Proposed for 1973-74).

371. Nursing. (a) Concepts of nursing roles and functions are explored. Specific areas of emphasis are nurse-patient interactive process, teaching-learning, and leadership skills in meeting the needs of patients in contemporary society.
Prerequisite: Nursing 221.
4 hours, Terms 1 and 2.

(b) The purpose of this course is to prepare the student for community health nursing practice at a beginning level. The focus is on nursing the family within the community. Specific content areas such as family development, crisis intervention, multiproblem families are considered. A concurrent practicum is planned.
Prerequisite: Nursing 221.
2 hours class, 1 hour tutorial, 1 hour practicum, Terms 1 and 2.

450. Nursing. Nursing of the individual and his family with emotional health problems and nursing assessment of the family dynamics. Promotion of therapeutic nursing with emphasis upon the collaborative relationships with the health team. Nursing practice is developed in the nursing of selected individuals and families in hospital and community.
Prerequisites: Nursing 330 and 340.
1 week class preceding Term 1.
2 hours class, 7 hours lab, Terms 1 and 2.

460. Nursing. Nursing practice in complex situations in the community setting. Nursing intervention encompasses collaboration with the health team and facilitates appropriate use of health services within the community structure in the changing delivery of health care. The nurse's role with the family is developed with selected individuals and families.
Prerequisites: Nursing 330 and 340.
1 week class preceding Term 1.
1 hour class, 4 hours lab, Terms 1 and 2.

470b. Nursing. Developments in the delivery of health services with special emphasis on nursing and the role of the beginning professional nurse practitioner.
2 hours class, Term 2.

471. Nursing. (a) Through a concentrated clinical practicum this course allows the student to examine critically his/her practice of nursing in the light of increased professional and general knowledge gained in the program. Specific nursing authors' views about nursing are considered in a seminar series.
Prerequisite: Nursing 371.
6-8 hours, Term 1.

(b) A choice of nursing electives are offered.
Prerequisite: Nursing 371.
6-8 hours, Term 2.

Medical Science 206. An introductory course including the study of general pathophysiological processes and the bio-psychosocial basis of signs, symptoms, medical diagnosis and therapy for selected disease conditions.
Prerequisites: Anatomy 20a, Anatomy 20b, Physiology 201, Biochemistry 206b.
52 hours class.

Pharmacology 206. Survey of Pharmacology and Drug Therapy - A course of lectures, demonstrations and tutorials dealing with the properties of drugs, their mechanisms of action, therapeutic uses, limitations and toxicity. This course is taught by the Department of Pharmacology.
Prerequisites: Biochemistry 206b, Physiology 201.
52 hours.

Physiology 201. Lectures, demonstrations and practical classes to illustrate the principles of human physiology and their application to nursing. The course involves the physiology of the cell; the internal environment, excitable tissue and muscle; the blood and immunity; the cardiovascular, respiratory and gastrointestinal systems; energy metabolism and nutrition; body water and the kidney; reproduction; the endocrine and nervous systems; controls, regulations and homeostatis. This course is taught by the Department of Physiology.
Prerequisite: Grade 13 Biology, Basic Program only.
52 hours.

Psychiatry 206. A lecture course with demonstration clinics covering the clinical syndromes of psychiatry. Emphasis is on the syndromes encountered in the practice of medicine. Taught by the Department of Medicine.
48 hours.

28. Research and Statistics. Introduction of research methodology, evaluation, utilization; the contribution of research to the theory and practice of nursing; basic statistical concepts related to sampling, measures of central tendency, variability, probability, correlation and significance.
1 hour class, 1 hour lab, Terms 1 and 2.

ACADEMIC POLICY

A basic premise of the academic policy of this University is the achievement of a satisfactory level of performance in the academic work undertaken. Eligibility for continued registration in the nursing program must be conditional on attaining some clearly specified minimum level of achievement. Failure to achieve the minimum level of performance should require withdrawal from the nursing program. Students who fail to achieve satisfactory clinical performance should not be considered for readmission; however, the Faculty of Nursing would give consideration to a student who, with supporting documents, believes health problems affected her performance.

Nursing Courses

If a student has a second failure in nursing courses she may only proceed with special permission of the Dean, Faculty of Nursing.

Final Grade

The final grade for most nursing courses is based upon individual assignments, group projects, satisfactory clinical performance and written examinations.

MID-TERM EXAMINATIONS OR ASSIGNMENTS

Mid-term examinations or assignments are given in some courses. Such examinations and papers provide opportunity to periodically evaluate the student's progress. Subsequent conferences with members of the Faculty afford an opportunity to discuss problems encountered. Clinical evaluation is done concurrently throughout the year.

REQUIREMENTS TO SIT FOR EXAMINATION

The right to sit for examinations is conditional upon regular attendance at classes, completion of required assignments on due date and satisfactory clinical performance.

A student may be refused permission to write the final examination for failure to maintain satisfactory standing throughout the year.

Final examination papers will not be returned to students.

LATE ASSIGNMENT

Late assignments will be evaluated at one grade below the achieved grade of the paper. No late assignments will be accepted for grading after two weeks of the due date without special permission of the Dean.

SATISFACTORY CLINICAL PERFORMANCE

In a professional program as nursing, certain commitments are required. Satisfactory performance in the clinical area is of prime importance. All appointments made with assigned patients, families, hospital clinical areas and faculty must be kept. It is the responsibility of the student to advise appropriate personnel of an inability to keep these appointments. Appointments also include attendance at class, seminar, clinical practice area, tutorial or supervisory conference. A student who, because of illness or other valid reasons, must be absent from a nursing laboratory or clinical experience should notify the instructor prior to experience. The Faculty of Nursing is responsible for safety of nursing practice and therefore reserves the right to ask the student to seek medical assessment of physical and emotional health problems when a student demonstrates unsatisfactory clinical practice. The student's continuance in the program may be influenced by the medical assessment.

NURSING

Clinical experience may be arranged at the following hospitals and agencies for the Basic Nursing students:

Children's Psychiatric Research Institute
London Psychiatric Hospital
Middlesex-London District Health Unit
Nursery Schools
Parkwood Hospital
Physicians' Offices
St. Joseph's Hospital
St. Mary's Hospital
University Hospital
Victoria Hospital
Victorian Order of Nurses
Westminster Hospital
and such other agencies as are required or indicated.

SUPPLEMENTAL EXAMINATIONS

Supplemental examinations are not given in nursing courses. Supplemental examinations may be allowed in courses taught by the Faculty of Medicine. When supplemental examinations are allowed, a student writing a supplemental examination will receive either a Pass or Fail grade for the course. A Pass will give the student credit for the course but will not change her average for the year.

SPECIAL EXAMINATION

A special examination is any examination other than the regular examination and it may be offered only with consent of the Dean of the Faculty of Nursing.

A special examination may be written only at this University.

DEFERRED EXAMINATION

Permission to defer an examination is given by the Dean of the Faculty of Nursing only on compassionate grounds. No examination fee is charged for deferred examinations.

A deferred examination may be written only at this University.

GRADING SYSTEM

The following grading system is used:

90% - 100%	A†
80% - 89%	A
70% - 79%	B
60% - 69%	C - passing grade in nursing courses
50% - 59%	D - passing grade in non-nursing courses
40% - 49%	E - supplemental privileges in a few courses only
0% - 39%	F - failure

PERFORMANCE FOR PROGRESSION

A. BASIC NURSING STUDENTS

Students may proceed to the next year of their program if the following conditions are met:

1. **Satisfactory clinical performance.** A student must pass clinical performance before she can pass a nursing course.
2. An overall average of 70% in Year 1 of the Basic Program.
3. An overall average of 60% in each successive year.
4. A grade of 60% and above in each nursing course.
5. A grade of 50% and above in all non-nursing courses.
6. Students with an overall average of 60-69% will be accepted for promotion from Year 1 to Year 2 by special permission of the Dean.

B. REGISTERED NURSE STUDENTS

Students may proceed to the next year of their program if the following conditions are met:

1. A grade of 60% and above in each nursing course.

When clinical experience is an integral part of the nursing course, a student must pass in clinical performance before she can pass a nursing course.

2. A grade of 50% and above in all non-nursing courses.
3. An overall average of 60%.

A student with an average of less than 70% will be required to seek counselling in relation to program planning.

If all of the above conditions are met with the exception of one failure, a student may be granted permission to proceed to the next year of the program totally or in part. She must, regardless of the timetable, satisfactorily complete that course during the next academic year or an adjacent summer session. Only one failed course may be carried in any one year.

Students in good standing who withdraw from a program can only be readmitted subject to the regulations in force at the time they apply to re-enter.

UNSATISFACTORY PERFORMANCE AND WITHDRAWAL

Failure to achieve satisfactory performance shall require withdrawal from the program except as follows:

1. The Dean of the Faculty of Nursing may waive the regulation, on academic or compassionate grounds, in which case it shall be her responsibility to specify the requirements for regaining satisfactory standing on the regular "progression ladder" and to notify the Registrar in writing of this decision. Permission is given only under exceptional circumstances and then only when a vacancy is available in that year. When a student is allowed to repeat a year, she must pass that year without conditions to be allowed to continue in the program.
2. Should an appeal be made to the Senate on the ruling of the Dean based on academic or compassionate grounds, such an appeal shall be considered on behalf of Senate by Senate Review Board (Academic) or by such other body which may be established by the Senate.

NURSING

FEES

Fees are due and payable in full on registration day but if necessary the fees may be divided into two instalments, the first payable on registration day and the second on the first day of the second term. The extra charge for this division is $5.00.

Students may not attend lectures or examinations, nor may they be recommended for any degree until their tuition fees, fines and other accounts owed to the University are paid, except by permission of the Dean, Faculty of Nursing and Comptroller.

The Board of Governors reserves the right to amend fees after the printing of this Announcement.

Students whose fees are to be paid wholly or in part by other organizations, by scholarships, bursaries or loans, must present written evidence of such assistance at time of registration. Provided such evidence is satisfactory, credit will be allowed the student for that portion of fees to be so covered. The student will therefore be required to pay only the remaining balance, if any.

The following amounts include for full-time students, Student Activity and Health Service fees, totalling $54.00;

Fees Schedule

Full-time students	$617.50
Part-time Intramural Students	
Per course	$130.00
Laboratory fee (extra)	$10.00
Late Registration Fee	$10.00 or $25.00
Examination Fee	
Special Examination, each paper	$15.00

Student Expenses

A statement of annual expenses can at best be approximate. In the summary below, personal items such as laundry, clothes, recreation and transportation are not included.

Tuition and incidental fees	$617.50
Board and room (Terms 1 and 2)	$800.00 to $1000.00
Books and supplies	$120.00 to $150.00

Additional expenses to be considered differ for each year of the program, e.g.: Approximately $25.00 to $32.00 is required for room and board for each week the course of studies precedes or extends beyond Term 1 and Term 2. Approximately $100.00 is required by students registered in the first year of the Basic Nursing Program for purchase of the Faculty of Nursing uniform. (Instructions for obtaining the Faculty of Nursing uniform will be provided upon enrolment).

Registered nurses are expected to provide their own uniforms.

Cost of transportation related to required clinical experience and for laundering uniforms is an annual expense item for all students.

In addition to the above, some equipment may be required by the students as indicated for the nursing assessment and care of individuals and/or families in the community.

LIVING ACCOMMODATION

For nursing students, poor location of living accommodation may affect their clinical performance. It is strongly recommended living near the University and on a busy bus route.

Application forms for admission to women's residences of the Constituent University may be obtained from the Dean of Women. Acceptance is granted after a student has received an offer of admission to the University. Priority is given to undergraduate students.

Application forms for the men's residences may be obtained from the Residence Admissions Office, Saugeen Hall, 289 Windermere Road, London, Ontario, N6A 3K7.

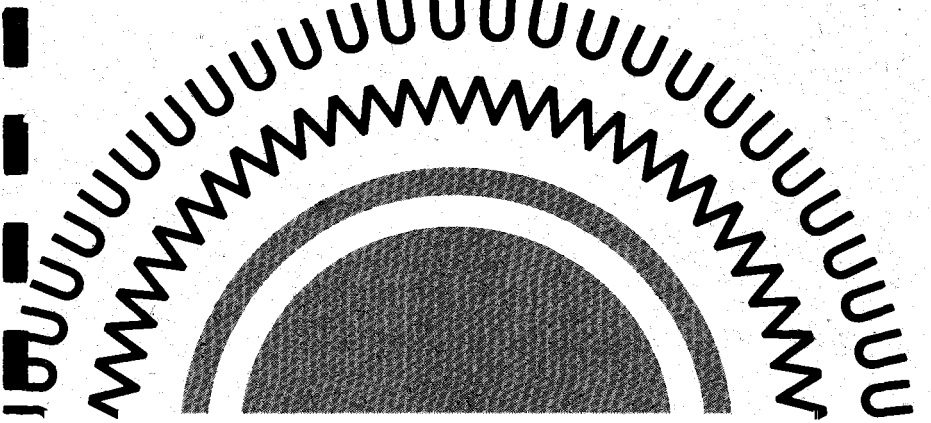
The student housing complex, Windermere Road, has accommodation for married students, including 300 one-bedroom apartments and 100 two-bedroom aprtments. For information and application forms write to: The Business Manager, Married Students' Apartments, The University of Western Ontario, London, Ontario, N6A 3K7.

The Off-Campus Housing and Student Placement Office has over 2000 listings of student accommodation within the London area. These listings include:

Apartments	- furnished and unfurnished
Houses	- furnished and unfurnished
Rooms	- with and without board and housekeeping

For further information, students should apply in person to the office in the University Community Centre.

Faculty of Graduate Studies



OFFICERS OF THE FACULTY

Dean of the Faculty
H. B. Stewart, MD, PhD
Assistant Deans
R. G. Kidd, PhD
W. H. Stockdale, PhD
Administrative Officers
N. M. Davidson, MA
J. K. VanFleet, BA

Faculty of Graduate Studies

ACADEMIC CALENDAR

1973

April 13	Last day for oral examinations of PhD and Master's candidates for Spring Convocation.
April 16	Application deadline for Spring Term (See information under August 15, 1973).
April 20	Good Friday.
April 30	Last day for submission of theses to the Faculty of Graduate Studies Office in time for Spring Convocation.
May 15	Spring term begins. Last day for registration and payment of fees for all graduate students who are in residence, or are receiving official instruction for the spring term. An administrative fee of $25.00 will be assessed each late registration.
May 22	Meeting of the Executive Committee of the Council of the Faculty of Graduate Studies for approval of candidates for Spring Convocation.
June 8	Spring Convocation.
June 15	Last day for enrolling in courses. Students who have not paid late registration fees by this date cannot receive academic credit for the Spring Term.
July 20	Last day for submission of PhD theses to departments for examination in time for Autumn Convocation.
August 1	Final date for submission of Applications to Graduate. Students who do not file an Application to Graduate by this date will not be eligible to graduate in the Autumn Convocation.
August 15	All applications, complete with transcripts, for new students in the Faculty of Graduate Studies, and for students beginning work in a new degree program, must be received by this date. Applications received in the Faculty of Graduate Studies after this date *may not* be processed in time for admission to the Fall Term. APPLICANTS ARE ADVISED TO COMMUNICATE WITH THE DEPARTMENT IN WHICH THEY ARE INTERESTED AT THE EARLIEST POSSIBLE DATE, AS MANY DEPARTMENTS MAY HAVE CLOSING DATES FOR ACCEPTANCE OF NEW STUDENTS, SIX TO SEVEN MONTHS BEFORE AUGUST 15. If an applicant is not accepted as a graduate student, he may apply to the Director of Admission, Office of the Registrar for admission as a special undergraduate student before September 1.

August 24	Last day for submission of Master's theses to departments for examination in time for Autumn Convocation.
September 1	Fall term begins. Last day for registration and payment of fees for all graduate students who are in residence, or are receiving official instruction for the fall term. An administrative fee of $25.00 will be assessed each late registrant.
September 14	Last day for oral examinations of PhD and Master's candidates for Autumn Convocation.
September 28	Last day for submission of theses to the Faculty of Graduate Studies Office in time for Autumn Convocation.
October 1	Last day for enrolling in courses.
October 8	Thanksgiving Day.
October 17	*Meeting of the Executive Committee of the Council* of the Faculty of Graduate Studies for approval of candidates for Autumn Convocation.
October 19	*Last day for submission of* PhD theses to departments for examination in the Fall Term.
October 26	Autumn Convocation.
December 3	Last day for submission of Master's theses to departments for examination in the Fall Term.
December 3	Application deadline for Winter Term (See information under August 15, 1973).
December 14	Last day for oral examinations of PhD and Master's candidates in the Fall Term.
1974	
January 1	Winter Term begins. Last day for registration and payment of fees for all graduate students who are in residence, or are receiving official instruction for the winter term. An administrative fee of $25.00 will be assessed each late registrant.
February 1	Last day for enrolling in courses. Students who have not paid late registration fees by this date cannot receive academic credit for the Winter Term.
February 25	Last day for submission of PhD theses to departments for examination in time for Spring Convocation.
March 1	Final date for submission of Applications to Graduate. Students who do not file an Application to Graduate by this date will not be eligible to graduate in the Spring Convocation.

April 1	Last day for submission of Master's theses to departments for examination in time for Spring Convocation.
April 11	Last day for oral examinations of PhD and Master's candidates for Spring Convocation.
1974 April 12	Good Friday.
April 15	Application deadline for Spring Term (See information under August 15, 1973).
April 30	Last day for submission of theses to the Faculty of Graduate Studies Office in time for Spring Convocation.
May 15	Spring Term begins. Last day for registration and payment of fees for all graduate students who are in residence, or are receiving official instruction for the Spring Term. An administrative fee of $25.00 will be assessed each late registrant.
May 23	Meeting of the Executive Committee of the Council of the Faculty of Graduate Studies for approval of candidates for Spring Convocation.
June 3	Spring Convocation.
June 15	Last day for enrolling in courses. Students who have not paid late registration fees by this date cannot receive academic credit for the Spring Term.

Fees are due and payable on or before the designated date for each term. Notification of fees due will be mailed to each student in advance, provided he ensures that the Registrar's Office is always aware of his current address.

Administrative fees for late registration and late course enrollments are not wholly punitive, but reflect the additional cost to the University of registering students out of phase. They will, therefore, be assessed universally and without exception.

It is the student's responsibility to ensure that his fees are paid on time, and that other deadlines are met notwithstanding any attempts by the University to ensure that deadlines are advertised in advance. If a student knows he cannot personally register by the designated day, he should arrange for someone to register on his behalf. Alternatively, he may forward his fees by mail to the Fees Supervisor, Stevenson Hall. Cheques must be made payable to The University of Western Ontario.

GRADUATION

All students expecting to graduate must file an Application to Graduate with the Office of the Registrar.

Applications by students who expect to graduate at the Spring Convocation must be filed by March 1st of each year, and by those who expect to graduate at the Autumn Convocation, by August 1st of each year.

In addition to the Application to Graduate, the student's Department must submit a Change of Status Form, indicating completion of program, to the Faculty of Graduate Studies once all degree requirements have been fulfilled.

ORGANIZATION OF DIVISIONS

Arts Division

Departments of Classics, English, French, German, Music, Philosophy, and Spanish and Italian.

Divisional Committee

Ex officio Members

Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Arts, Dean of Music.

Members

Representatives of Departments, Representatives of Professional Degree Committee, Faculty of Graduate Studies Representatives from the Arts Division on Senate, Graduate Student Representatives.

Social Sciences Division

Faculties of Business Administration, Library and Information Science and Nursing and the Departments of Economics, Geography, History, Political Science and Sociology.

Divisional Committee

Ex officio Members

Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Business Administration, Dean of Library and Information Science, Dean of Nursing, Dean of Social Science.

Members

Representatives of Departments, Representatives of Professional Degree Committees, Faculty of Graduate Studies Representatives from the Social Sciences Division on Senate, Graduate Student Representatives.

Biosciences Division

Departments of Anaesthesia, Anatomy, Bacteriology and Immunology, Biochemistry, Biophysics, Diagnostic Radiology, Epidemiology, History of Medicine and Science, Medicine, Obstetrics and Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Pathology, Pharmacology, Physical and Health Education, Physiology, Plant Sciences (Botany), Psychiatry, Psychology, Surgery, Therapeutic Radiology, and Zoology.

Divisional Committee

Ex officio Members

Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Dean of Dentistry, Dean of Medicine, Dean of Science, Dean of Social Science.

Members

Representatives of Departments, Representative of Professional Degree Committee, Faculty of Graduate Studies Representatives from the Biosciences Division on Senate, Graduate Student Representatives.

Physical Sciences Division

Departments of Applied Mathematics, Astronomy, Chemistry, Computer Science, Engineering Science, Geology, Geophysics, Mathematics, and Physics.

Divisional Committee

Ex officio Members

Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Dean of Engineering Science, Dean of Science.

Members

Representatives of Departments, Representative of Professional Degree Committee, Faculty of Graduate Studies Representatives from the Physical Sciences Division on Senate, Graduate Student Representative.

COMMITTEES OF THE FACULTY COUNCIL

Executive Committee of the Faculty 1973-74

Chairman

Dean

Ex officio Members

President, Vice President (Academic), Assistant Deans of Graduate Studies, Chairmen of Standing Committees.

Members

Representatives of Faculty of Graduate Studies on Senate, Chairmen of Divisional Committees, Chairmen of Professional Degree Committees, Representatives of Divisions, Graduate Student Representatives.

Professional Degree Committees of the Faculty 1973-74

Master of Business Administration

Master of Clinical Science

Master of Engineering

Master of Library Science

Master of Music

Master of Science in Nursing

Note: The names of the members of committees are published in the Faculty of Graduate Studies Handbook.

GENERAL ADMISSION REQUIREMENTS

Programs leading to Masters and Doctoral Degrees are available.

Applicants for admission normally must be graduates of a recognized University, College or Institute, and provide evidence or promise of scholarly achievement.

Admission to the Faculty of Graduate Studies is granted by the Dean only on recommendation of the Department or Division in which the applicant intends to work toward completion of degree requirements. Ordinarily at least second class (or B) standing (or equivalent grade point average) over the final two years of his undergraduate program is required; in exceptional cases, where high quality performance in post-baccalaureate work can be substantiated, admission may be granted without this requirement.

Admission with Full Standing is normally accorded applicants who are graduates of an Honors (or four year) program of an accredited institution, and who have intensive specialization in the subject matter of their chosen discipline.

Admission as Special Graduate Student may be recommended for students whose background preparation is difficult to evaluate. Such students are not considered degree candidates until such time as their Department or Divisional Committee formally recommends to the Dean a change in their registration status. At that time a student may be granted retroactive credit toward a degree for courses completed and residence time fulfilled, up to one academic year.

Students classified as **Special Graduate Students** will be accorded all privileges of **Full Standing** and pay normal graduate fees.

Honors Bachelor's degree holders who, as a result of changing their field of specialization, are required to take all or a majority of undergraduate courses in their first year will be admitted with **Full Standing** and pay normal graduate fees.

Students with an ordinary (three-year) degree (or equivalent) who wish to undertake graduate studies may be advised by the department to which they make application to register as Special Students in the appropriate *Undergraduate* Faculty. Admission to the Faculty of Graduate Studies will be considered on the basis of achievement in that year of study, which should ordinarily be comprised of five undergraduate courses selected in consultation with the department concerned.

Students who have not a clearly expressed intention of proceeding to completion of all requirements of a graduate degree and who propose to take undergraduate courses (i.e. students attempting to 'upgrade' for Ontario Type A teaching certification and students attempting to improve their academic record for application to a professional program) should register as special students in an undergraduate Faculty.

Change of Degree Status

Any change in the designation of the degree for which a student is a candidate will be made by the Dean only on the recommendation of the student's Department or Divisional Committee: retroactive registration may be granted for not more than one year. Such recommendations are to be submitted to the Dean using the change-of-status forms provided.

Application Procedure

An APPLICATION FOR ADMISSION FORM may be obtained from the Faculty of Graduate Studies or from the Faculty or Department concerned. The completed forms should be returned to the appropriate Department or Faculty together with TWO COPIES OF CERTIFIED OFFICIAL UNDERGRADUATE AND GRADUATE TRANSCRIPTS covering all academic studies to date. It is the responsibilty of each applicant to ensure that all documents, i.e. transcripts and letters of recommendation, are submitted. A graduate of a university outside North America may be required to submit a description of all courses taken in his field of specialization and cognate fields. NO APPLICATION WILL BE CONSIDERED UNTIL IT IS COMPLETE. This procedure must be followed even if the applicant has corresponded with a Department and has been assured of space and facilities for research. If a student is admitted to the Faculty of Graduate Studies, he will receive notification from the Office of the Registrar; if the application is not approved for admission to the Faculty of Graduate Studies, the student will receive notification from the Department concerned.

Proficiency in English

Applicants for admission to Graduate Studies may be required to furnish evidence of their proficiency in the use of the English language by satisfactory achievement in the University of Cambridge Certificate of Proficiency in English examination or

satisfactory scores on the Test of English as a Foreign Language (TOEFL) or the English Proficiency Test of the English Language Institute (ELI) of the University of Michigan.

Application forms for the TOEFL may be obtained from the Faculty of Graduate Studies or by writing to: Test of English as a Foreign Language, Box 899, Princeton, New Jersey 08540, U.S.A. The TOEFL is administered on four dates each year (October, January, March and June); registration forms must be submitted directly to the testing agency at least one month in advance of the test date. Arrangements to write the English Proficiency Test of the English Language Institute may be made by writing to: The English Language Institute, University of Michigan, Ann Arbor, Michigan, U.S.A.

Students who are required to present proof of proficiency in English must make their own arrangements to write the TOEFL or FLI test and to have the results sent directly to the Faculty of Graduate Studies by the testing agency.

Graduate Record Examinations

Applicants for admission to Graduate Studies may be asked to take the Graduate Record Examinations which are prepared by the Educational Testing Service of Princeton, New Jersey and Berkeley, California and administered at most universities several times each year. The student will bear the cost of taking such examinations. Application forms are available in the office of the Faculty of Graduate Studies, The University of Western Ontario.

General Information on the University of Western Ontario

A general information booklet for prospective students may be obtained from the Office of the Registrar, the University of Western Ontario, London, Ontario N6A 3K7.

Transfer of Academic Credits

Arrangements have been made to enable students registered in one Ontario university to take graduate courses in another Ontario university. The departmental chairman must request admission for his student from the departmental chairman of the host university. Unless the host chairman agrees, the transfer will not take place. IF THE HOST UNIVERSITY AGREES TO ACCEPT THE TRANSFER STUDENT, THERE WILL BE NO FURTHER ADMISSION REQUIREMENTS.

A transfer student must enroll and pay regular fees in his home university and register in a course but pay no fees to the host university. The home university will accept the grade reported by the host university and will grant appropriate course credit on the student's program. Work done as a transfer student will be credited towards the residence requirement. Student awards will not be affected by transfers.

REGISTRATION

Initial Registration

A candidate whose application has been accepted by the Faculty of Graduate Studies may register for the first time at the beginning of the Fall, Winter, or Spring Terms, immediately following such acceptance. Candidates wishing to register more than three terms after date of acceptance will be required to submit a new application for approval. The student should consult his Department concerning the requirements of the program of study for which he wishes to register.

A student whose registration in the Faculty of Graduate Studies is his first registration at The University of Western Ontario must have had a physical

examination completed by his own physician by the time of registration. All students registering at The University of Western Ontario are required to take the intracutaneous testing for tuberculosis each year. Students showing positive reaction must have a chest x-ray, this to be repeated each year.

Graduate students are required to register on or before the date designated in the Academic Calendar. All registration materials will be mailed to the student by the Registrar's Office in care of the department in which he is to be enrolled. The fee bill and remittance should be mailed to the Fees Supervisor in the envelope provided, or may be submitted in person at the Cashier's Wicket, in the Office of the Comptroller. Courses must be recorded on the Course Enrolment form and approved by the Department Chairman or Faculty Advisor. The completed course enrolment form must be submitted to the Registrar's Office. Student identification cards may be obtained at the Registrar's Office upon presentation of evidence that fees have been paid.

Late Registration will be subject to additional fees as specified elsewhere in the Calendar.

Students are reminded that they will not receive any credit for courses for which they are not properly enrolled. **The onus to ensure that registration is completed satisfactorily lies with the student.** If a student is not certain about the status of his registration at any time, he should be sure to consult the Registrar's Office.

Full-time Student

A student who is engaged in his degree program on a full-time basis during a given term and who meets the following criteria will be registered as a full-time student:

a) identifies himself as a full-time graduate student

b) is geographically available and visits the campus regularly.

It is understood that a graduate student may be absent from the University while still under supervision, eg. visiting libraries, attending a graduate course at another institution, field work, etc. If such period of absence exceeds four weeks in any term, written evidence shall be available in the Graduate Studies Office to the effect that the absence has the approval of the Department Chairman and the Dean of Graduate Studies.

c) is not regularly employed on other work, or by the University, for more than an average of 10 hours per week and **is not employed outside the University except by written permission of the Supervisor.**

It should be noted that if a student is employed as a teaching fellow or demonstrator, the 10 hours per week should represent the TOTAL time spent by the student in connection with the appointment, i.e. it includes time spent on preparative work, reading set assignments, marking examinations, etc.

Notwithstanding the above criteria, any student initially registering in his current graduate program after May 1, 1971 who receives for services rendered to the University income exceeding $1200 for any single term or $2400 for any set of three consecutive terms is not eligible for full-time status during that term or that set of three terms respectively.

Part-time Student

All graduate students other than those eligible to register as full-time students will register as part-time students. This will include:

a) those whose hours of employment or whose University-based remuneration makes them ineligible for full-time registration.

b) those taking graduate courses on a part-time basis.

c) those who have fulfilled the residence requirements for their degree and who are completing their thesis on a non-resident basis.

Continuity of Registration

Graduate students must be registered in each term in which they are actively engaged in course work, in a research program, or in thesis preparation: that is, whenever they are making use of University facilities or personnel.

Degree candidates must be registered in the term in which they complete the requirements for the degree. Students not completing requirements by the last day in a particular term must re-register in the following term. Such a student is eligible for partial refund of fees according to the Rebate Schedule when program completion has been certified by the Faculty of Graduate Studies.

GRADUATE FEE SCHEDULE

Full-Time Graduate Students

Tuition fees for full-time graduate students are established by the Ministry of Colleges and Universities of the Province of Ontario. The level established is uniform for all graduate programs in the provincially-assisted Universities. The fee established by the Province for the academic year 1972-73 (until September 1, 1973) is $292.50 per term. If the student has been consecutively registered for the Fall (3) term of 1972 and the Winter (1) term of 1973 the fee for full-time registration in the Spring (2) term (May 15, 1973 to September 1, 1973) will be met by a Bursary from the Board of Governors of the University of Western Ontario. In addition to tuition fees an activity fee of $18.00 per term is required from each full-time student. Total fees payable until September 1, 1973 are:

Registration began		Fall term (3) 1972	Winter term (1) 1973	Spring term (2) 1973	Annual Total
Fall (1972) or before	Tuition	$292.50	$292.50	*	$585.00
	Activity	$ 18.00	$ 18.00	$ 18.00	$ 54.00
		$310.50	$310.50	$ 18.00	$639.00
Winter (1973)	Tuition	—	$292.50	$292.50	$585.00
	Activity	—	$ 18.00	$ 18.00	$ 36.00
		—	$310.50	$310.50	$621.00
Spring (1973)	Tuition	—	—	$292.50	$292.50
	Activity	—	—	$ 18.00	$ 18.00
		—	—	$310.50	$310.50

* Bursary from Board of Governors, University of Western Ontario to the value of $292.50.

Part-Time Graduate Students

Part-time graduate students are assessed a fee of $100.00 per term. Only those students who, by reason of their employment or by reason of their absence from campus are ineligible to register as full-time students may enrol as part-time students.

STUDENTS ARE NOT REGISTERED UNTIL THEY HAVE PAID THEIR FEES.

Fees are payable in full on or before the dates designated for the beginning of each term.

Miscellaneous Charges

Late registration fee

(as detailed in registration materials) $25.00

Reinstatement Fee $25.00

On the recommendation of the Dean of Graduate Studies, fees may not be required of a student who has been granted permission from the Head of the Department and the appropriate committee on Graduate Studies to receive credit for work done at another University and who is paying fees to that University. However, under the procedures established by the Ontario Council on Graduate Studies, a student, who has received permission to receive credit for a course offered by another provincially supported university in the Province of Ontario, shall be classed as a transfer student by the host university. He shall remain a registered student of his home university and pay the tuition fee to this university. The student will pay no fees to the host university.

Students may not take examinations, nor be recommended for a degree until tuition fees and other accounts owing to the University are paid.

N.B.: A new fee schedule expected to become effective on September 1, 1973 is currently in preparation. At the time this publication went to press, no precise information about its nature was available.

THE BOARD OF GOVERNORS RESERVES THE RIGHT TO AMEND FEES AFTER THE PRINTING OF THIS ANNOUNCEMENT.

REGULATIONS GOVERNING ADVANCED DEGREES

PURPOSE OF GRADUATE STUDIES

The academic graduate programs leading to degrees are considered to provide advanced study in a general field of knowledge and not as specific training for a professional position. The candidate should be aware that, although this advanced education may better fit him for certain careers and positions, this is not a specific purpose of the program. A candidate should undertake advanced study only because of his personal interest in a chosen field and not as an assured entry to a professional career.

DEGREES AND COURSES OF STUDY OFFERED

The Faculty of Graduate Studies offers courses of study leading to graduate degrees as follows:

Doctor of Philosophy (PhD) in Anatomy, Applied Mathematics, Astronomy, Bacteriology and Immunology, Biochemistry, Biophysics, Business Administration, Chemistry, Economics, Engineering Science, English, Epidemiology, French, Geography, Geology, Geophysics, German, History, Mathematics, Pathology, Pharmacology, Philosophy, Physics, Physiology, Plant Science, Political Science, Psychology, and Zoology.

Master of Arts (MA) in Classics, Economics, English, French, Geography, German, History, Mathematics, Musicology, Philosophy, Physical Education, Political Science, Psychology, Sociology, and Spanish.

Master of Business Administration (MBA)

Master of Clinical Science (MClSc) in Anaesthesia, Diagnostic Radiology, Medicine, Obstetrics and Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Psychiatry, Surgery, and Therapeutic Radiology.

Master of Engineering (MEng)

Master of Engineering Science (MESc) in Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, and Materials Science.

Master of Library Science (MLS)

Master of Music (MusM) in Music Theory, Composition, Music Education, and Literature and Performance. (For Musicology, see Master of Arts above.)

***Master of Science* (MSc)** in Anatomy, Applied Mathematics, Astronomy, Bacteriology and Immunology, Biochemistry, Biophysics, Geology, Geophysics, Pathology, Pharmacology, Physics, Physiology, Plant Science and Zoology.

Master of Science in Nursing (MScN) in Nursing Administration and Nursing Education.

Residence Requirements

The academic year in the Faculty of Graduate Studies consists of three terms (Fall or third term, Winter or first term, and Spring or second term), commencing on or about September 1, January 1, and May 15. The minimum residence requirement for an academic year is two terms. This does not reduce the requirements of paying for three terms in order to receive credit for one year of residence. In most Departments residence for a certain number of Fall and Winter Terms is required.

Adding and Dropping Courses

Following the submission of a completed "course enrolment" card, course changes may be made, with the approval of the Department concerned, on the appropriate form.

Illness

Should a student suffer from an illness or accident which might impair his academic performance, documentary evidence from a physician must be submitted to the Department concerned or the appropriate Divisional Committee on Graduate Studies as soon as possible. Unless medical evidence is presented at this time it may not be considered in support of a subsequent appeal.

Examinations

Grading System

Graduate Students are expected to maintain at least a B standing averaged over all their courses.

All course standings within the Faculty of Graduate Studies will be reported as follows:

A above 80%

B 70-79% inclusive

C 60-69% inclusive

COMPLETE (only for special assignments) e.g. thesis, field trips, etc.

F Fail, i.e. less than 60%

INCOMPLETE (This will be interpreted "no grade received" and will be removed from the record if or when a grade is submitted).

Note: Either a numerical or a letter grade may be submitted by the Department to the Registrar.

Special Examinations

Permission to write a Special Examination must be obtained from the Dean of Graduate Studies on the recommendation of the appropriate Divisional Committee and the Department responsible for the course in which the student is registered.

TIME-LIMIT FOR DEGREE COMPLETION

All degree programs must be completed within a period not exceeding in the case of the Master's degree three years beyond completion of minimum registration requirements and in the case of a doctoral degree a period not exceeding five years beyond completion of minimum registration requirements.

DOCTOR OF PHILOSOPHY (PhD)

Entrance Requirements

A candidate must be a graduate of an approved university or hold equivalent qualifications. He must have received a Bachelor's degree with Honors in which standing in the final two years of the program was B or better (or its equivalent), or a Master's degree, or a degree in Medicine, Dentistry, or Veterinary Medicine.

Academic Requirements

The degree of Doctor of Philosophy will be granted only to a candidate who has shown high aptitude and attainment in research and has presented in a scholarly manner a thesis containing an original contribution to knowledge. Graduate students are expected to maintain at least a B standing averaged over all their major courses, and at least a B standing averaged throughout their program.

Period of Study

The period of study will be determined by the academic qualifications of the candidate and by his previous experience in research. Usually three academic years full-time will be required, though this period of residence will be extended for part-time students. The time may be reduced to two academic years full-time, or longer for part-time students, if the candidate holds a Master's degree, or a degree in Medicine, Dentistry or Veterinary Medicine. If more than ten hours a week are spent in teaching or other departmental duties, the period of study will be extended. Students in the sciences are usually expected to continue their laboratory or field work during the Spring Term.

With the consent of the Chairman of the Department, School or Faculty, and with the approval of the appropriate Committee on Graduate Studies, permission may be granted to a candidate to study elsewhere. A maximum period of one academic year of such studies may be credited towards the period of study required for the degree.

Course of Study

The course of study for each candidate shall be determined by the Chairman of the Department (or equivalent) in consultation with his departmental Graduate Affairs Committee.

For each candidate the Chairman of the Department in consultation with his Graduate Affairs Committee shall appoint an Advisory Committee consisting of a Chief Adviser and at least two Assistant Advisers.

Language Requirements

In those Divisions or Departments which require it, a candidate for the degree of Doctor of Philosophy must have a reading knowledge of at least one language, other than English, which is acceptable to his Department, School or Faculty, and is useful in his research. The candidate must furnish evidence of such reading knowledge either in the form of university credits or by passing an examination offered by the department in which the student is registered. Alternatively the requirement may be fulfilled by the use of the Graduate Foreign Language Test of the Educational Testing Service, Princeton. This shall normally mean credit for at least one year's work in the language at college level, or its equivalent, e.g. French 20 or 45; German 20 or 45; Russian 1 and 10 or 15; Spanish 20 or 45; or the ETS Graduate Foreign Language Test. If the nature of a candidate's research makes it desirable, a Department, School or Faculty may require him to show reading knowledge of an additional language.

Courses in Scientific French, German, Russian and Spanish are given each year in the Faculty of Arts. Since language requirements differ from department to department, it is the student's responsibility to ascertain his department's requirements, to fulfill them, and check that the department records the completion of the requirement.

Teaching

The University believes that a graduate student's training should include some experience in teaching. Students may, therefore, be called upon to undertake assignments in demonstrating or lecturing without remuneration. Departments are asked to make such opportunities available to their students when possible but the assignments should not be so heavy as to lengthen the student's normal graduate course.

PhD Thesis

(a) General Specifications

A thesis is required of every candidate for the degree of Doctor of Philosophy. The thesis must consist of the candidate's own account of his research. It may describe work done in conjunction with his supervisor if the candidate clearly states his personal share in the investigation. The candidate must indicate in what respects his investigations have increased the knowledge of the subject.

A candidate will not be permitted to submit a thesis for which he has previously received a degree. Permission may be given to a candidate by the appropriate Committee on Graduate Studies to incorporate in his doctoral thesis work included in a previous thesis.

(b) Format Specifications

The regulations of the Faculty of Graduate Studies as to the quality of paper, type and layout must be fulfilled to facilitate the binding and microfilming of each thesis. A copy of the U.W.O. Guide for the Preparation of Theses may be obtained from the Faculty of Graduate Studies before the final draft of the thesis is typed. Students are asked to consult the Faculty of Graduate Studies about such matters as kind of paper, method of duplicating copies, use of a paginator, binding personal copies, preparation of illustrative material and other related problems.

(c) Submission Procedure

The candidate shall submit to his Chief Adviser portions of his thesis when requested and a complete draft on a date specified by his Adviser. When the candidate is prepared for the Faculty Oral Examination he shall submit to the

Chairman of the appropriate Committee on Graduate Studies FIVE unbound copies of the completed thesis. The thesis may be submitted at any time of the year, but to be sure of being examined in time for graduation at any given Convocation, the candidate must submit the thesis at least FOURTEEN weeks before the date of that Convocation. Each copy of the thesis shall contain a technical Abstract of not more than five hundred words and the candidate's Vita. A copy of the Abstract will be made available to members of the Faculty on request by the Department concerned. Following a successful examination and at least SIX weeks before Convocation, the candidate shall present FIVE copies of his thesis to the Thesis Office of the Faculty of Graduate Studies.

(d) Distribution of Theses

The Faculty of Graduate Studies will pay for the cost of binding the required copies which are distributed as follows: two copies are kept in the thesis collection in The D. B. Weldon Library (or the appropriate Science Library); one copy is kept by the department; and two bound copies are returned to the doctoral candidate for his own use. If a student wishes to have more copies bound he is charged for the binding of each additional copy.

The thesis, with the written consent of the author, will be microfilmed by the National Library of Canada. The positive copies of the microfilms held in the National Library are listed in Canadiana, the monthly and annual national bibliography published by the National Library.

(e) Distribution of Abstracts

All PhD candidates must submit three abstracts of their thesis. One of these is kept in the library archival collection, one in the reference collection, and the third is sent by the Faculty of Graduate Studies, on the authority of the candidate, to be published in Dissertations Abstracts International. Instructions for the preparation of these abstracts can be obtained with a thesis guide.

Departmental Examinations

Any department may require that a student pass any or all of: oral or written examinations on course work; a comprehensive examination; a qualifying examination. All requirements, including language requirements, must be completed (except with special permission of the Dean of Graduate Studies) before recommendation for the Faculty Oral Examination.

Notice of any type of examination required shall be given by the Chairman of the Department to the candidate at least two months before the date on which the examination is to be held.

Public Lecture

The candidate shall present a lecture on his research, open to all members of the University, to be followed normally within 24 hours by the Faculty Oral Examination. The public lecture shall be arranged by the Department concerned. However, the *announcement* of this lecture shall be arranged by the Dean of the Faculty of Graduate Studies in the weekly Western News.

Departments shall arrange for a Chairman of the public lecture. Arrangements for the Faculty Oral Examination shall be made by the Dean of the Faculty of Graduate Studies.

The requirement of the public lecture is at the discretion of the Division concerned, and has been retained by the Biosciences and Physical Sciences Divisions. The requirement has been waived for all Departments in Arts and Social Sciences.

Faculty Oral Examination

1. Board of Examiners

The Board of Examiners shall consist of:

(a) a non-voting Chairman appointed by the Dean of Graduate Studies,

(b) the following four Examiners:

(i) two Examiners who shall normally but not necessarily be from the candidate's Department.

(ii) a third Examiner from outside the candidate's Department (or discipline where no department exists). This Examiner shall be knowledgeable in the general field of the thesis and may be from this University or any other institution.

(iii) a fourth Examiner who shall be from outside this University and who shall be competent in the special field of the thesis.

The Board of Examiners shall exclude the candidate's Chief Adviser. The presence of the fourth Examiner (1 b.iii) at the oral examination may be waived by the Dean.

2. Appointment of Examiners

All Examiners (1 b.i., b.ii., b.iii.) shall be appointed by the Dean after consultation with the appropriate Divisional Committee.

3. Evaluation of the Candidate

Each Examiner shall examine the thesis in detail and make a written evaluation of the content and form of the thesis, to be received in the Office of the Faculty of Graduate Studies at least 48 hours before the examination. Those examiners present at the examination shall also evaluate the oral defence of the thesis.

The acceptability of the content of the thesis shall be determined by the vote of three of the four Examiners, such majority vote to include the vote of the external Examiner (1 b.iii).

The acceptability of the form of the thesis shall be determined by a majority vote of the Examiners.

The acceptability of the oral defense of the thesis shall be determined by a majority vote of the Examiners present at the examination.

Where substantial disagreement arises as to the acceptability of the content of the thesis the Dean shall appoint an *ad hoc* committee to determine the course of action to be taken. The candidate's Chief Adviser shall be a member of this committee.

If the thesis is acceptable, but the oral examination is unsatisfactory, a second oral examination (with preferably the same Examining Board) shall be scheduled at least three months later.

If the content of the thesis is unacceptable, the *ad hoc* committee shall establish the basis for this decision, and advise the candidate of the reasons for its unacceptability. The oral examination may be rescheduled when appropriate steps have been taken to make the thesis acceptable (mandatory three-month delay).

If the content is acceptable, but the form is unacceptable, the candidate shall be advised in what respects the thesis is deficient. The Examiners must be satisfied with any amendments or changes before signing the thesis for submission to the Thesis Office of the Faculty of Graduate Studies.

4. The Examination

The Faculty Oral Examination shall consist of:

(a) A brief introduction of his work by the candidate from a Division not requiring the public lecture as part of the oral examination.

(b) Questioning on the subject of the thesis, and/or on pertinent topics arising from the thesis by the Board of Examiners and by any other members of the Faculty of Graduate Studies present at the examination.

The candidate's Chief Adviser shall attend the examination but may not take part in the examination except with the permission of the Chairman.

The Faculty Oral Examination may be attended by members of the Faculty of Graduate Studies, and visiting faculty members from other institutions on the invitation of a member of the Faculty of Graduate Studies. Other persons may attend the examination only on the invitation of the Dean.

5. Decision

The decision to recommend the awarding or withholding of the degree shall be rendered at the end of the examination, following discussion by the Board of Examiners and the candidate's Chief Adviser, but in the absence of the candidate, and shall be lodged with the Office of the Dean immediately following the examination. Each Examiner shall record his decision on official Faculty of Graduate Studies forms.

MASTER OF ARTS (MA)

MASTER OF SCIENCE (MSc)

MASTER OF ENGINEERING SCIENCE (MESc)

1. Entrance Requirements

A candidate must be a graduate of an approved university or hold equivalent qualifications. Normally only applicants who have graduated with at least a B standing and who, by their undergraduate records have demonstrated the potential ability to succeed in graduate work, will be considered.

2. Period of Study

The duration of the program will be adjusted individually for each candidate. A minimum of one academic year full-time, or two academic years part-time, will be required of graduates from Honors Programs. If more than ten hours a week are spent in teaching or other departmental duties at least two academic years will be required. Students in the Sciences are usually expected to continue their laboratory or field work during the Spring Term.

3. Course of Study

The course of study shall be determined by the Chairman of the Department, (or equivalent) in consultation with his departmental graduate affairs committee, for each candidate. At least one faculty adviser shall be appointed by the committee.

4. Language Requirements

In those Divisions or Departments which require it, a candidate for the Master's degree must have a reading knowledge of at least one language other than English which is acceptable to his Department, School, or Faculty, and is useful in his

research. The candidate must furnish evidence of such reading knowledge either in the form of university credits or by passing an examination offered by the department in which the student is registered. Alternatively the requirement may be fulfilled by the use of the Graduate Foreign Language Test of the Educational Testing Service, Princeton. This shall normally mean credit for at least one year's work in the language at college level, or its equivalent, e.g. French 20 or 45; German 20 or 45; Russian 1 and 10 or 15; Spanish 20 or 45; or the ETS Graduate Foreign Language Test. If the nature of a candidate's research makes it desirable, a Department, School or Faculty may require him to show reading knowledge of an additional language.

Courses in Scientific French, German, Russian and Spanish are given each year in the Faculty of Arts. Since language requirements differ from department to department, it is the student's responsibility to ascertain his department's requirements, to fulfill them, and check that the department records the completion of the requirement.

MASTER'S THESIS

(a) General Specifications

A Thesis, incorporating the results of an investigation in the field of the major subject, may be required.

(b) *Format Specifications*

The regulations of the Faculty of Graduate Studies as to the quality of paper, type and layout must be fulfilled to facilitate the binding and microfilming of each thesis. A copy of the U.W.O. **Guide for the Preparation of Theses** may be obtained from the Faculty of Graduate Studies before the final draft of the thesis is typed. Students are asked to consult about such matters as kind of paper, method of duplicating copies, use of a paginator, binding personal copies, preparation of illustrative material and other related problems.

(c) Submission Procedure

The candidate shall submit to his Chief Adviser portions of his thesis when requested and a complete draft on a date specified by his Adviser. Final revisions as proposed by his Adviser or committee shall be completed. THREE unbound copies of the completed thesis shall be submitted to the Chairman of the Department or to the Chairman of the appropriate Committee on Graduate Studies. The thesis may be submitted at any time of the year, but to be sure of being examined in time for graduation at any given Convocation, the candidate must submit the thesis at least NINE weeks before the date of that Convocation. Each copy of the thesis shall contain an abstract of not more than SIX hundred words and the candidate's Vita.

Following a successful examination and at least SIX weeks before Convocation, the student shall present THREE copies of his thesis to the Thesis Office of the Faculty of Graduate Studies.

(d) Distribution of Theses

The Faculty of Graduate Studies will pay for the cost of binding the required copies which are distributed as follows: two copies are kept in the thesis collection in The D. B. Weldon Library (or the appropriate Science Library) and one copy is kept by the department. If a student wishes to have more copies, he is charged for the binding of each additional copy.

The thesis, with the consent of the author, will be microfilmed by the National Library of Canada. The positive copies of the microfilms held in the National

Library are listed in Canadiana, the monthly and annual national bibliography published by the National Library.

(e) Distribution of Abstracts

All MA candidates must submit two abstracts of their thesis. One of these is kept in the library archival collection and one in the reference collection. Instructions for the preparation of these abstracts can be obtained with a thesis guide.

5. Departmental Examinations

Oral or written examinations on course work, as well as a comprehensive examination, may be required by the Department, School or Faculty concerned. Notice of the type of examination required shall be given by the Chairman of the Department, or appropriate equivalent authority, to the candidate as soon as possible after his initial registration.

A final oral examination on the thesis will be conducted by an Examining Board appointed by the Dean on the advice of the appropriate Divisional Committee. The Examining Board will consist of a Chairman and at least three examiners, one of whom will be from another Department, School, or Faculty than that of the candidate. The candidate's Department will arrange delivery of the thesis copies to the members of the Examining Board and will schedule the Oral Examination.

At the discretion of the Department, a student who has been permitted to substitute additional course work for a thesis, may be required to pass an oral comprehensive examination conducted by a similar Examining Board.

The Chairman of the Department, in consultation with the Chairman of the appropriate Committee on Graduate Studies, may request that a thesis be read by an External Examiner.

The candidate's Chief Adviser shall attend the examination but may not take part in the examination except with the permission of the Chairman. Any other members of the Faculty of Graduate Studies may attend and participate in the examination, but only members of the Examining Board shall vote on the approval of the candidate. To be successful a candidate must be approved by a majority of the Examining Board.

MASTER OF BUSINESS ADMINISTRATION (MBA)

1. Admission

A candidate must be a graduate of an approved university or hold equivalent qualifications. Only students who by their undergraduate records and performance on the Admission Test for Graduate Study in Business have demonstrated the potential ability to do graduate work will be considered. Proficiency in English is required.

2. Course of Study

The course of studies covers two years.

The graduate student is required to take a specific group of closely related courses during the first year of his program. In the second year the graduate student is required to take the equivalent of five courses.

Further details concerning this program should be obtained from the Admissions Officer of the School of Business Administration.

MASTER OF CLINICAL SCIENCE (MClSc)

The objective of the MClSc degree is to provide an opportunity for medically qualified candidates to apply the Basic Health Sciences to clinically-based problems.

Admission

A candidate must have an MD or an equivalent degree in Medicine, from a recognized institution and must have one year of experience as an intern, or an acceptable equivalent. It is considered desirable, but not necessary, for the candidate to have in addition at least one year of experience in the clinical specialty of his choice. Normally only applicants who have graduated with at least a B standing will be considered.

The Biosciences Divisional Committee of the Faculty of Graduate Studies in accepting a candidate for the MClSc shall appoint a committee to act in an advisory capacity to the candidate. It shall consist of:

1. A representative of the Clinical Department to which the candidate is attached.
2. A representative of a Basic Science Department interested in the research to be undertaken.
3. A member of a Department not directly involved in the candidate's work. This committee shall appoint its own chairman.

The course and duration of study required of an individual candidate shall be a matter of recommendation by the supervisory committee and be ratified by the Biosciences Divisional Committee.

A thesis shall be presented by the candidate in accordance with the standards and regulations outlined for the MA, MSc and MESc degrees.

There shall be a thesis examination with at least three examiners appointed by the Biosciences Divisional Committee of the Faculty of Graduate Studies and one of these shall be an Examiner External to the University whose presence shall be requested at the examination.

MASTER OF ENGINEERING (MEng)

1. Course of Study

Course work programs leading to the degree of Master of Engineering are offered to those engineers whose interests lie in analysis, design, and development rather than research. An individual program shall consist of a minimum of 5 courses (totalling at least 10 credits), a project (3 credits), and a seminar, and shall be approved by the appropriate Graduate Board. Credits for courses shall be computed on the basis of 1 credit for each hour per week of lectures and 1 credit for each three hours per week of laboratories.

2. Academic Qualifications

A candidate for the degree of Master of Engineering must be a graduate of a recognized university or hold equivalent qualifications. Only students who by their previous academic records have demonstrated their potential ability to succeed in graduate work will be considered. Proficiency in English is required of non-English speaking students. This may be demonstrated as described under language requirements.

3. Period of Study

The minimum period of full time study is one academic year, i.e. the Fall and Winter Terms in residence. Students may be permitted to undertake the program on a part-time basis provided that satisfactory arrangements can be made for the

project; this may require that not less than one term be spent in full time studies. Students registered on a part-time basis must complete all the requirements for the degree within the four year period following registration as a graduate student.

4. Advisers

A faculty adviser shall be appointed for each candidate; additional advisers may be appointed as required.

5. Project

The project report shall be read by at least two examiners only one of whom need be a member of the Faculty. The candidate shall be required to give a public lecture on the subject of his project but shall not be required to defend it at an oral examination.

MASTER OF LIBRARY SCIENCE (MLS)

1. Admission

A candidate for admission to MLS studies must be a graduate of an approved university or hold equivalent qualifications. Normally only applicants with at least a B standing can be considered. Candidates with a four-year honors degree or its equivalent may be admitted to the School's three term program at the beginning of any of the three terms. Candidates who wish to transfer at the end of one year from other graduate library schools with a two-year MLS or who hold a BLS from another ccredited library school or its equivalent may complete their MLS after two terms. Candidates who have a three-year Bachelor's degree with at least B standing may undertake two terms of undergraduate studies in the area of concentration. They should apply to the appropriate Department for advice on the courses that would be necessary to raise their degree to the necessary standard for admission to the Faculty of Graduate Studies.

Candidates who have a three-year degree with at least B standing may also undertake three (preferably honors) courses in other Departments on campus and four half-courses within the School. Special arrangements must be made through the School when those admitted are determining their program. Prospective school librarians who have completed a year of study, with at least B standing, at a College of Education or its equivalent, may be admitted to the three-term program.

All students must have proficiency in spoken as well as written English in order to contribute to seminar discussions.

2. Period of Study

Dependent upon the conditions laid down upon admission to the Faculty of Graduate Studies, a student may complete his studies for the MLS in two or three consecutive terms. It is possible to earn the MLS in summer terms or in summer sessions plus a final term. The program may also be taken part time.

3. Language Requirements

Because of the importance of languages in the field of library and information science, a reading knowledge of at least one language other than English is expected. The second language must be useful in study and research in the School's field of knowledge.

MASTER OF MUSIC (MusM)

MASTER OF ARTS IN MUSICOLOGY (MA)

Areas of Concentration

The Master of Music degree is offered in the field of Music Theory, Music Education, Composition, and in Music Literature and Performance. The Master of Arts degree is offered in Musicology.

1. Admission

A candidate must be a graduate of an accredited university or hold equivalent qualifications, including an Honors degree (Bachelor of Music) or its equivalent with at least a B average. Students who have taken Pass degree (three year) program may register in the undergraduate faculty.

2. Entrance Examinations

All prospective graduate students shall be required to take a number of examinations which serve as placement tests. These examinations are given at various times during the year and must be taken prior to registration. Deficiencies that become apparent as a result of these examinations must be removed at the earliest opportunity through approved courses or re-examination. A student will be presumed to be deficient in any area in which he does not take the entrance examination.

Students should achieve an A on the entrance examination in their chosen area of specialty, and not less than B in the other areas. Deficiency courses may not be used as a means of improving the academic average to meet the minimum level for admission to candidacy.

Entrance examinations will be given in the areas of Music Theory, Music History, Piano Proficiency, and in the student's Applied Music area (piano, voice, violin, etc.). The content of these examinations may be obtained by writing to the Dean of the Faculty of Music.

3. Special Prerequisites

A course in Acoustics and undergraduate training in Orchestration is required of candidates pursuing the degree in Music Theory. Knowledge of German is required of candidates in Musicology.

Students concentrating in Music Education must have completed two years of classroom teaching. This prerequisite does not apply to all courses, but it does apply to the Music Education Seminar and Thesis.

Candidates in Composition must submit scores of their recent compositions and have them accepted by the Graduate Music Faculty.

Candidates in the areas of Literature and Performance must demonstrate in their audition a level of performing ability comparable to an A standard of the final undergraduate year before being admitted to candidacy.

4. Language Requirements

Before being admitted, all candidates must demonstrate competence in the English language. In certain programs, a student must also have a reading knowledge of at least one language other than English which is acceptable to the student's department and is useful in his research. If a student is not able to meet the foreign language requirement at the time of his application for admission, he may be allowed to pursue some graduate courses while he is gaining language competence.

Musicology majors will be required to obtain a reading knowledge of German and any other language necessary for the student's research. Voice majors, in addition to obtaining a reading knowledge of one language other than English, must satisfy the Graduate Committee of the Faculty of Music that they have facility in the pronunciation of German, French, and Italian before graduating.

In the Music Education program, the foreign language requirements may be waived depending on the nature of the student's research. This will be done only on the recommendation of the student's Faculty Adviser and with the approval of the Professional Degree Committee for Music.

5. Period of Study

Candidates shall be required to spend at least two terms of each academic year in residence, and to complete the program within five years. Students must register for each session during which they plan to use any university facilities, and must register in the session during which they plan to complete their degree program.

The minimum time in which the requirements can be completed is one full year (three terms), but the actual duration will depend upon the proposed course of study. Candidates who undertake remunerative employment must be prepared to spend additional time. When a deficiency in any area is indicated by the entrance examinations, the student must plan to devote more than one academic year to complete the program.

6. Course of Study

The course of study shall be initially proposed by the student's Adviser and the Chairman of the Department in which the candidate is working and shall be approved by the Graduate Music Committee. For each candidate, the Graduate Music Committee shall appoint at least one adviser.

The program of study normally involves five courses (fifteen hours) and a thesis. The suggested content of the study program in each of the areas of concentration may be obtained from the Dean of the Faculty of Music.

Participation in Ensemble is required of all students majoring in Literature and Performance and is recommended for all students.

7. Thesis and Document

A thesis incorporating the results of an investigation in the field of the student's major area is required of all candidates in Music Theory, Musicology, Music Education, and Composition. Students working toward a Master of Music in Literature and Performance will present a document following the procedure laid down for theses. The regulations of the Faculty of Graduate Studies will be followed concerning the preparation and presentation of the thesis and document and the make-up of the Examining Board that conducts the oral examination on the thesis or document.

8. Examinations

Oral or written examinations on course work, as well as a comprehensive examination, may be required. Notice of the type of any examination required shall be given by the Chairman of the Department to the candidate at least two months before the date on which the examination is to be held.

A final oral examination on the thesis or document will be conducted under the supervision of the Professional Degree Committee in Music, which will appoint a Chairman and an Examining Board. The board will consist of a Chairman and at least three Examiners, at least one of whom will be from another Department, School or Faculty.

The Chairman of the Department, in consultation with the Chairman of the appropriate Committee on Graduate Studies, may request that a thesis be read by an External Examiner.

The candidate's Chief Adviser will attend the examination but may not question the candidate except with the permission of the Chairman. Any other members of the Faculty of Graduate Studies may attend and participate in the examination, but only members of the Examining Board shall vote on the approval of the candidate. To be successful, a candidate must be approved by a majority of the Examining Board.

1972-73 placement examinations will be held at the Faculty of Music on December 18 to December 22, 1972, February 26 to March 2, 1973 and April 23 to April 27, 1973.

MASTER OF SCIENCE IN NURSING (MScN)

PROGRAMS OFFERED, PERIODS OF STUDY

Two graduate programs in nursing are offered. One program leads to the degree Master of Science in Nursing (Administration) in hospital nursing service administration OR public health nursing service administration OR administration of schools of nursing. The other leads to the degree of Master of Science in Nursing (Education) and is intended for not only beginning, but experienced teachers in schools of nursing. The program with a major in administration is two academic years in length. The program with a major in teaching may be one to two academic years in length, dependent on the educational background of the student. With either major, students may elect to study or continue research during the summer months (see section on Nursing under Social Sciences Division). For length of academic year and relevant payment of fees, refer to Regulations Governing Advanced Degrees.

ADMISSION

A. Major in Administration

1. A Bachelor's degree in Nursing
2. An overall B average in undergraduate courses

B. Major in Teaching

Entrance is to the graduate year of the teacher preparation program for graduates with an overall B average, in the year 1971 or later, of either the four-year Basic Baccalaureate program, or the three-year Post R.N. Baccalaureate program of the Faculty of Nursing, The University of Western Ontario, or their equivalent. Other students will be considered on an individual basis and may be required to take the special undergraduate year or part thereof before acceptance into the program with a major in teaching.

Admission of students from countries other than Canada will be considered on an individual basis. Students coming directly from countries other than Canada or the United States may be required to attend summer school to complete at least one course successfully and/or to have a period of planned clinical experience in their area of interest in nursing. Following this, an assessment will be made as to whether the candidate will be admitted to graduate work.

Note: New policies pertinent to admission may become operational prior to the 1973-74 academic year.

ACADEMIC STANDARDS TO BE MAINTAINED

An average of B is required each year. An assessment is made of each candidate's progress at the completion of the special undergraduate year, and no student is

allowed to continue into the graduate year of the program with anything less than a B average without special permission from the Professional Degree Committee (Nursing) of the Faculty of Graduate Studies. Such special permission will be granted only if unusual extenuating circumstances have appeared to affect an otherwise satisfactory record.

If a student fails one course but otherwise maintains an average of B, the matter will be considered by the Professional Degree Committee of the Faculty of Nursing in consultation with the professor(s) of the course. Decisions regarding appropriate alternatives open to the student will be made on an individual basis and will be communicated to the student only after ratification by the Assistant Dean, Faculty of Graduate Studies.

INDIVIDUAL PROGRAMMING, ASSESSMENT, COUNSELLING

Provision is made for counselling with regard to individual program planning previous to students commencing the program and throughout their period of study. It is recognized that part-time students, in particular, require individualized planning of their programs. Selection of all electives must be sanctioned.

Ordinarily, students must complete all courses in the special undergraduate year before any courses in the graduate year are undertaken. Exceptions to this regulation will be made only under very unusual circumstances, on recommendation of the Dean or Coordinator of the Graduate Programs and with ratification by the Assistant Dean, Faculty of Graduate Studies.

It is expected that students will complete the program they select according to the usual arrangement of courses and that all course requirements will be fulfilled within the academic term(s) in which the courses are offered. If an incomplete grade is granted for any course it must be erased at least within the next adjacent term. An earlier date for erasure may be set by the professor responsible for the course.

Experience relevant to courses in the program is planned cooperatively by the professors and students on an individual basis. Experience may be necessary to augment the student's knowledge of the individually selected research topic and for the area in which the student wishes to specialize. Students may be required to complete additional learning experiences (academic or clinical) depending upon their facility in the use of the English language, previous academic studies or nursing experiences. For these reasons, students should not make commitments for employment between the special undergraduate and graduate years until they have consulted with the Dean or the Coordinator of the Graduate Programs, Faculty of Nursing.

Students will receive assessment of progress in individual courses as each term proceeds. Arrangements for counselling regarding their overall progress in the program may be made with the Dean or Coordinator of the Graduate Programs, as appropriate. Such counselling may be initiated by students or faculty members. One group counselling session for full-time students in each year of each program will be scheduled by the Coordinator of Graduate Programs before the termination of Terms 1 and 11. This is designed to elicit student assessment of the program and to discover common problems students may be encountering.

FINANCIAL AID

University Fellowships and Other Awards

The University awards a limited number of graduate fellowships, teaching fellowships, research assistantships, and demonstratorships tenable within the Departments of Arts, Biosciences, Physical Sciences, and Social Sciences. Prospective candidates should direct their inquiries to the Chairman of the Department in which they wish to work.

Scholarships awarded by the University of Western Ontario shall be tenable only at the University, unless the provisions of a particular scholarship state otherwise.

The University reserves the right to modify or cancel scholarship offerings after the date of publication of this Calendar.

NOTE: Many of the university awards are tenable only by Canadian citizens or landed immigrants who have obtained their landed immigrant status before applying for an award. Inquiries as to eligibility for awards ought to be made to the office of the Faculty of Graduate Studies.

Archibald A. Campbell Scholarship in Canadian Literature

A graduate scholarship in Canadian Literature awarded annually to the most outstanding graduate student who is engaged upon a research project in the field of French Canadian Literature. Scholarship is valued at $200.00. Applications should be submitted to the Dean of Graduate Studies of the University of Western Ontario by March 15.

Henry Lewis Caulkins Scholarship

This scholarship was provided from the estate of the late Donald L. Springer and is tenable by a graduate of The University of Western Ontario at the University of Michigan for graduate study in any academic discipline. The value of the scholarship is approximately $2,000 (Canadian). Applications should be submitted to the Dean of Graduate Studies of the University of Western Ontario by March 15.

Ivie Cornish Memorial Fellowship

Graduate Fellowship in History, value up to $2,000 a year. Applications should be submitted to the Chairman, Department of History, not later than March 15. The award may not be made in any one year at the discretion of the Faculty of Graduate Studies.

Sir Arthur Currie Memorial Scholarship

Graduate Fellowship in the Social Sciences, preferably in some branch of Economics, value $500 a year; open to graduates of any Canadian university; tenable at this University unless the winner is a graduate of this University, in which case the award will be tenable at this or any other Canadian or British university designated by the winner. Applications should be submitted to the Dean of Graduate Studies not later than March 15.

Nellie L. Farthing Memorial Fellowship

Graduate Fellowship in the Medical Sciences, value $1,500 per academic year. This Fellowship is available to students engaged in graduate work or medical research. Applications should be submitted to the Dean of Graduate Studies no later than March 15.

McIntosh Scholarships in Geography

Two scholarships of approximately $300 each are awarded annually for high academic achievement to graduate students in the Department of Geography. These scholarships will be given to graduates in Honors Geography at The University of Western Ontario or to students who have completed graduate degrees with distinction in the Department of Geography of The University of Western Ontario.

L. G. Soderman Award

The L. G. Soderman Award, established in memory of the late Professor L. G. Soderman, distinguished Canadian Geotechnical Engineer, is awarded to an engineer to assist him in pursuing graduate studies in civil engineering at The University of Western Ontario. Preference is given to those entering a Geotechnical Engineering program. The award, in the amount of $400 per annum, will normally be held for one year, but may, under special circumstances, be extended for a second year. The announcement of the award will be made during the spring or summer semester when graduate applications are being reviewed.

Charles A. Southworth Memorial in Paleontology

The Charles A. Southworth Memorial in Paleontology is awarded to an undergraduate or graduate student at the discretion of the Geology Department, provided by Mrs. Harriet B. Woolfenden, Sedona, Arizona. Award - Book(s).

J. A. F. Stevenson Memorial Scholarship

In commemoration of the great contribution made to the scientific and general academic life of Canada by Dr. Stevenson (1918-1971), former Dean of the Faculty of Graduate Studies, the Board of Governors established this scholarship valued at $1,000 to be awarded annually to a student in the Faculty of Graduate Studies. Applications should be submitted to the Dean of Graduate Studies not later than March 15. The award may not be made in any one year at the discretion of the Faculty of Graduate Studies.

United Empire Scholarship

One scholarship up to $300, awarded annually. Purpose of the scholarship shall be to further research and study in the local history of Southwestern Ontario.

To be endowed by the Lloyd C. A. Hodgins Estate.

Eligibility: graduate students in a MA or PhD program in the Social Science Division of the Faculty of Graduate Studies. Application should be made to the Dean of Graduate Studies not later than March 15.

Fellowships Awarded by Government Agencies

CANADA COUNCIL GRANTS

The Canada Council offers fellowships and grants in the Social Sciences and Humanities and a variety of assistance to professional artists.

Among Council programs of aid are: Doctoral fellowships, Leave fellowships, Research grants, Arts awards, Arts bursaries, Short term grants.

Brochures giving detailed information, including deadlines for annual competitions, on these and other Canada Council programs of aid are usually available in the Faculty of Graduate Studies and may be obtained from the Canada Council, Box 1047, Ottawa K1P 5V8, Ontario, as follows: Awards Service (for annual competition), the Social Sciences and Humanities Division (for research grants), Arts Division (for short term grants).

CANADIAN TRANSPORT COMMISSION FELLOWSHIPS

The Canadian Transport Commission plans to award a limited number of fellowships for graduate study in any discipline related to transportation leading to an advanced degree for which there is a thesis requirement. Candidates must be Canadian citizens or landed immigrants. Stipends are $3,600 for students proceeding to a master's degree and $4,500 for students proceeding to a doctoral degree. (Successful applicants with one or more dependent children will receive an additional $1,000.) A travel allowance will also be paid.

Application forms may be obtained from the Executive Assistant, Research Branch, Canadian Transport Commission, Ottawa 4, Ontario. Completed applications must be forwarded by the Chairman of the Department in which the applicant intends to study, not later than March 15.

CENTRAL MORTGAGE AND HOUSING CORPORATION GRADUATE FELLOWSHIPS

Central Mortgage and Housing Corporation offers fellowships for graduate study in various fields or urban and regional affairs in approved Canadian universities and elsewhere. Candidates must be Canadian citizens or landed immigrants in Canada. Stipends are $3,000 plus tuition fees for students proceeding to a master's degree and $4,000 plus tuition fees for students beyond the master's level proceeding to a doctoral degree. (Successful applicants receive an additional $500 for each dependent child.)

Application forms available from the Administrator, Advisory Group, Central Mortgage and Housing Corporation, Ottawa K1A 0P7, Ontario, must be submitted through the appropriate department of the university in which the student proposes to enroll. Applications for study at Canadian universities must be sent to CMHC by March 1; applications for study at universities outside Canada by April 15.

COMMONWEALTH SCHOLARSHIP AND FELLOWSHIP PLAN

Under a Plan drawn up at a conference in Oxford in 1959, each participating country of the Commonwealth offers a number of scholarships to students from other Commonwealth countries. These scholarships are mainly for graduate study and are tenable in the country making the offer. Awards are normally for two years and cover travelling, tuition fees, other university fees and a living allowance.

Details from the relevant government office in applicant's own country or the Canadian Commonwealth Scholarship and Fellowship Committee, c/o Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4, Ontario.

MEDICAL RESEARCH COUNCIL

A limited number of Studentships valued at $3,800 per annum are offered by the Medical Research Council to highly qualified graduate students of the pre-doctoral level who are undertaking full-time training and research leading to a higher degree under the supervision of members of departments of medical schools. Applications received by 1 January are considered in March; the closing date for those to be considered in June is 1 April.

Graduate students holding a doctorate in Medicine, Dentistry or Veterinary Medicine may compete for Medical Research Council Fellowships which range in value from $5,300 - $9,500 depending upon qualifications. Closing dates for application are 1 January, 15 April and 1 October.

All communications concerning the Studentships and Fellowships should be addressed to: The Secretary, Medical Research Council, Ottawa K1A 0W9, Ontario, Canada.

MILITARY SERVICE SCHOLARSHIPS

The Department of National Defence sponsors programs of university education for young men who have the potential to become officers in the Canadian Armed Forces. The programs include Regular Officer Training Plan, Medical Officer Training Plan, Dental Officer Training Plan, and Reserve Officer University Training Plan.

Applicants must be Canadian citizens. For full information contact: The University Liaison Officer, Canadian Forces Base Toronto, Downsview, Ontario.

NATIONAL RESEARCH COUNCIL POSTGRADUATE SCHOLARSHIPS AND BURSARIES

Each year the National Research Council offers a number of postgraduate awards of different types to assist students in undertaking graduate study and research leading to advanced degrees. These awards are open to men and women on equal terms and are awarded on the basis of high scholastic achievement and evidence of capacity to do research.

Types of Awards Available

1. Postgraduate Scholarships

Postgraduate Scholarships valued at $4,050 for 12 months, plus a travel grant if required are awarded in two categories:

(a) for the first year of postgraduate study in Canada, in which case the award is not renewable, but recipients may apply for a scholarship mentioned in (b) below for a second and succeeding years of graduate studies.

(b) for second or subsequent years of postgraduate study in Canada, renewable on the basis of certified reports of satisfactory progress. Only two such renewals may be granted.

2. Bursaries

Bursaries are awarded on the recommendation of a university. The qualifications are the same as for Postgraduate Scholarships. These awards are valued at $3,450 for 12 months. They are not renewable but may be awarded for each subsequent year of graduate study. A student may receive a maximum of 4 awards at the predoctorate level consisting of any combination of Bursaries and Postgraduate Scholarships.

Conditions of Eligibility Applying to All NRC Awards

The foregoing awards may be granted for study and research in the field of agriculture, biology, chemistry, physics, geology, physical geography, mathematics, engineering, experimental psychology, science education and the history and philosophy of science.

At the time of application, an applicant must be either a Canadian citizen or a landed immigrant. Tenure abroad will not be granted to students who are landed immigrants unless they have received a degree in science from a Canadian university.

Additional information on NRC awards may be obtained from the Office of the Dean of Graduate Studies, or from The Scholarships Officer, Awards Office, National Research Council of Canada, Ottawa, K1A 0R6, Ontario.

Application forms are made available through Departmental Offices in mid-October. The deadline for return of complete applications to the Chairman of the appropriate Departments is usually late November.

DEPARTMENT OF NATIONAL DEFENCE SCHOLARSHIPS

The Department of National Defence has established three scholarships for military and strategic studies of interest to Canada and may comprise work in one or more of the following areas: National and International aspects of security, studies of strategic theory, alliances and United Nations, civil-military relations. Candidates must be Canadian citizens. Stipends are $4,000 plus academic fees.

Closing date for receipt of applications March 1. Further information may be obtained from: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa, Ontario.

Ontario Graduate Fellowships

The Government of the Province of Ontario provides annually a number of postgraduate awards known as "The Ontario Graduate Fellowships," tenable at Ontario universities only, for students who plan a career in university and college teaching.

The awards are open only to graduates of, or final year students in, an Honors Bachelor of Arts or Bachelor of Science degree program from an Ontario University, or the equivalent, with at least second class honor standing. Special students, non-degree students and students engaged in prerequisite year or make-up studies are not eligible. A student must have applied for admission to a department as a full-time student at the time he completes his Fellowship application, or be registered in the Faculty of Graduate Studies.

The awards are intended primarily for students who are Canadian citizens or landed immigrants and who are residents of Ontario at the time of application. Application for landed immigrant status must have been made before submitting an Ontario Graduate Fellowship application, and no award will be offered until a certificate showing landed immigrant status is received in the Office of the Faculty of Graduate Studies. Consideration will be given to awarding a limited number of Fellowships to students not now residents of Ontario. All applicants must give a clear indication that they have a serious interest in pursuing careers in university or college teaching in Ontario upon completion of their graduate studies. Students studying in Canada on student visas are not eligible under this program.

For 1973-74 Fellowships are available at the University of Western Ontario in the following departments:

Arts and Social Science

Classics
Economics
English
French
Geography
German
History
Library Science
Music (MA only)
Nursing Education
Philosophy
Political Science
Psychology
Sociology
Spanish

Science and Mathematics

Anatomy
Applied Mathematics
Astronomy
Bacteriology
Biochemistry
Biophysics
Chemistry
Computer Science
Engineering Science
Geology
Geophysics
Mathematics
Pharmacology
Physics
Physiology
Plant Sciences (Botany)
Zoology

A Fellow will receive the amount of $1,500 for one "academic year" (which in this case means September to April). A *third term Supplement* ($750) may be awarded for full time study during the Spring term provided it is study towards the degree for which the academic Fellowship is held or an advanced degree beyond that level. A Spring term Supplement may not be held independently, but must be attached to a two-term Academic Award. The maximum amount a student may receive through the Ontario Graduate Fellowship Program is $3,000 to the Master's degree level and $7,750 to the Doctor of Philosophy degree level. Partial awards will not be made; if a new award would bring the total assistance to a level above the limit, no award will be made.

A Fellow must be registered as a full-time graduate student during the tenure of his award. A Fellow may not hold two major awards. He may accept a part-time assistantship or demonstratorship that does not interfere with the Fellow's status as a full-time graduate student and provided the total amount paid to any Fellow within a period of twelve months concurrent with the holding of the Fellowship shall not exceed, including the Ontario Graduate Fellowship: $4,500 at the Master's level, and $5,000 at the Doctor of Philosophy level.

Information concerning closing dates for application may be obtained from the Faculty of Graduate Studies.

THE QUEEN ELIZABETH II ONTARIO SCHOLARSHIPS

The Government of the Province of Ontario makes available a number of scholarships valued at $5,000 each to candidates nearing the completion of the PhD degree in the humanities, social sciences and mathematics at Ontario universities. Preference will be given to candidates who are residents of Ontario.

Applications are available at the office of the Faculty of Graduate Studies and are submitted to the Dean of the Faculty of Graduate Studies before December 1.

THE SIR JOHN A. MACDONALD GRADUATE FELLOWSHIP IN CANADIAN HISTORY

The Government of the Province of Ontario makes available each year one Fellowship of $4,000. The award is tenable for two years, making the maximum value of each award $8,000. This Fellowship is tenable at an Ontario university by a Canadian citizen resident of Ontario, for graduate studies with a major emphasis on Canadian history.

Application forms (available at the Faculty of Graduate Studies) must be submitted to the Secretary, Committee of Selection, Sir John A. Macdonald Graduate Fellowship in Canadian History, Department of University Affairs, Mowat Block, Parliament Buildings, Toronto 182, Ontario before January 29.

Fellowships Awarded by Other Outside Agencies

BELL CANADA CENTENNIAL FELLOWSHIPS

The Bell Telephone Company of Canada offers up to eight graduate fellowships of $5,000 ($3,500 to the Fellow, and $1,500 to the University) to candidates who are proceeding towards a Master's degree. Preference will be given to subject areas relevant to the scientific, political, social or economic needs of Canada. Candidates must be Canadian citizens or have held landed immigrant status for one year prior to submitting application, and must be graduates of a university or college with standards accepted by the Association of Universities and Colleges of Canada. Fellowships are tenable at any Canadian university or college which is a member, or affiliated to a member, of the A.U.C.C.

Application forms may be obtained from the Director of Student Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4, Ontario. Final date for receipt of applications March 1.

THE CANADIAN FEDERATION OF UNIVERSITY WOMEN FELLOWSHIPS

Margaret McWilliams Travelling Fellowship $3,500

Professional Fellowship $2,500

(Library Science, Social Work, Education or similar professional School.)

Further information may be obtained from: Miss Christine Irvine, Chairman, Fellowships Committee, Canadian Federation of University Women, Shirreff Hall, Dalhousie University, Halifax, Nova Scotia, Canada.

CHEMCELL LIMITED FELLOWSHIPS

Six awards are made annually to Canadian residents who are graduates of recognized Canadian universities. The awards are valued at $3,500 ($2,500 to the Fellow and $1,000 to the relevant department) and are for graduate study in Chemistry, Engineering, Physics, or Mathematics.

Application forms from the Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4, Ontario, must be returned by March 1.

CHEVRON STANDARD LIMITED GRADUATE FELLOWSHIP

Chevron Standard Limited offers annually five graduate fellowships which are tenable in selected Canadian universities to students proceeding to a graduate degree in one of the fields of Geology, Geophysics or Petroleum Engineering. The fellowships are tenable for one year in the amount of $1,000 each, plus a grant of $500 to the university department concerned. The awards are primarily intended to assist male Canadian students showing an interest in Earth Science related to oil exploration and to students who are interested in petroleum development and production. Application forms which list the universities in which the fellowships are tenable may be obtained from the Student Awards Officer, the department head, or by writing directly to the Secretary, Aids to Education Committee, Chevron Standard Limited, 400 Fifth Avenue S.W., Calgary 1, Alberta, and must be submitted prior to March 31 of the year in which the graduate program is to be undertaken.

GULF OIL CANADA LIMITED GRADUATE FELLOWSHIPS

Nine awards, valued at $4,500 ($3,500 to be paid to the successful candidate and $1,000 to the receiving university) will be made each year to candidates in engineering, chemistry, physics, mathematics and computer sciences, geology, geophysics and any related sciences, business and management studies and ecologically-oriented studies, who are Canadian citizens or who have held landed immigrant status for one year prior to submitting the application. Candidates must be graduates of a Canadian university or college which is a member, or affiliated to a member, of the Association of Universities and Colleges of Canada.

Fellowships are tenable at any of the above universities. Closing date for receipt of applications is March 1. Application forms may be obtained from: Director of Awards, Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4, Ontario.

IMPERIAL OIL FELLOWSHIPS

Imperial Oil Limited in 1946 established for annual competition Graduate Research Fellowships, now five in number and having a potential value of $9,000 ($3,000 a year for a maximum of three years). No restriction is placed on the

amount of similar assistance held concurrently. Successful applicants may attend any approved university.

The fellowships are open to graduates of any approved Canadian university and are offered for research leading to a Doctor's degree in the fields of pure and applied natural and/or exact sciences, including mathematics (3 fellowships) and social sciences and humanities (2 fellowships.) Nominations for the fellowships are made by Canadian universities, such nominations to be received by the Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto 7, not later than February 1 of each year.

THE INTERNATIONAL NICKEL GRADUATE RESEARCH FELLOWSHIPS

The International Nickel Company of Canada has established a number of graduate research fellowships in engineering and science for annual competition of Canadian universities. Each award has a possible tenure of three years, and is valued at $4,500 annually of which $3,800 is payable to the Fellow and $700 to the department for materials and equipment to support the research.

The Fellowships are open to students who are proceeding to either the Master's or Doctor's degree and whose research will be concerned with basic science intrinsically related to the following specializations: Chemistry or Physics of Metals or Minerals, Geology (including Geophysics and Geochemistry), Metallurgy (both Physical and Extractive), Mineral Processing, and Mining.

Applications are made in letter form by the Candidate's supervising professor to The Administrator of Educational Affairs, The International Nickel Company of Canada Limited, P.O. Box 44, Toronto-Dominion Centre, Toronto 111, Ontario, prior to January 15. Not more than one application (either new or renewal) will be considered annually from any one department, and not more than three Fellowships will be tenable annually at any one university.

SHASTRI INDO-CANADIAN FELLOWSHIPS

Pre-doctoral fellowships for research in India are offered in the humanities and social sciences to Students who are registered in the PhD programs of recognized Canadian institutions of higher learning. These fellowships will normally be for a period of twelve months with a possibility of extension for a period not exceeding twelve months. Maximum amount of each fellowship will be the Rupee equivalent of $6,000 for a twelve month period. A fellowship can be used only in India. Dollar expenses must therefore be obtained by a fellow from other sources. The deadline for applications is October 1.

Apply to: President, Shastri Indo-Canadian Institute, McGill University, 3437 Peel Street, Montreal 2, P.Q.

SHELL CANADA FELLOWSHIPS IN ENGINEERING

Shell Canada offers a number of fellowships for postgraduate study in the following Engineering fields: Chemical, Civil, Electrical, Geological, Mechanical, Metallurgical, Mining and Petroleum Engineering, and Engineering Physics. Each fellowship is valued at $5,000 annually ($4,000 for the student and $1,000 grant in aid to the University), with an additional $500 to married students, and is tenable for up to three years at any Canadian University with a recognized graduate faculty and engineering research facilities. Candidates must be Canadian citizens or landed immigrants, and have completed at least one year of graduate study and research leading to a doctorate in Canada.

Applications from the Dean of Graduate Studies must be submitted not later than January 15 to: The Selection Committee, Shell Canada Fellowships in Engineering, c/o National Research Council, Ottawa, Ontario.

THE STEEL COMPANY OF CANADA LIMITED
GRADUATE RESEARCH FELLOWSHIPS IN METALLURGY

Four fellowships, each of the value of $5,000, of which $4,000 will be awarded to the successful candidate and $1,000 to the department of the University in which research will be carried out. Renewal is possible, but the award may not be held for more than three years. Candidates must be Canadian citizens or have held landed immigrant status for one year prior to submitting application. Candidates must be graduates of a Canadian University or College which is a member or affiliate to a member of the Association of Universities and Colleges of Canada. Fellowships are tenable at Canadian universities that have a qualifying course in Metallurgical Research.

Academic Prizes

Detwiler Award

This award is recommended by the Department of Zoology to be awarded annually at Fall Convocation to the most meritorious graduate student obtaining a PhD or MSc in Zoology during the year based on the merit of the candidate's thesis and final oral examination.

The award may not be made in any one year on the decision of the judges.

Collip Medal for Graduate Students

A medal to be awarded at Spring Convocation to the most meritorious graduate student obtaining a PhD degree in the Medical Sciences during the past year.

The award shall be made on the merit of the candidate's thesis, final oral examination and ability shown during his graduate training.

The award may not be made in any one year on the decision of the judges.

Further Information

Information on extra-mural awards, fellowships and scholarships for master's and doctoral candidates, researchers, and post-doctoral students is available at the Office of the Faculty of Graduate Studies, and is published in the Western News and SOGS bulletin. A reference library of material on graduate education and an extensive collection of graduate calendars may be used by students, as well.

Prospective graduate students should consult the biennial publication of the Dominion Bureau of Statistics, Education Division, Higher Education Section, entitled: **Awards for Graduate Study and Research.** This contains information concerning all such awards, their terms, dates and method of application. Students should also consult the publication entitled: **Fellowships and Scholarships offered by Private Donors and Foreign Governments for Canadian Students,** obtainable from the Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4.

Most graduate awards require the applicant to provide assurance that, if successful, he will be accepted by the university. Candidates should obtain such assurance by direct communication with the Chairman of the Department in which they wish to work.

Student Employment, Loans and Grants

Employment

The student placement service, located in Room 24, University Community Centre, offers a listing service providing details of numerous current, summer and part-time employment possibilities for which students may submit applications directly.

Ontario Student Awards

These awards, which are a combination of Canada Student Loan and Province of Ontario Grant, are available to all full-time students registered at the university who are residents of Ontario, providing they can demonstrate financial need. There is no "academic average" requirement. Application forms, which are obtainable at all post secondary institutions, should be completed in duplicate and sent to the Financial Aid Office, The University of Western Ontario. Completion of this form automatically secures consideration for the majority of awards administered by the University. Further information may be obtained from the Financial Aid Office, Room 32, University Community Centre, The University of Western Ontario, London, Canada.

LIBRARY FACILITIES

Robert Lee, PhD, Chief Librarian

Fundamental to all graduate research is the Library. The General Library of the University is housed in The D. B. Weldon Library Building. In the Periodical Room of the same building are the current issues of periodicals in the Arts and Social Sciences. The Bibliographical Centre, which is of particular value to graduate students, is also in this building. There are, in addition, excellent collections of books and periodicals, of value in graduate study, covering specific subjects in the following buildings: Business Administration, Engineering Science, Health Sciences Centre, Law, Natural Sciences Centre, College of Music, Althouse College of Education and School of Library and Information Science. A collection of maps, both topographic and topical, covering Canada and other parts of the world is housed in Middlesex College. The collection of the University Library System is composed of more than 950,000 volumes of monographs and bound periodicals, 11,000 current periodicals and newspaper titles, 210,000 documents, 2150 catalogued thesis titles, and a further 900,000 microforms, tapes, recordings and other special materials, for a total over 2 million items.

Twenty-six microfilm and fifteen microcard readers are provided in view of the increased use being made of material in microphotographic form. Three of the microfilm readers are also printers; they are recently designed pieces of equipment from which photographic copies of microfilm can be made.

In cases where the University does not possess certain books or journals, and when these cannot be purchased either in the original format or in microphotographic form, it is usually possible to borrow them on Interlibrary Loan from a Canadian or United States library. The use of Interlibrary loans is restricted to faculty and graduate students. The Committee of Presidents of Universities of Ontario on the recommendation of the Ontario Council of University Librarians has set up an inter-university library transit system. Five station wagons carry books between the twelve universities in southern Ontario five days a week. The system has greatly expedited the transfer of research material between the Ontario universities and major federal libraries in Ottawa. Postal charges of more than $1.00 per transaction must be paid by the borrower. The lending library dictates the conditions under which the borrowed material may be used and these conditions must be rigidly adhered to. For example, frequently the borrowed book

must be used within the library. In the General Library and other libraries referred to above there are a number of modern copying machines by means of which material may be reproduced at cost to the borrower, who then has the advantage of possessing a permanent record.

A graduate student registered in any Ontario university may visit any other university library and use its resources. In order to do so the graduate student is required to carry an inter-university library visiting request authorized by his adviser and recommended by the chief librarian of the university. Application forms may be obtained in the Office (Room 106) at the General Library.

The collection in The D. B. Weldon Library will be primarily for Arts and Social Science faculties. Facilities will generally be more accessible than previously.

RESEARCH FACILITIES

Cancer Research Laboratory

J. A. McCarter, PhD, Director

The Cancer Research Laboratory was established by a grant from the Ontario Division of the Canadian Cancer Society, and is maintained chiefly by annual grants from the National Cancer Institute of Canada. It is housed in its own building on the main university campus. Activities are centred on a variety of problems in basic cancer research. Senior members of the Laboratory hold joint appointments in appropriate departments of the Faculty of Medicine, and participate in the teaching of undergraduate and graduate students.

Graduate students may proceed to MSc and PhD degrees in the Laboratory receiving their advanced degree in whatever discipline their supervisor has his joint University appointment. These include at the present time Bacteriology and Immunology, and Biochemistry.

Centre for Radio Science

P. A. Forsyth, PhD, Director

The University of Western Ontario has developed a particular competence in the scientific aspects of the generation, propagation and detection of radio waves. The Centre for Radio Science is not an instructional unit in the University, but does provide facilities for graduate research in many areas of radio science. In order to make use of these facilities a graduate student must be registered in an appropriate Department or Faculty of the University and be supervised by a member or associate member of the Centre. The graduate courses and the student's degree program are administered by the Department or Faculty in which he is registered. Courses appropriate to graduate work in Radio Science are given in a number of departments in the Faculty of Science and in the Faculty of Engineering Science at The University of Western Ontario.

Facilities are now available for a variety of researchs, including the generation and detection of radio waves ranging down to submillimeter wavelengths, laser spectroscopy, scattering and absorption of laser radiation in the infrared and optical regions by atmospheric gases and aerosols with applications to air pollution. Quantum electronics, quasi-optical techniques interaction of radio waves with solids, gases, plasmas and beams of charged particles, the exploration of all levels of the earth's atmosphere, the sun's atmosphere and the inter-planetary medium, using groundbased, rocket-borne and satellite-borne instruments.

Co-operative research arrangements exist with several universities in Ontario.

Inter-American Studies Group

N. L. Nicholson, PhD, Chairman

J. C. M. Ogelsby, PhD, Secretary

This group is a unit within the Faculty of Graduate Studies and is responsible to the Dean of Graduate Studies. Its purpose is to encourage and facilitate a cross-disciplinary and sometimes a cross-faculty approach to inter-American studies in close co-operation with existing faculties and departments. It does so by such means as promoting closer liaison between departments and faculties, assisting in building up the resources of the library and in general by any other method approved from time to time by the Graduate Dean and Faculty.

Canadian-American Studies — The University of Western Ontario has long been concerned with Canadian-American studies. It began offering a course in United States history, the first in Canada, in 1909; and it has given special attention to and emphasized work on North American (United States and Canadian) literature, including French-Canadian literature, since 1934. Its Department of Geography is particularly concerned with regional studies of the Great Lakes area in international terms; and its Departments of Economics, Political Science, and Sociology have a strong North American orientation.

Latin American Studies — Since 1936 the University has extended the scope of its interest in Canadian-American affairs to include Latin America, whose history has been taught since 1942 and whose literature has been taught since the late 1940's. Specialists in Latin America have been appointed in Geography, History, Political Science, and Sociology, and the Department of Economics has begun offering work on developing countries including Latin America. The Department of Spanish and Italian offers courses in the Spanish and Portuguese languages and Latin American Literature. It is now possible for a student interested in Latin America to do graduate work in a specific discipline and to include course work from other departments.

Further information concerning programs in the Inter-American field may be obtained from the Chairman or the Secretary of the Group.

The Ontario Cooperative Programme in Latin

Douglas Hull and Barry Munn, PhD - Members of the Executive Committee from the University of Western Ontario.

The Ontario Cooperative Programme in Latin American and Caribbean Studies (OCPLACS) is a consortium of seven provincial universities with special interests in this field. OCPLACS sponsors four seminars at member universities during the course of the academic year, and promotes the interchange of ideas and programmes at faculty and graduate student levels.

Inter-University Consortium for Political Research

T. G. Harvey, I.C.P.R. Official Representative

The University of Western Ontario is an Associate Member of the Inter-University Consortium for Political Research (I.C.P.R.). According to the I.C.P.R. "Memorandum of Organization", the I.C.P.R.". . . is conceived as a partnership between a group of universities. . .and the Survey Research Center of the University of Michigan. . .The purpose of the Consortium is to promote the conduct of research on selected phases of the political process. It is expected that both partners will contribute to the success of the Consortium and that each will benefit from the association." In order to realize its aims, the I.C.P.R. offers summer seminars in research design, data analysis, mathematical politics, and special selected topics of general interest, serves as a repository for a wide variety

of data, and provides technical services. Seminars, data, and technical services are available at little or no charge to faculty and students of member universities.

Those interested in further information on the I.C.P.R. should contact either their representative on the Committee or the I.C.P.R. Official Representative.

Urban and Regional Development Studies

E. A. Beecroft, PhD, Director

The University provides facilities for interdisciplinary research by its faculty and students in the field of urban and regional development. Through the Urban and Regional Development Studies Group, a unit of the Faculty of Graduate Studies, it enables the student seeking a Master's or Doctor's degree to undertake a program of courses and research projects in a number of departments and/or faculties. While each student is expected to take his degree in his basic discipline, arrangements are made, with the approval of the academic units concerned, for a program that includes work in other disciplines. The interests and proposals of each student are considered in defining his program.

Such interdisciplinary programs are intended for students desiring to prepare for research, teaching, administration or planning in the field of urban and regional development.

A number of students already engaged in such programs at the University are receiving assistantships and fellowships from the University and from the Canada Council, Central Mortgage and Housing Corporation, and other sources.

For further information, the student should write to the Director, Urban and Regional Development Studies.

GENERAL INFORMATION

University Health Services

Physical Examination

A physical examination by a practising physician is required of all students who are enrolling in this University for the first time as intramural students in the Winter Term. The submission of this report on the *pro forma* supplied is the responsibility of the incoming student prior to registration.

Health Service on Campus

The Health Service Clinic is in the University Community Centre where students, while at University, may consult the University physicians for general medical care. A counselling service for students with personal problems is also available.

Testing for Tuberculosis

All students must take a skin test for tuberculosis at the time arranged during the school year. Students showing a positive reaction must have a chest x-ray which is to be repeated each year. No further skin testing will be carried out on previous known positives. Students showing a negative reaction are to have the skin test repeated each year.

ONTARIO HEALTH INSURANCE PLAN

Health insurance is NOT provided by the University. Health insurance offered by the Ontario Health Insurance Plan is the only form of basic hospital insurance permitted in Ontario. It is the student's responsibility to obtain the necessary coverage under OHIP.

Students from other provinces who already have health insurance are urged to ascertain, before coming to Ontario, if their policies will be honored in Ontario and for how long.

Students from outside Canada should apply for Ontario Health Insurance as soon as possible after arriving in Ontario.

Students are reminded that if they do not hold hospital services insurance and are required, by reason of accident or illness, to enter hospital, they may incur charges of more than $80.00 per day.

Ontario Residents

Students under the age of 21 should normally be covered under their parents' coverage. If they do not qualify as dependents they may submit an application for coverage. If you have just turned twenty-one years of age and apply within the month following your twenty-first birthday OHIP protection will begin on the first day of the month following the date you reach 21.

If you are covered as an eligible dependent on someone else's contract—and you apply within the month following your 21st birthday—there will be no break in your OHIP protection: your own contract will be effective the first day of the month following your 21st birthday.

Premium Assistance is available immediately to students over the age of 21 years who have been residents of Ontario for at least 12 consecutive months prior to the date of their application. Students from outside Canada must complete the 12 months residency requirement before becoming eligible for Premium Assistance. Eligibility for Premium Assistance is based on the student's estimated total taxable income for the current year. Students under 21, in addition to the above, must submit a signed statement stating, that to their knowledge they are not being declared as dependents for Income Tax purposes, in order to get premium assistance.

Students may also apply for Temporary Assistance if they are unable to pay their premiums because of illness, disability, or unemployment. Applications for this assistance may be obtained at the nearest OHIP office, at the student Health Service, or by writing to: Health Insurance Registration Board, Medical Services Administration Section, 2195 Yonge Street, TORONTO 7, Ontario.

Canadians From Outside Ontario

Students who are normally residents of other provinces in Canada should obtain their medical coverage in the province of their residency, since that insurance usually costs less than does Ontario's.

However, if you intend to remain an Ontario resident, you must apply for OHIP coverage by the end of the month following the month of arrival and your coverage will begin on the first day of the third month following arrival.

Students From Outside Canada

Students coming from outside Canada may make application for OHIP coverage. Protection will begin on the first day of the month following application, provided application is made within **90 days** of arrival. Otherwise, the normal 3 months waiting period will apply.

The Student Health Service in the University Community Centre, has application forms and is prepared to assist those students who wish to make application for OHIP.

Society of Graduate Students (SOGS)

The Society of Graduate Students is the recognized organization for all full-time graduate students, excluding those in the MBA programs. The Society's aims are to give graduate students a recognized organization to voice their opinions and to promote friendship and co-operation among members, and these aims are fulfilled through meetings, athletics, cultural and social activities, "Happy Hour" (SOGS Pub), publications and a host of other various activities. These services are provided in collaboration with the University Students Council.

SOGS has representatives or channels of communication in almost all areas of the University including representatives to the University Senate and to the Council of the Faculty of Graduate Studies and is able to ensure that the interests of graduate students are protected. The Society is governed by a Council consisting of the Executive Officers and elected representatives from all departments. The SOGS President is elected by a campus-wide ballot of graduate students in March of each year, other officers are elected by Council from the total membership.

Office of International Education

The Office of International Education was established by the Senate in December, 1968, to facilitate the involvement of faculty, students, and the London community in international development and cross-cultural programs.

More specifically, the Office provides assistance to students who are engaged in development or cross-cultural projects as well as providing information on travel and study programs abroad.

The Office has developed a Cross-Cultural Learner Centre which is located at Westminster College. The Centre contains an extensive collection of films, slides, tapes, books and periodicals related to Africa. A unique feature of the Centre is the computer information retrieval system which enables the user to locate specific information related to his topic. This facility is available for use by anyone interested.

SUMMARY OF REGISTRATION - 1972-73

Arts	226
Biosciences	335
Physical Sciences	364
Social Sciences	1009
	1934

DEGREES CONFERRED - 1972

PhD	71
MA	181
MBA	190
MEng	18
MESc	20
MLS	151
MSc	61
MScN	15
MClSc	0
	707

DEPARTMENT and GRADUATE DEGREE PROGRAMS

Introduction

The courses of instruction available in the various Departments, Divisions, Schools, and Faculties follow.

Not all courses are offered every year and their content may, at the discretion of the instructor, be modified for certain individuals. For additional details and preliminary enquiries about graduate work, students are urged to communicate with the Department concerned.

The Council of the Faculty of Graduate Studies reserves the right to withdraw any course or subject listed in this calendar.

The courses of study listed in this calendar are subject to the restrictions of timetable.

ANAESTHESIA

Professor:
Spoerel, W. E., MD Frankfurt-on-Main. Head of Dept.
Associate Professors:
Webster, A. C., BSc, MB, ChB Leeds
MacDonald, W. B., MD Sask.
Clinical Associate Professors:
Aitken, R. R., MD UWO
Keeri-Szanto, M., MD Budapest
Assistant Professor:
Sellery, G. R., MD Toronto

Graduates in Medicine who have served one year of rotating internship in an approved hospital may apply for a three year course of training in Anaesthesia in a plan using the facilities of University Hospital, Victoria Hospital, St. Joseph's Hospital and Westminster Hospital. This training is fully approved by the Royal College of Physicians and Surgeons of Canada.

A fourth year of postgraduate training is required for Certification and Fellowship in the Royal College of Physicians and Surgeons of Canada. This additional year may be spent in full-time research in Anaesthesia or in one of the Basic Science Departments. Such training is designed for those wishing to qualify for the degree of Master of Clinical Science (MC1Sc).

The main research interests of the Department are the development and evaluation of techniques of clinical anaesthesia, the study of problems in the care for critically ill patients, the treatment of respiratory failure, the evaluation and improvement of resuscitation techniques and the management of pain problems.

ANATOMY

MEDICAL SCIENCES CENTRE, Room 472

Professors:

Barr, M. L., OC, BA, MSc, MD UWO; LLD Queen's, Toronto, Alberta and Dalhousie; Dr med (hc) Basel; FRCP(C), FACP, FRCOG, FRSC, FRS

Buck, R. C., MSc, MD UWO; PhD London

Montemurro, D. G., BA, MSc, PhD UWO, Chairman of the Department

Associate Professors:

Donisch, E. W. K. F., MD Bonn; MSc UWO

Gwinnett, A. J., LDS, RCS (Eng); BDS Birmingham; PhD Bristol

Gwyn, D. G., MRCS (Eng); LRCP, MBBS London; PhD Birmingham

Shaver, Evelyn L., BSc, MSc, PhD UWO

Singh, R. P., BA, MSc, PhD UWO

Wilson, A. S., MB, ChB, MD Glasgow

Associate Professor of Human Genetics:

Soltan, H. C., BA, PhD Toronto; MD UWO

Assistant Professors:

Altmann, G. G., BSc Dalhousie; MSc, PhD McGill

Flumerfelt, B. A., BSc Sir George Williams; MSc McGill; PhD Cambridge

Gammal, E. B., MB, BCh Cairo; PhD UWO

Sergovich, F. R., BA McMaster; PhD UWO

Honorary Lecturers:

Robinow, C. F., MD Hamburg; FRSC

Walden, D. B., BA Wesleyan; MSc, PhD Cornell

The Department of Anatomy accepts qualified degrees of MSc and PhD, as well as those not proceeding to a degree. Applicants for admission may have a background in either the Biological or Medical Sciences.

For advanced training of the professional anatomist the Department offers excellent facilities in the various branches of anatomical science. The current research interests of members of the Department include the following: histology, cytology, cytogenetics, neuroanatomy, reproductive biology, electron microscopy, tissue culture, cancer research, electromyography and certain aspects of gross anatomy. Graduate students may carry out their research projects in one of these fields if a vacancy exists.

Some medical graduates spend a year or more of their Fellowship training period on a research project in the Department, proceeding, if they wish, to the MSc degree. Other medical graduates, seeking an opportunity for intensive review of gross anatomy as part of their training in surgery, study in the Department, and act as demonstrators.

While the emphasis in the graduate program is on research, students proceeding to a degree are required to take courses selected with the advice of the supervisor and the Chairman of the Department. This part of the program is designed to provide a sound knowledge of various branches of anatomy, together with some insight into ancillary sciences. Students taking the PhD will be expected to take a departmental comprehensive examination before the end of their second year in two branches of anatomical science, i.e. two of: Gross Anatomy, Dental Gross Anatomy, Histology and Cytology, Neuroanatomy, Developmental Anatomy, Cytogenetics.

Applications for admission should, in the first instance, be made to the Chairman of the Department. Literature describing the research activity of the Department will be sent on request.

COURSES

500. Histology.
510. Current Topics in Anatomy.
530. Medical Genetics.
531. Medical Histology.
532. Neurological Science (Medical).
533. Medical Neuroanatomy.
534. Medical Gross Anatomy and Embryology.
535. Dental Gross Anatomy and Embryology.
536. Dental and Oral Histology.
560. Gross Anatomy, Regional and Systemic.
561. Systemic Gross Anatomy.
562. Cytogenetics.
563. Embryology.
564. Neuroanatomy.
590. MSc Thesis.
661. Cell Structure.
690. PhD Thesis.

APPLIED MATHEMATICS

ENGINEER AND MATHEMATICAL SCIENCES BUILDING, Room 3002

Professors:
Blackwell, J. H., BSc Melbourne; MSc, PhD UWO. Chairman of Department
Dennis, S. C. R., BSc, ARCS, DIC, PhD London
Ehrman, J. B., AB Pennsylvania; AM, PhD Princeton
Fraser, P. A., BSc UWO; MS Wisconsin; PhD UWO
Naylor, D., BSc, PhD London
Sakmar, I. A., MSc Istanbul; PhD California, Berkeley
Talman, J. D., BA, MSc UWO; PhD Princeton
Associate Professors:
Deakin, A. S., BSc Carleton; MA, PhD Toronto
Luke, T. M., BSc Queen's; MSc, PhD McGill
MacNeill, I. B., BA Saskatchewan; MA Queen's; PhD Stanford
Manuel, P. W., BSc, MSc, PhD UWO
Nerenberg, M. A. H., BSc, PhD McGill
Assistant Professors:
Clements, D. L., BSc, MSc Canterbury; PhD Melbourne
Migneron, J. H. R., BA Montreal; BSc Ottawa; MSc Cornell; PhD London
Sullivan, P. J., BASc, MASc Waterloo; PhD Cantab. (Joint appointment with the Faculty of Engineering Science.)
Zamir, M., BSc, PhD London; C. Eng.

The Department of Applied Mathematics offers programs leading to the MSc and PhD degrees. Current research interests of the faculty include:

Continuum Mechanics: Fluid Dynamics (three-dimensional boundary layer theory, time-dependent boundary layers, numerical solutions of the Navier-Stokes equations, turbulent dispersion, magnetohydrodynamics, dusty gases, blood flow problems); Solid Mechanics (fracture mechanics, fiber reinforced materials, mixed boundary value problems in linear anisotropic and isotropic elasticity); Heat Flow and Diffusion Theory (boundary value problems).

Theoretical Physics: Atomic and Molecular Physics (low energy collisions, resonant states); High Energy Physics (strong interactions, Regge theory, dual models, two body collisions); Quantal Many-body Problem; Plasma Physics (intense relativistic electron beam flow, electron ring accelerators); Solid State Physics (phonon spectra in crystals, spectra of impurity ions in crystals).

Mathematical Methods: Asymptotic expansions and matching techniques; Asymptotic solutions in wave propagation; Integral transforms and eigenfunction expansions; Solutions of non-linear dispersive partial differential equations.

Applied Probability and Statistics: Time series analysis; applied probability methods; applications of statistical techniques to marine biology.

DEPARTMENTAL REGULATIONS

In addition to the general degree requirements listed earlier in this Announcement the Department requires the following:

MSc DEGREE

(1) Before being allowed to register, any candidate may be required to write the Graduate Record Examinations.

(2) A candidate having an Honors Bachelor's Degree or equivalent, and who is judged to have a sufficient background in applied mathematics, shall complete the requirements for the Degree of MSc in one of two ways. Either he shall complete satisfactorily a minimum of two courses at the graduate level and prepare a thesis under the direction of a member of the faculty, or he shall complete four courses, of which at least two shall be at the graduate level, and prepare and present a review paper under the direction of one of the members of the Department.

(3) A candidate not satisfying the conditions of (2) shall first be required to enroll in a special undergraduate year, during which he must complete satisfactorily a minimum of five undergraduate honors courses.

(4) A candidate for the Degree of MSc will be required to demonstrate ability in computer programming. Short courses leading to proficiency in this subject are offered from time to time.

PhD DEGREE

(1) An application for the PhD Degree will ordinarily be expected to hold an MSc Degree or else register for it first. In any case, the Department may require any accepted candidate to enroll first in the MSc program.

(2) Shortly after enrolling in a PhD program, ordinarily within one month, a PhD candidate will normally be required to pass a preliminary examination dealing in a general way with Applied Mathematics. The purpose of this examination is diagnostic, and any weaknesses in background detected at this examination can normally be overcome by completion of particular courses.

(3) A candidate for the Degree of PhD must complete satisfactorily at least three courses at the graduate level, in addition to the requirements for the MSc Degree listed above, and prepare a thesis under the direction of a member of the Department.

(4) Each candidate shall prepare and present at least one paper at a graduate seminar, on a subject to be approved by his supervisor.

(5) After submission of his thesis, each candidate will be required to undertake an oral examination within the Department; this examination will be primarily concerned with the contents of the thesis but may include questions of a general nature relating to his field of specialization.

COURSES

The following is a selection of courses offered from time to time within the Department. Prerequisites may be obtained from the individual instructor. All Applied Mathematics graduate courses are normally three lecture hours per week. Course programs are arranged in consultation with the student's supervising committee.

500. Methods of Applied Mathematics.

506. Partial Differential Equations.

510. Special Topics in Continuum Mechanics.

511. Magnetohydrodynamics.

512. Special Topics in Fluid Dynamics.

515. Turbulence.

521. Relativity Theory.

522. Plasma Physics.

523. Special Topics in Plasma Physics.

530. Special Topics in Theoretical Physics.

531. Nuclear Physics.

532. Quantum Field Theory.

533. The Physics of Elementary Particles.

543. Applied Probability Theory and Stochastic Processes.

552. Fluid Dynamics.

553. Solid Mechanics.

554. Advanced Quantum Mechanics.

556. Non-linear Mechanics.

560. Numerical Methods.

570. Mathematical Methods for Engineers.

588. Biomathematics II.

589. Biomathematics I.

590. MSc Thesis.

591. MSc Review Paper.

690. PhD Thesis.

NOTE: At the discretion of the candidate's supervising committee, certain graduate courses in other Departments may be accepted as equivalent to Applied Mathematics courses..

ASTRONOMY

ASTRONOMY BUILDING; Western Road

Professor:
Wehlau, W. H., AB, PhD California, Berkeley. Head of Department
Associate Professors:
Gray, D. F., BSc Wisconsin; MSc, PhD Michigan
Landstreet, J. D., BA Reed College; MA, PhD Columbia
Marlborough, J. M., BA, MA Toronto; PhD Chicago
Assistant Professors:
Mitalas, R., BA, MA Toronto; PhD Cornell
Moorhead, J. M., BSc California Institute of Technology; MA California, Los Angeles
Wehlau, Amelia W., AB, PhD California, Berkeley
Honorary Lecturer:
Manuel, P. W., BSc, MSc, PhD UWO. Associate Professor of Applied Mathematics

The primary fields of interest in the department are in observational and theoretical astrophysics, particulary spectroscopy, photometry, variable stars, stellar atmospheres, radiation transfer, stellar magentism, stellar evolution, optical instrumentation. Studies in solar magnetohydrodynamics, and observational radio astronomy

are conducted in cooperation with the Departments of Applied Mathematics and Physics. Facilities include a 48-inch Ritchey-Chretien telescope equipped with Cassegrain and coudé spectrographs, photo-electric photometers and a Cassegrain correcting system for direct photography. On the campus additional facilities are provided in the Hume Cronyn Observatory.

Any student intending to do graduate work in astronomy should have adequate undergraduate preparation in Mathematics and Physics. Undergraduate training in Astronomy is not essential. The Department may require a student to elect courses in physics and mathematics which it deems necessary for graduate study preparation.

Students are expected to obtain practical experience in astronomy if they do not already have it. This may be satisfied by one summer in residence at the observatory or by equivalent experience.

MSc REQUIREMENTS

MSc candidates will plan their program of study in consultation with and subject to the approval of the Department. There is no foreign language requirement for the MSc degree. The student must pass a comprehensive examination in astronomy. This examination will cover the content of the basic courses Astronomy 510-515, elementary astronomy, physics and mathematics. This examination will be given in May and August. Normally the student will have two chances to pass this examination, and if unsuccessful will be asked to withdraw.

All MSc candidates without prior formal training in astronomy must take and complete successfully the six basic courses, Astronomy 510-515, inclusive, in their first year in the MSc program. Students with prior astronomical training may, after consultation with the Department, be excused from some of these basic courses. After successful completion of these basic courses, the student will attempt the comprehensive examination in May and if necessary again in August.

During his second year the student will take the course Astronomy 590 and two advanced courses. The advanced courses offered in any given year will depend upon the interests of the faculty and students. Some advanced courses which will be offered from time to time are listed below.

PhD REQUIREMENTS

PhD applicants must have fulfilled the requirements for the MSc degree either through work done here or elsewhere. A department advisory committee will guide the student in his studies and research. The student must pass a comprehensive examination in astronomy and take such courses as the advisory committee may require. The student must demonstrate a reading knowledge of a foreign language normally selected from French, German and Russian. Thesis regulations are stated elsewhere in this announcement.

COURSES

All courses except 590 and 690 are half-courses and the lecture time is three hours per week.

Basic Courses

510. Stellar Interiors.

511. Observed Properties of Stars and Stellar Systems.

512. Astronomical Instruments and Laboratory.

513. Stellar Atmospheres.

514. Galactic Structure and Extragalactic Studies.

515. Interstellar Matter and Gaseous Nebulae.

Advanced Courses

524. Photometry.

525. Stellar Spectroscopy.

526. Stellar Positions and Motions.

527. Advanced Stellar Interiors and Evolution.

528. Advanced Stellar Atmospheres.

529. Advanced Galactic Structure.

530. Advanced Stellar and Galactic Dynamics.

531. Advanced Extragalactic Studies.

532. Variable Stars.

533. Radiation Theory.

534. Cosmic Gas Dynamics.

535. Cosmic Electrodynamics.

536. Plasma Astrophysics.

537. Advanced Topics in Interstellar Material.

570. Topics in Astronomy (The topics considered will vary from year to year).

590. MSc Thesis and Research.

690. PhD Thesis and Research.

For further information about prerequisites consult the instructor.

BACTERIOLOGY AND IMMUNOLOGY

MEDICAL SCIENCES CENTRE; Room 352

Professors:
Fitz-James, P. C., BSA British Columbia; MSA Toronto; MD, PhD, UWO
Murray, R. G. E., BA, MA Cantab; MD, CM McGill; FRSC (Head of the Department).
Robinow, C. F., MD Hamburg; FRSC
Whitby, J. L., BA, MA, MB, B Chir, Cambridge; FRC Path
Associate Professors:
Ebisuzaki, K., BSc, UWO; MS, PhD, Wisconsin
Medzon, E. L., BSc, MSc, Manitoba; PhD, McGill
Robinson, J., BSA British Columbia; MSc, PhD McGill
Zajic, J. E., BA Kansas; MS Wisconsin; PhD California; JD Oklahoma City
Clinical Associate Professor:
Bakerspigel, A., BA, MA, McMaster; PhD, UWO
Assistant Professor:
Black, W. A., MB, ChB Glasgow, MRC Path
Cheevers, W. P., BA Colorado; PhD Mississippi
Percy, D., DVM, Toronto; MSc, Guelph; PhD, Cornell
Rozanis, J., MSc, Hebrew University, Jerusalem; PhD McGill
Sinclair, N. R. S., BSc, MD, PhD Dalhousie
Singhal, S. K., BSc Agra, India; PhD McGill
Strejan, G. H., MS Bucharest; PhD Hebrew University, Jerusalem
Wilkins, P. O. W., MS, Hawaii; PhD Pennsylvania
Clinical Assistant Professor:
Campsall, E. W. R., BA Queen's; MD, CM McGill
Honorary Lecturers:
Chodirker, W. B., BSc (MED), MD Manitoba
Hannay, C. L., BSA Toronto; DIC, PhD London
Roslycky, E. B., BSc, MS Manitoba; PhD Wisconsin
Toogood, J. H., MD Toronto

The Department offers programs leading to the MS or PhD degrees in Bacteriology or in Immunology.

The Department is prepared to supervise research within the principal interests of its faculty. These include: the structure of bacteria and fungi, the application of cytochemical and biochemical methods to the analysis of cell structure; the synthesis of protein cell components, macro-molecular architecture; taxonomy; toxin production; bacterial metabolism; virus-cell interactions; bacteriophage genetics; the regulation of the immune response *in vivo* and *in vitro;* cellular interactions in the immune response; immunochemical aspects of reaginmediated hypersensitivity; oral microbiology. Facilities and equipment for carrying out research in these areas are present in the Department. A program of research and directed reading is accompanied by courses offered by the Department or given in collaboration with Departments of the Faculty and may include tutorials and graduate seminars. Students registered in the Department for degree courses must attain the required level (B grades) in the departmental courses. Those taking a PhD will be required to pass a departmental comprehensive examination in the second year of their course. Opportunities for research in clinical microbiology are offered with the resources of the teaching hospitals at hand.

ADMISSION:

Applicants for entry into the Graduate program must have an Honors Bachelor degree or equivalent in Bacteriology or Immunology or in some other program such as Biology, Biochemistry or Physiology. A mark of at least B average is required. Holders of an MD, a DDS or a DVM degree are also eligible to apply. Their acceptance is at the discretion of the Department.

DEGREE REQUIREMENTS:

The Master's Thesis and the PhD Dissertation represent the end products towards which the program is directed. All candidates must defend their thesis at an oral examination. All Graduate students must complete a program of courses that will be decided by the direct supervisor in conjunction with the candidate. Additional information on admissions programs and regulations is available from the Chairman of Graduate Studies Committee of the Department.

COURSES:

530. Medical Microbiology. A course of lectures, seminars and laboratory exercises for medical students and others requiring a basic knowledge of medical microbiology and applied immunology.
3 to 6 hours each week according to the quarter of the year.

531. Oral and Dental Microbiology. A course of lectures, seminars and laboratory exercises for dental students and others requiring a similar background.
3 to 6 hrs each week, according to the quarter of the year, Full course.

541. Seminar. Seminar courses involving detailed consideration of selected topics in microbiology.
One hour, two terms, half course.

560. Advanced Microbiology. An advanced treatment of the biology and physiology of microbes, with particular emphasis on the bacteria.
Prerequisites: Biology 306; Biology 300 or 301
2 lectures, 3 laboratory hours, Full course.

561b. Microbial Anatomy. A survey of cytological methods and applications to the understanding of the structure of procaryotic organisms, protozoa and fungi.

Prerequisites: Biology 202 or Biology 306
1 lecture, 3 laboratory hours, one term only, half course.

562b. Advanced Virology. Current topics on the biochemistry of virus-cell interactions.
Prerequisites: Biology 300 or Biology 301; Biochemistry 461 strongly recommended.
2 lectures, one term only, half course.

565b. Microbial Biochemistry. Selected topics involving the biochemical activities of microbes such as - cell division, synthesis of cell wall and membrane; spore formation, dormancy and germination and metabolic control mechanisms.
Prerequisites: Biology 300 or 301 and Biochemistry 300.
2 lectures, one term only, half course.

567a. Microbial Genetics. Aspects of genetics applying to microorganisms (offered jointly with the Dept. of Plant Sciences).
Prerequisites: Biology 308, 300 or 301
2 lectures, 3 laboratory hours, one term only, half course.

568. Medical Bacteriology. A lecture course concerned with pathogenesis and important examples in diagnostic and determinative medical bacteriology.
Prerequisite: Bacteriology and Immunology 530
1 lecture, two terms, half course.

569a. Medical Mycology. A project course in Medical Mycology. A report will have to be submitted in a form suitable for publication.
Prerequisites: Biology 300 or Biology 301
6 hours, two terms, full course.

570a. Immunology. A course concerned with immunological theory and interpretation of basic and medically applied immune phenomena. (Offered jointly with the Dept. of Medicine).
Prerequisite: Biology 200 or equivalent
2 lectures, one term only, half course.

571. Immunobiology. An advanced course dealing with cellular mechanisms involved in the immune response, the ontogeny and phylogeny of the immune response, general concepts in immunopathology and immunological diseases and other topics of current interest.
Prerequisites: Bacteriology and Immunology 470a, 570a or its equivalent
2 lectures, 3 laboratory hours, one term only, half course.

572b. Immunochemistry. An advanced course on the properties of antigens and antibodies, on their interactions *in vivo and in vitro.*
Prerequisites: Bacteriology and Immunology 470a, 570a or equivalent
2 lectures, 3 laboratory hours, one term only, half course.

575. Immunology Seminar. Seminar courses involving detailed consideration of selected topics in immunology.
1 lecture, two terms, half course.

590. MSc Thesis.

610. Comprehensive examination for PhD.

690. PhD Thesis.

BIOCHEMISTRY

HEALTH SCIENCES CENTRE; Room 316

Strickland, K. P., BSc UWO; MSc UWO; PhD UWO; Acting Chairman of Department

Professors:

Bigelow, C. C., BASc Toronto; MSc McMaster; PhD McMaster
Brownstone, Y. S., BScA Manitoba; MSc Manitoba; PhD McGill
Carroll, K. K., BSc New Brunswick; MSc New Brunswick; MA Toronto; PhD UWO
Fitz-James, P. C., BSA British Columbia; MSA Toronto; MD UWO; PhD UWO
Hobkirk, R., BSc Edinburgh; PhD Edinburgh; ARIC
McCarter, J. A., BA British Columbia; MA British Columbia; PhD Toronto; FRSC
McMurray, W. C. C., BSc UWO; PhD UWO
Rossiter, R. J., BSc W. Aust.; BA Oxon; MA Oxon; DPhil. Oxon; Bm BCh Oxon; DM Oxon; FRIC(Eng); FRSC
Smith, D. B., BA British Columbia; MA British Columbia; PhD Toronto
Stewart, H. B., MD Toronto; PhD Toronto; PhD Cantab

Associate Professors:

Ball, Judith K., BSc Mount Allison; MSc Dalhousie; PhD Dalhousie
Griffiths, J. C., BS Wales; MB BCh Welsh National; FCSCC. Chairman, Division Clinical Biochemistry (University Hospital)
Magee, W. L., BSc UWO; MSc UWO; PhD UWO
Tustanoff, E. R., BA Windsor; MS Detroit; PhD UWO
Walker, I. G., BA Saskatchewan; MA Toronto; PhD Toronto
Webling, D. D'A., BSc Adelaide; MBBS Adelaide; PhD Adelaide; DTM&H Sydney

Clinical Associate Professors:

Binns Smith, M., MB ChB Edinburgh; PhD Edinburgh
Haines, D. S. M., PhD Toronto; BA UWO; MD UWO. Chairman, Department of Clinical Pathology (Victoria Hospital)
Haust, H. L., MD Heidelberg; MSc(Med) Queens; PhD Queens

Assistant Professors:

Cook, R. A., BSc Manitoba; MSc Manitoba; PhD Manitoba
Donisch, Valentina, MD Bonn; PhD UWO
Galsworthy, P. R., BSc Queens; PhD Wisconsin
Garg, A. K., BSc Agra; MSc Agra, MSc Saskatchewan; PhD Saskatchewan
Gatfield, P. D., MD Queens
Gordon, B. A., MDCM, Queens; MSc Queens; PhD Queens
Guthrie, J. P., PhD Harvard; BSc UWO
McDonald, J. W. D., MD UWO; PhD UWO
Possmayer, F., BSc Toronto; PhD UWO
Trevithick, J. R., BSc Queens; PhD Wisconsin

Honorary Lecturers:

Cheevers, W. P., BA Colorado; PhD Mississippi
Chefurka, W., BSc Manitoba; MSc Montana State; PhD Harvard
Hudson, A. J., MD Toronto; BSc Toronto; FRCP (C)
Krupka, R. M., MA Saskatchewan; PhD McGill
MacPherson, Catherine F. C., BSc Mount Allison; MSc Dalhousie; PhD Columbia
Spencer, E. Y., BSc Alberta; MSc Alberta; PhD Toronto; FCIC
Vardanis, A., BSc Leeds; MSc McGill; PhD McGill
Wolfe, B. M., BA Saskatchewan, BM BCh Oxford; MA Oxford; MSc McGill

BIOCHEMISTRY

The Department offers programs leading to the MSc and PhD degrees in Biochemistry. Research may be done under the direction of members in either basic or clinical biochemistry. The present research interests of those in the basic segment of the Department include: phospholipid chemistry and metabolism, cholesterol metabolism, bacterial lipids, metabolism and function of mitochondrial lipids, lipids and cancer, RNA tumour viruses and cancer, brain chemistry and metabolism, metabolism of degenerating nerve and muscle, biochemistry of congenital abnormalities, metabolism of amino acids and nucleic acids, repair replication, tissue culture, mucopolysaccharides, physical chemistry of proteins, hemoglobin chemistry, haptoglobin-hemoglobin interactions, metabolic regulation and allosteric control reactions, lens proteins, developmental biochemistry of nuclear proteins, exoenzymes, microbial biochemistry, ion transport by microbial cells, protoplasts and derived membrane vesicles, active transport, intestinal absorption of calcium, periodontal disease and comparative biochemistry and toxicology.

Present research activities in clinical biochemistry are in the following areas. An assessment of the methodologies used in routine enzyme chemistry such as spectrophotometry, fluorophotometry and enzyme antibody production; the functions of gamma glutamyl transpeptidase, cholinesterase and amylase; the techniques of immunoassay in a variety of both steroid and polypeptide hormones along with clinical and physiologic investigation of these hormones; the computer and its relationship to data processing in patient care; the physiology of shock with reference to the vasoactive amines and the short chain polypeptides; the biochemical mediators in asthma such as the prostaglandins and slow reacting substance of anaphylaxis; the estimation of adenyl cyclase in circulating white cells and relation to certain hypersensitive states; the relationship of testosterone and oestradiol; enzymology and metabolism of the erythrocyte; studies of the biogenesis of mitochondria and their underlying control mechanisms; the significance of fractionated keto-steroids; bilirubin binding in the neonatal period; detection of free unconjugated bilirubin; differential mechanisms affecting porphyrin synthesis and metabolism; formation of membranes; enzymology of kidney tissues; the synthesis of liver phospholipids under varying nutritional conditions; synthesis of low density lipoprotein in liver particularly in hyperlipidemia.

The research facilities in the clinical laboratories are situated in the University Hospital, Victoria Hospital, St. Joseph's Hospital and the Children's Psychiatric Research Institute.

Applicants with acceptable training in Bacteriology may be considered for research problems in microbial biochemistry, which are supervised conjointly with the Department of Bacteriology and Immunology. In arrangement with the Department of Physiology, students may take Biochemistry and Physiology as a major subject.

ADMISSION

Applicants must have either an MD or an Honors degree or its equivalent in Biochemistry, Biology, Chemistry, Microbiology or Physiology. Applicants will not be considered unless they have maintained at least a B average (second class standing or equivalent) during the final two years of their undergraduate programs.

DEGREE REQUIREMENTS

In addition to the general systematic course, tutorials, directed reading and research, graduate seminar courses are provided.

Students who wish to obtain the Masters degree will normally take the equivalent of two full courses and candidates for the Doctoral degree will normally take the equivalent of three full courses in addition to research and thesis requirements. Consideration is given to course work completed previously. Students seeking the Doctoral degree are expected to complete successfully an oral examination in the general field of biochemistry during their period of registration for the advanced degree. All degree candidates must defend their thesis at an oral examination.

500. General Biochemistry. A survey course.
3 hours lecture, 2 hours laboratory.
Full course.

513. Current Topics in Biochemistry. A course of variable content dealing with contemporary problems in biochemistry.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.
Offering of this course varies from year to year..

514. Topics in Lipids and Neurochemistry. A survey of the composition and metabolic processes of lipids with particular reference to nervous tissues.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.
Offering of this course varies from year to year..

***521. Endocrinology.** Basic biochemistry of steroid hormones; biochemical interrelationships and action of various hormones (e.g. steroids, gonadotropins, ACTH, prostaglandins) in normal and abnormal states. The subject matter will relate wherever possible to topics in the recent literature.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.
(Proposed 1973-74 and then on alternate years).

522. Metabolic Regulation. A comprehensive examination of the mechanisms involved in the control of intermediary metabolism. Emphasis will be placed in the variations in specific controls observed in microbial and mammalian cells.
Prerequisites: Biochemistry 500, 530 *or equivalent*
2 hours lecture, Half Course.
Offered next 1973-74 and then on alternate years.

***523. Protein Chemistry.** The structure, function and interactions of globular and fibrous protein molecules.
Prerequisites: Biochemistry 500 or equivalent
2 hours lecture, Half Course.
Proposed 1974-75 and then on alternate years.

524. Membrane Biochemistry. A course of lectures on contemporary contributions relating to the structure, biogenesis and function of biological membranes.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.
First offered in 1972-73 and then on alternate years.

***525. Clinical Biochemistry.** The application of basic biochemical principles to patient care, the course will review current methodology particularly in respect to automated chemistry *and the development of micro* techniques. New advances in enzymology and biochemical pharmacology will be reviewed. Clinical application of the biochemical findings will be extensively discussed in the latter part of the course.
Prerequisites: Biochemistry 500, 530 or equivalent

2 hours lecture, Half Course.
Proposed 1974-75 and then on alternate years.

530. Medical Biochemistry. A survey course in biochemistry related to medicine.
3 hours lecture, Full Course.

560. Biochemistry. An advanced treatment of intermediary metabolism.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Full Course.

561. Nucleic Acids and Protein Synthesis. A discussion of the role of nucleic acids in promotion and regulation of protein synthesis.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Full Course.

564b. Enzymology. A course of lectures dealing with kinetics, thermodynamic and mechanistic characteristics of enzyme action.
Prerequisties: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.

568a. Physical Biochemistry. A discussion of the physicochemical properties of macromolecules of biological interest.
Prerequisites: Biochemistry 500, 530 or equivalent
2 hours lecture, Half Course.

590. MSc Thesis.

690. PhD Thesis.

BIOPHYSICS

MEDICAL SCIENCES BUILDING, Room 122

Professor (Part-Time):
Burton, A. C., BSc London; MA, PhD Toronto; LLD Alberta; FRSC
Professor:
Roach, Margot R., BSc New Brunswick; MD, CM McGill; PhD UWO Chairman of Department
Groom, A. C., BSc, PhD London
Associate Professors:
Inch, W. R., BSc Queen's; PhD UWO
Taylor, C. P. S., BA British Columbia; BA, MA Oxon; PhD Pennsylvania
Assistant Professors:
Boughner, D., MD UWO; PhD UWO; FRCP(C)
Canham, P. B., BASc Toronto; MSc Waterloo; PhD UWO
Duncan, R. I., BS, MS, PhD Oklahoma
Sherebrin, M. H., BSc Manitoba; MSc, PhD UWO
Sutherland, R. M., BSc Acadia; PhD Rochester
Honorary Lecturers:
Finlay, J. B., BSc CNAA, PhD Strathclyde; CEng.
Johnson, L. N., BS Pacific; MS Oregon; PhD Michigan
Miller, D. M., BSc Alberta; PhD McGill
Nagai, T., MEng, MSc, DSc Tokyo
Lecturers:
Gerson, D. F., BSc UWO; PhD McGill
Song, S. H., MD Yonsei; MA Buffalo; PhD UWO

ADMISSION

Graduates from physical, biological sciences, engineering or medicine are accepted for the degrees of MSc or PhD in Biophysics. Previous training in physics and mathematics is desirable. Graduate students are required to make up any deficiencies in physics, mathematics and biology during their program.

RESEARCH AREAS

The present research interests of the Department are in the following general fields: fundamental hemodynamics and hemorheology, the state and function of the blood vessel wall, contraction of neonatal blood vessels to oxygen, microcirculation and capillary exchange, micromanipulation of living cells, protoplasmic streaming, electrical activity of muscle, bioelectric intercell communication in culture, biophysics of muscular contraction, mechanochemistry of contractile systems, studies of excitable membranes by infra-red spectrophotometry, studies on hemoproteins by electron paramagnetic resonance, respiration and photosynthesis in algae and bacteria, effect of ionizing radiation and chemicals on growth of solid tumors, properties of cultured mammalian cells in relation to malignancy.

The department is well equipped to study the application of physical laws to the behaviour of biological materials, living cells and organisms.

DEGREE REQUIREMENTS

An individual program of courses will be arranged for each student to provide a broad background in Biophysics and will take into account the student's previous training. All students are expected to obtain a working knowledge of statistical methods and experimental design (e.g. Epidemiology 510 or equivalent) and history of science (History of Medicine and Science 540 or equivalent). In addition MSc candidates normally complete Biophysics 511, or 512 and 590; while PhD candidates complete Biophysics 511, 512 and 690.

COURSES

500. General Biophysics. Biomechanics, bioenergetics and the steady state, transport mechanisms (diffusion, bulk flow), physical properties of cells and tissues, the physical environment of life, bioelectricity, biophysics of vision and hearing, elementary radiobiology.
Prerequisites: Physics 20, 22, or 26
2 lectures, 3 laboratory hours, Full course.

501. Biophysical Analysis. The application of mathematics and physics to the functional behavior of living things. Emphasis is on the application of mathematics and physics and is not merely on these as subjects.
Prerequisite: A knowledge of first year calculus is assumed
2 hour lectures, Full course.

511. Current topics in Biophysics A
Not offered in 1973-74.

512. Current topics in Biophysics B. A review of recent advances and major papers in Biophysics.
1 hour, (Seminar), half course.

560. Cellular Biophysics. The physics of cell shape and size, membrane structure and function, the role of cell water, cells as chemical and mechanical machines, and as control systems, investigate tools and techniques.

561a. Bio-electrical phenomena. Bio-electric potentials, excitability and conduction in nerve and muscle, mechanism of biological transducers, and cybernetics.
2 lectures one term, Half course.

562b. Radiobiology and Molecular Biophysics. Nature and effects of electromagnetic radiations on biomolecular structure and on living cells. Applied radiobiology and radioecology. (Given in collaboration with the Department of Plant Sciences).
2 lectures one term, Half course.

563. Environmental Biophysics. The physical environment of life. The effects, on living things, of environmental factors such as temperature, solar radiation, pressure, gaseous atmosphere water and sõlutes, gravity, sound and vibration, electric and magnetic fields.
2 lectures two terms, Half course.

564b. Biothermodynamics. The first and second laws of thermodynamics and their application in biology. Topics include open systems - properties of solutions, chemical and membrane equilibria, whole cells - radiation and photosynthesis, information and entropy, irreversible thermodynamics.
2 lectures one term, Half course.

570. Advanced studies in Biophysics I. A detailed study of selected topics in Biophysics arranged to meet the needs of the student; may be taken only by permission of the Chairman of the Department, who will appoint the instructor, and an examining committee consisting of the instructor and at least one other member of the faculty.

571. Advanced studies in Biophysics II. Regulations as for 570. This course permits a student to take a second, and different course of directed study.

590. MSc Thesis.

690. PhD Thesis.

BUSINESS ADMINISTRATION

RICHARD IVEY SCHOOL OF BUSINESS ADMINISTRATION BUILDING

MBA PROGRAM

Western's MBA Program prepares men and women for professional management responsibilities. While most of its graduates pursue careers in business, many have assumed positions in governments, municipalities and non-profit organizations. The Program emphasizes development of decision-making skills as they apply to dynamic organizations where human and material resources are brought together. Students acquire extensive knowledge in specialized fields such as finance, marketing, production, management science, control and human behaviour, all in the context of how these specialties are integrated into the social, economic and political environment toward achievement of worthy organizational goals.

The case method of study is the major learning vehicle in both years of the MBA Program. Lectures, simulation exercises, special projects, and a variety of other teaching-learning techniques are also used.

The Program requires a high degree of fluency in both written and verbal English, due to the method of study. Applicants who are not fluent in English will be required to take the Test of English as a Foreign Language (TOEFL).

All applicants must write the Admission Test for Graduate Study (ATGSB). Test applications are available for both tests from Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 08540.

For further information and application forms, write the Secretary of Admissions, School of Business Administration, London N6A 3K7, Ontario.

THE PHD PROGRAM IN BUSINESS ADMINISTRATION

The PhD Program in Business Administration at The University of Western Ontario was the first doctoral program in management offered in Canada. Its objective is to prepare those who are interested in pursuing an academic career in Business Administration.

It is a three year program. The first year with an emphasis on economics, quantitative analysis, behavioural science, and general management prepares the candidate for the general fields examination. The second year provides an opportunity to study in depth a special area like marketing, finance, production, organizational behaviour or quantitative analysis. The third year is spent on the preparation of a thesis.

It is an objective of the program to admit a small number of students with superior qualifications and subject them to an intensive program based on a close relationship with faculty members.

The normal admission requirement to the program is an MBA degree or equivalent completed with high academic standing. Candidates are usually asked to come for a personal interview before final acceptance is granted. A standard requirement of every candidate is that he must write the Admission Test for Graduate Study in Business. Test applications must be filed with the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 08540, at least three weeks in advance of the test.

For further information, application forms and calendar write the Director, Doctoral Program, School of Business Administration, The University of Western Ontario, London N6A 3K7, Ontario.

CHEMISTRY

CHEMISTRY BUILDING, Room 119

Professors:

Allnatt, A. R., BSc, PhD London

Arnold, D. R., BS Bethany; PhD Rochester (Member of the Photochemistry Unit)

Bolton, J. R., BA, MA Saskatchewan; PhD Cantab (Member of the Photochemistry Unit)

Brand, J. C. D., BSc, MSc, PhD, DSc London (Director, Photochemistry Unit)

Clark, H. C., BSc, MSc, PhD Auckland; PhD, ScD Cantab (Head of Department)

Jacobs, P. W. M., BSc, MSc Natal; PhD, DSc London (Member of the Photochemistry Unit)

Howell, W. C., BSc, MSc, PhD UWO; (Assistant Dean of Science)

King, J. F., BSc, PhD New Brunswick

de Mayo, P., BSc, MSc, PhD London; D.ès. SC Paris-Sud; FRSC (Member of the Photochemistry Unit)

Meath, W. J., BA, MA, PhD Toronto

Scott, A. E., BSc, PhD St. Andrews; (Dean of Science)

Stothers, J. B., BSc, MSc UWO; PhD McMaster

Ware, W. R., BA Reed College; PhD Rochester (Member of the Photochemistry Unit)

Warnhoff, E. W., AB Washington; PhD Wisconsin

Associate Professors:
Baird, N. C., BSc, PhD McGill (Member of the Photochemistry Unit)
Baldwin, H. W., BA, MA Saskatchewan; PhD Chicago (University Research Officer)
Bancroft, G. M., BSc, MSc Manitoba, PhD Cantab
Bidinosti, D. R., BSc, MSc Manitoba; PhD McMaster
Chan, R. K. C., BA, PhD Toronto
Graham, D. M., BSc, MSc UWO; PhD Brooklyn Poly. Inst.
Haines, R. A., BSc, MSc Dalhousie, PhD Pittsburgh
Hunter, D. H., BSc Alberta; PhD UCLA
Kidd, R. G., BSc, MSc Manitoba; PhD London (Assistant Dean of Graduate Studies)
Lorimer, J. W., BA, MA, PhD Toronto
Sukava, A. J., BSc, MSc Manitoba; PhD McGill
Willis, C. J., MA, PhD Cantab
Assistant Professors:
Dean, P. A. W., BSc, PhD London
Demas, C. P., BSc Alexandria; PhD London
Guthrie, J. P., BSc UWO; PhD Harvard
Martin, R. R., BSc, MSc St. Francis Xavier; PhD UWO
Payne, N. C., BSc London; PhD Sheffield
Warnhoff, P. R., AB Trinity, Washington; MSc MIT; PhD Southern California
Honorary Professors:
Burns, J. W., BASc New Brunswick; MSc Queens; LLD UWO
Spencer, E. Y., BSc, MSc Alberta; PhD Toronto
Watson, J. K., BA, MA McMaster; MA, PhD Toronto (University Registrar)
Honorary Lecturers:
Robinson, J. R., BSA, MSA Toronto; PhD UWO
Starratt, A. N., BSc Acadia; PhD UWO
Stoessl, A., BSc, PhD London

REQUIREMENTS AND PROCEDURES FOR ADMISSION

The Department offers programs leading to the degrees of MSc or PhD. For admission as MSc candidates, students should normally have, or expect to receive, an Honors degree in Chemistry from an accredited University or an equivalent qualification (e.g. Grad. RIC). However, students with high standing in General Degree courses may be granted admission to a Prerequisite Year.

Admission as PhD candidates will be given to students having an MSc degree from an accredited University or high standing in an Honors BSc degree. Applicants without a Master's degree are required to register initially as MSc candidates, with the possibility of transferring to a PhD program after one year of satisfactory work.

Students registering in this graduate school for the first time must write proficiency examinations in the main areas of Chemistry. In some cases, substitution of an examination in another scientific discipline for one of these may be permitted. These are first held in early September every year, and incoming students are normally expected to arrive in time to write them. Details of these examinations may be obtained on application to the Department.

RESEARCH INTERESTS OF THE DEPARTMENT

Physical:

Mass spectrometry. High resolution electronic spectroscopy. Chemistry and physics of high pressures; electrolytic conductance, dielectric properties and dipole moments. Kinetics of free radical reactions. Photochemistry - mechanisms, kinetics and primary processes. Electron spin resonance spectroscopy. Electrical conductance and thermoelectric power of ionic crystals; color centres in alkali halide crystals; thermal and photochemical decomposition of solids. Isothermal and non-isothermal transport of electrolytes and non-electrolytes in ion-selective membranes; light scattering in liquids and polymer solutions. Cathode overpotential, electrosorption of additives, and interfacial phenomena in electrodeposition.

Theoretical:

Equilibrium statistical mechanics of crystals and simple fluids; theoretical and experimental studies of matter transport in solids and liquids. Semi-empirical and non-empirical calculations of bonding, energies and geometries for molecules. Atomic and molecular quantum mechanics; intermolecular and intramolecular forces; perturbation theory.

Inorganic:

The chemistry of complex ions, including tracer studies, magnetochemistry, liquid ammonia solutions, spectral studies of metal chelates, stereo-chemistry of optically active metal complexes and broadline NMR, studies of metal-ligand bonding. Organometallic chemistry, including synthetic, structural and spectroscopic studies on compounds of metals or metalloids containing metal - metal or metal hydrogen bonds, perfluoroalkyl groups of fluorinated alkoxy groups. Chemistry of highly acidic media. Single crystal X-ray structural studies of transition metal complexes. Determination of absolute configurations from the anomalous scattering of X-rays. Mössbauer spectroscopy.

Organic:

Studies of the kinetics and mechanism of enzyme catalyzed reactions, and of enzyme model systems. Applications of ^{1}H and ^{13}C NMR techniques in structural, stereochemical and mechanistic studies. The preparation of complex heterocyclic compounds. The study of synthetic applications and mechanisms of reactions of sulphenes and other organo-sulfur compounds. Synthesis and mechanistic studies in photochemistry. The chemistry of carbanions. Conformational methods of elucidating reaction mechanisms. New reactions at high temperatures (flash thermolysis) and related mechanistic studies. The synthesis of natural products. Alkaloid chemistry.

COURSE WORK REQUIREMENTS

On the basis of past work and of the results of the proficiency examinations the candidate is advised about the courses in which he should enroll. Students with incomplete backgrounds will be required to take advanced undergraduate courses. Unsatisfactory examination results will require the student to withdraw.

The following outline provides a guide to the minimum requirements for graduate students in Chemistry:

MSc - 2 graduate courses plus 558, 590

PhD - 3 graduate courses plus 558, 690

GRADUATE

NOTE: A graduate course is any Chemistry course at the 500 or 600 level, or a Chemistry course at the 400 level (final undergraduate year) outside the field of specialization, or a course at the 300 (third year) or higher level outside the Department. For MSc candidates at least one of the graduate courses must be a chemistry course at the 500 or 600 level and for PhD candidates at least two of the graduate courses must be at this level.

COURSES

501. Topics in Inorganic Chemistry/P. A. W. Dean.
(half course).

504. Group Theory/D. M. Graham.
2 hours lecture, one term, (half course).

511. Inorganic Problem Seminars/Inorganic Staff. (this does not count as a formal graduate course, but is a requirement for all graduate students in Inorganic Chemistry)

514. Microwave and Magnetic Resonance Spectroscopy/J. R. Bolton.
2 hours lecture, one term, (half course).

521. Electronic Spectroscopy of Transition Metal Compounds/R. A. Haines.
2 hours lecture, one term, (half course).

524. Electrochemistry/A. J. Sukava.
1 hour lecture, two terms, (half course).

531. Mössbauer Spectroscopy/G. M. Bancroft.
2 hours lecture, one term, (half course).

533. Biorganic Chemistry/J. P. Guthrie.
2 hours lecture, one term, (half course).

534. Dielectric and Magnetic Phenomena/R. K. Chan.
2 hours lecture, one term, (half course).

541. Crystallography I/N. C. Payne.
1 hour lecture, 1 hour laboratory, (half course).

543. Quantum Organic Chemistry/N. C. Baird.
1 hour lecture, two terms, (half course).

544. Chemical Kinetics/D. M. Graham.
2 hours lecture, one term, (half course).

553. Physical Organic Chemistry/Organic Staff.
2 hours lecture.

554. Statistical Mechanics/A. R. Allnatt.
2 hours lecture.

558. Seminar/Staff.

561. Applications of NMR Spectroscopy to Inorganic Chemistry/ R. G. Kidd, P. A. W. Dean.
2 hours lecture, one term, (half course).

563. Organic: Modern Synthetic Methods/W. C. Howell, E. W. Warnhoff.
2 hours lecture, one term, (half course).

564. Solid State/P. W. M. Jacobs.
2 hours lecture.

568. Research Proposition/Organic Staff. The selection and written presentation of one or more original chemical research problems, and the defence of the choice. Good background knowledge and familiarity with general modern concepts will be expected. (*This does not count as a* formal graduate course).

571. Optical Activity in Inorganic Systems/R. A. Haines, N. C. Payne.
2 hours lecture, one term, (half course).

573. Organic Problem Seminars/Organic Staff. (This does not count as a formal graduate course but it is a requirement for all PhD candidates in Organic Chemistry)

574. Quantum Mechanics I/W. J. Meath.
2 hours lecture.

581. Vibrational Spectroscopy of Inorganic Systems/C. J. Willis.
2 hours lecture, one term, (half course).

583. Organic: Photochemistry/D. R. Arnold.
2 hours lecture.

590. MSc Thesis and Research.

593. Nuclear Magnetic Resonance Spectroscopy/J. B. Stothers.
2 hours lecture, one term, (half course).

594. Advanced Thermodynamics/J. W. Lorimer.
2 hours lecture, one term, (half course).

601. Topics in Organic Chemistry II/Staff.
(half course).

603. Organic: Nitrogen Compounds/E. W. Warnhoff.
1 hour lecture for 20 weeks, (half course).

613. Organic: Nitrogen Compounds/E. W. Warnhoff.
2 hours lecture, one term, (half course).

614. Vibrational and Electronic Spectra of Molecules/J. C. D. Brand.
2 hours lecture, one term, (half course).

623. Organic: Carbanions/D. H. Hunter.
2 hours lecture, one term, (half course).

633. Organic: Selected Topics/Organic Staff.
(half course).

641. Crystallography II/N. C. Payne.
1 hour lecture, 1 hour laboratory, (half course).

651. Organometallic Chemistry I/H. C. Clark.
2 hours lecture, one term, (half course).

653. Organic: Selected Topics/Organic Staff.
(half course).

661. Organometallic Chemistry II/C. J. Willis.
2 hours lecture, one term, (half course).

663. Organic: National Products/E. W. Warnhoff.
2 hours lecture, one term, (half course).

673. Organic: Stereochemistry/J. F. King.
2 hours lecture, one term, (half course).

674. Quantum Mechanics II/W. J. Meath.
2 hours lecture.

681. Inorganic Reaction Mechanisms/H. W. Baldwin.
2 hours lecture, one term, (half course).

684. Molecular Orbital Theory/N. C. Baird.
2 hours lecture, one term, (half course).

690. PhD Thesis and Research.

CLASSICAL STUDIES

TALBOT COLLEGE, Room 120

Professors:
Gerber, D. E., BA, MA UWO; PhD Toronto Chairman of Department
Lambert, G. R., BA, MA, Toronto (Althouse College of Education)
Raymond, A. E., BA UWO MA Toronto; PhD Chicago
Associate Professors:
Avotins, I., BA Toronto; AM, PhD Harvard
Murison, C. L., MA Edinburgh; MA Cantab
Timothy, H. B. MA, BD Glasgow; BA London; PhD Edinburgh
Assistant Professors:
Broege, Valerie A., AB Vassar; MA, PhD Bryn Mawr
Crowther, N. B., BA Leeds; MA, McMaster; PhD Sheffield
Littlewood, A. R., BA Leeds; BLitt Oxon
Stanley-Porter, D. P., BA Toronto; PhD London

The MA in Classics, Latin or Greek may be taken either by four courses or by two or three courses plus a thesis, subject to approval of the Department. Detailed information is available from the Department of Classical Studies; information is also available regarding special arrangements for applicants without knowledge of Greek. A selection from the graduate courses listed below is offered each year.

LATIN COURSES

500. Roman Historians/C. L. Murison.
2 hours (lecture/seminar), full course.
510. Roman Orators/A. E. Raymond.
2 hours (lecture/seminar), full course.
520. Lucretius/I. Avotins.
2 hours (lecture/seminar), full course.
521. Ovid/V. A. Broege.
2 hours (lecture/seminar), full course.
522. Catullus/N. B. Crowther.
2 hours (lecture/seminar), full course.
523. Horace/V. A. Broege.
2 hours (lecture/seminar), full course.
525. Roman Satire/A. R. Littlewood.
2 hours (lecture/seminar), full course.
530. Graeco-Roman Philosophy/H. B. Timothy.
2 hours (lecture/seminar), full course.
540. Roman Drama/D. E. Gerber.
2 hours (lecture/seminar), full course.
550. Graeco-Roman Education/G. R. Lambert.
2 hours (lecture/seminar), full course.
560y. Reading Course in Latin Authors/Staff.
Half course, whole year.
590. MA Thesis.

GREEK COURSES

500. Greek Historians/C. L. Murison.
2 hours (lecture/seminar), full course.
510. Attic Orators/A. E. Raymond.
2 hours (lecture/seminar), full course.
520. Greek Lyric/D. E. Gerber.
2 hours (lecture/seminar), full course.
521. Greek Epic/D. E. Gerber.
2 hours (lecture/seminar), full course.
522. Greek Writers under the Roman Empire/I. Avotins.
2 hours (lecture/seminar), full course.
526. Hellenistic Greek Poetry/A. R. Littlewood.
2 hours (lecture/seminar), full course.
530. Greek Philosophers/H. B. Timothy.
2 hours (lecture/seminar), full course.
540. Greek Tragedy/D. E. Gerber, D. P. Stanley-Porter.
2 hours (lecture/seminar), full course.
550. Byzantine Civilization/A. R. Littlewood.
2 hours (lecture/seminar), full course.
560y. Reading Course in Greek Authors/Staff.
Half course, whole year.
590. MA Thesis.

COMPUTER SCIENCE

ENGINEERING AND MATHEMATICAL SCIENCES BUILDING, Room 2036

Professor:
Hart, J. F., BA, MA, PhD Toronto, Chairman of Department
Visiting Professor:
Elcock, E. W., BSc, PhD Leeds
Associate Professors:
Beckhoff, G. F., MSc Southern Methodist; PhD, Laval
Carroll, J. M., BS Lehigh; MA Hofstra; Dr. Eng. Sci., New York, P. Eng.
Gargantini, Irene, BA, PhD Milan
Pylyshyn, Z. W., BEng McGill; MSc PhD Saskatchewan Associate Professor of Psychology
Assistant Professors:
Bennett, J. M., BSc Queen's; MA, PhD UWO
Dunham, C., MA, British Columbia; PhD UWO
Kuehner, D. G., BSc, Bishops; MA, Queens; PhD Edinburgh
Mullin, J. K., BS, MS, PhD, Carnegie Mellon
Steinby M., BSc, MSc, PhD, Turku
Honourary Lecturers:
Lake, G. T., BSc, Queens, Director, Computing Centre
Slemon, A. G., BA, Manitoba; MA, UWO; PhD Toronto Associate Professor of Psychology, Althouse College of Education
Thierrin, G., Lic. Math, Doc. Math Fribourg; Doc. Math, Paris Professor of Mathematics

REQUIREMENTS FOR THE MSc DEGREE IN COMPUTER SCIENCE

Qualifications for the MSc degree are noted under general admission requirements. Normally there are three means by which a student can be admitted to the master's programme in Computer Science:

(a) An honours (four year) graduate in Computer Science from an approved university, can be admitted directly to the last year (year 1) of our two-year programme.

(b) An honours graduate in another field from an approved university can be admitted to the pre-requisite year (year H) of our programme in which he must take a selection of honours computer science courses and such other courses as may be required to attain a competence equivalent to that of an honours graduate from this department. This selection will normally include Computer Science 304, 313, and two of: 420a, 460a or 430a.

(c) A meritorious (B average) graduate in Computer Science from an approved university can be enrolled as a special undergraduate student. He will be required to take at least five undergraduate honours Computer Science courses which will normally include Computer Science 304, 313, and four of: 420a, 421b, 460a, 461b, 430a, and 431b.

(Note: All courses bearing an alphabetic suffix are half courses).

Requirements for the MSc degree may be fulfilled in these ways: Two graduate courses in Computer Science and a thesis supervised by a member of the department.

Three graduate courses in Computer Science and a project supervised by a member of the department.

GRADUATE

With the permission of the department, four graduate courses in Computer Science.

Half of the student's course work may consist of graduate courses offered by other departments of the university. In all cases, the selection of courses is subject to approval of both departments concerned.

Arrangements may be made for part-time enrolment in the graduate programme. The qualifications of applicants who have demonstrated their professional competence in Computer Science will be assessed on an individual basis.

COURSES

Note: The following courses will not necessarily all be offered every year and may be modified from time to time to suit special needs of individual students.

500a. Foundations of Computer Science. Number systems for computers, mathematical logic and computable functions, synchronous and asynchronous sequential machines, foundations of mathematical linguistics, language generating and recognizing devices, problem-solving heuristics, pattern recognition.

500b. Mathematical Foundations of Computer Science. Selected topics in present research areas in mathematics created by the advent of the computer. Algebraic foundations of Computer Science; mathematical models of computation; Computer-oriented topics in combinatorics, graph theory and probability theory.

501a. Information Structures. Management of information resources by digital computers. Characteristics of basic file structures and strategies for searching and retrieving information from them. Principles of automated text processing and analysis of document contents. Development, implementation, and evaluation of storage and retrieval systems in a resource-sharing computer environment.

501b. Information Structures. Continuation of 501a.

504a. Artificial Intelligence. Formal deductive systems. Predicate logic, Herbrand semantic trees, consistancy and completeness of resolution. Efficiency through refinements of resolution, and search strategies. Implementation of an automatic theorem prover.

504b. Artificial Intelligence. Perceptive systems. Critique of classical pattern recognition, transform techniques, and physiological/psychological analogues. Current research in knowledge-directed systems. Research assignment in vision context.

505a. Problems of Simulation. Extrapolation of time-series data, estimation of extreme values, reduction of variance, comparative study of simulation languages, and investigation of biases and autocorrelations in pseudorandom-number generators.

505b. Computer Simulation of Complex Processes. Use of digital computers to study complex, interactive systems by random sampling methods. Real-time automatic data-acquisition techniques. Formulation and validation of mathematical models, and their use in evaluating alternative policies or predicting system behaviour.

506a. Statistics and Information Processing. Automatic indexing and content analysis by statistical modelling. Characterization of network relationships in information systems. Evaluation of information storage and retrieval systems. Protection methods for real-time systems.

506b. Statistics and Information Processing. Continuation of 506a.

507a. Theory of Data Communication. Sampled-data systems, digital filter design, discrete communication channels (memory-less, with finite memory), coding theory (fixed-length codes, variable-length codes), encoders and decoders.

507b. Theory of Data Communications. Continuation of 507a.

508a. Topics in General Systems. Theory of General Systems and properties common to many or all systems, mathematical models of systems, study and/or mathematical formulation of interaction, dependence and control, self-organization in large systems, specific theories of deterministic and stochastic systems with applications to physical, biological and economic systems.

508b. Topics in General Systems. Continuation of 508a.

512a. Sequential Machine Theory. Basic behavioural and structural properties of sequential machines. Applications and connections to the theories of digital circuits, information-transmission systems and languages.
Prerequisite: CS-313 or equivalent course

512b. Sequential Machine Theory. Selected topics. Continuation of 512a.

513a. Theory of Recursive Functions and Computability. Turing machines, mathematic logic and computable functions, unsolvable problems, degrees of recursive unsolvability, classification of functions by computational complexity.

513b. Theory of Recursive Functions and Computability. Continuation of 513a.

514a. Advanced Programming Systems (Software). Basic architecture or large systems, multiprogramming systems and time-sharing systems (resource allocations, CPU and I/O scheduling algorithms). Measurements on MP and TS systems (benchmarking, hardware monitors, modelling of algorithms), macro processors, compilation.

514b. Advanced Programming Systems (Software). Continuation of 514a.

515a. Advanced Programming Systems (Hardware). Timing analysis of circuits, architecture of small computers, languages for hardware.

515b. Advanced Programming Systems (Hardware). Continuation of 515a.

516a. Computer-Assisted Instructional Systems. Instructional Programming: basic principles, relation to other instructional modes, cybernetic instructional models. The student-machine interface, and its limitations. Computer languages for instructional programming, and interactive authoring systems. Computer systems for CAI: case studies, system size and utilization, economics, and implementation problems. Introduction to generative CAI and computer-managed instruction (CMI). Each student will carry out the analysis and design of a specific instructional program.

516b. Computer-Assisted Instructional Systems. Continuation of 516a. This part is more heavily project oriented, allowing the student to pursue more intensive study of specific topics. The following topics will also be covered: Group dynamics, and CAI as a group technology; the development of CAI materials; analysis of existing materials and research; generative CAI, CMI, and instructional simulation.

523a. Theory of Formal Languages and Automata. Language-generating devices (grammars) and language-recognizing devices (automata). Hierarchies of languages and of automata, operations with languages and classification of languages by various measures of complexity.

523b. Algebraic Theory of Formal Languages. Formal power series in non-commutative variables, rational and algebraic languages and their representations, tensor product and diverse other products of formal power series, transductions and transducers, application to combinatorial (enumeration) problems.

540a. Subroutines for Mathematical Functions. Performance requirements, error measurement, range reduction, polynomial approximation, rational approximation, evaluation of approximations. Knowledge of assembly language programming is desirable.

540b. Numerical Approximation. The general linear and nonlinear approximation problems, Chebyshev approximation, Mean Approximation, approximation of functions of two variables. A background in mathematics is desirable.

545a. Selected Topics in Numerical Analysis. Constructive aspects of the fundamental theorem of algebra; uniformly convergent algorithms for the simultaneous approximation of all zeros of a polynomial; cubically convergent iterative methods for polynomials and entire functions.

545b. Selected Topics in Numerical Analysis. Continuation of 545a.

580. Project.
(Full Course).

590. Thesis.
(Equivalent to two full courses).

DIAGNOSTIC RADIOLOGY

UNIVERSITY HOSPITAL; 2nd Floor

Professor and Chairman of the Department:
Carey, L. S., MD, CM, MSc (Med) Queen's; MS Minnesota; CRCP (C), DABR
Professor:
Allcock, J. M., MRCS, LRCP (Eng), MB, BS London; DMRD (Eng), FFR
Assistant Professor:
Gold, R. E., MD, BSc, Manitoba, CRCP (C)
Clinical Professors:
Johnston, E. E., MD, CM, DMR Queen's; CRCP (C)
Wilkins, W. W., MD, CM Queen's; DMR Toronto; FRCP (C), DABR
Clinical Associate Professor:
Agnos, J. W., MD UWO; DMR Toronto; CRCP (C), DABR
Clinical Assistant Professors:
Coates, R. K., BA, MD UWO; FRCP (C)
MacDonald, A. C. MD UWO; FRCP (C)
Nicol, D. A., BA Saskatchewan; MD, DMR Toronto; CRCP (C), DABR
Rajic, D. S., MD Graz; CRCP (C), DABR
Clinical Lecturers:
Black, J. H. D., MA, MB, BCh Dublin; MRCPI, FRCP (C)
Brown, T. C., MD UWO; CRCP (C)
Edgar, H. W., MD UWO; DMR McGill; CRCP (C)
Greenhow, P., MD Toronto; CRCP (C)
Hamilton, G., MD UWO; FRCP (C)
Harwood, R. A., MD UWO; CRCP (C)
Linsdell, F. J., BA, MD UWO; CRCP (C)
Reid-Smith, E. A. M., BA, MB, BCh Dublin; DMRD London; CRCP (C)

Honorary Lecturers:
Hauch, P. P., MD UWO; DMRD London; CRCP (C)
Hill, M. B., MD, CM Queen's; CRCP (C)
Clinical Instructors:
Coates, C. F., MD Toronto; FRCP (C)
Eakins, T. S. G., MB, BCh Dublin; DMRD London; FFRCS
Lefcoe, M. S., MD McGill; FRCP (C)

Medical graduates with a year of internship are eligible for the fully accredited four year training program in Diagnostic Radiology.

The staff of the University, Victoria, Children's, St. Joseph's, and Westminster Hospitals contributes a broad experience in Radiology and the Radiologic Subspecialties. Several Clinical Fellowships in Cardiovascular Radiology, Neuroradiology, and Radiologic Research are available.

ECONOMICS

SOCIAL SCIENCES CENTRE: Room 4009

Professors:
Bodkin, R. G., BA Swarthmore; MA, PhD Pennsylvania
Brown, T. M., BA UWO; MA Toronto; PhD Australian National
Burley, K. H., BA, PhD London
Courchene, T. J., BA Saskatchewan; PhD Princeton
Melvin, J. R., BSc Manitoba; MA Alberta; PhD Minnesota
Reuber, G. L., BA UWO; MA, PhD Harvard. Dean of Social Science
Wonnacott, R. J., BA UWO; MA, PhD Harvard
Associate Professors:
Berry, R. A., BA UWO; PhD Princeton
Leith, J. C., BA Toronto; MSc, PhD Wisconsin. Chairman of Department
Saraydar, E., BA Syracuse; MA, PhD Rochester
Assistant Professors:
Avio, K. L., BS Oregon; PhD Purdue
Bhatia, K. B., B Com M Com Delhi; PhD Chicago
Blomqvist, A. G., Civ-ekonom Stockholm; PhD Princeton
Boyer, R. S., BA Columbia; MA Wisconsin; PhD Chicago
Burgess, D. F., BA Queen's; MA UWO; PhD Wisconsin
Carter, R. A. L., BA RMC; MA, PhD Queen's
Clark, C. S., BA Queen's; PhD California
Conklin, D. W., BA Toronto; PhD MIT

Dick, T. J. O., BA Carleton; MA Toronto; PhD Washington
Frankena, M. W., BA Swarthmore; PhD MIT
Fried, J. S., BA Stanford; PhD Northwestern
Gately, F. D., BS Holy Cross; MA, PhD Princeton
Haessel, W. W., BSc, MSc, Alberta; PhD Iowa State
Johnson, H. T., AB Harvard; MBA Rutgers; MA, PhD Wisconsin
Ketchum, E. J. D., BA Toronto; MSc, LSE; MA, PhD Princeton
Kirkham, P. G., BASc British Columbia; MBA, MA UWO; PhD Prihceton
May, J. D., B Com Queen's; PhD York (England)
Oaxaca, R. L., BA Fresno State; MA, PhD Princeton
Palmer, J. P., BA Carleton College, Minn; PhD Iowa State
Parai, L., BA Alberta; MA Toronto; PhD Yale
Plourde, C. G., BA, MA Queen's; PhD Minnesota
Rao, V. S., BA Andhra; PhD Minnesota
Scheffman, D. T., BA Minnesota; PhD MIT
Toda, Y., BA, MA Tokyo; PhD Harvard
Vickery, W. E., B. E. Vanderbilt; MBA Harvard; PhD Chicago

The Department offers programs of study leading to the degrees of MA and PhD. In its graduate courses the Department emphasizes a combination of advanced theoretical and quantitative analysis.

Candidates are admitted at the discretion of the Department. The MA program for suitably qualified candidates normally requires one year; the PhD program requires a minimum of two further years of residence.

Detailed information about these graduate programs and their admission requirements may be obtained from the Director of Graduate Studies in Economics, Department of Economics.

COURSES

A full range of advanced courses (at the 600 level) and reading courses (at the 700 level) are available in the subjects listed below.

All courses will not necessarily be offered in any one year; (a) denotes first term and (b) second term.

254. Mathematics for the Social Sciences.

505(ab). Introduction to Econometrics.

510(ab). Mathematical Economics.

533(a). Monetary Theory.

533(b). Monetary Institutions.

534(a). Industrial Organization.

534(b). Industrial Organization Policy.

537(ab). Canadian Economic History.

538(ab). Economic Development.

539(ab). Urban and Regional Economics.

540(ab). Macro-economics.

547(ab). European Economic History.

550(b). Economic Policy Seminar.

551(a). International Trade Theory.

551(b). International Trade Policy.

555(ab). Econometrics.

560(ab). Micro-economics.

563(a). Public Finance.

563(b). Fiscal Economics.

565(ab). Econometrics and Quantitative Methods.

575(ab). Economics of Human Resources.

597(ab). Economic History of the United States.

599(ab). Capital and Growth Theory.

590. MA Thesis.

690. PhD Thesis.

ENGLISH

UNIVERSITY COLLEGE: Room 180

Professors:
Atkinson, W. E. D., BA Cantab; PhD Chicago
Barker, A. E., BA, MA Toronto; PhD London, Professor of Renaissance Literature
Bates, R. G. N., BA, MA, PhD Toronto
Conron, A. B., BA, MA UWO; MA, PhD Harvard
Fleck, P. D., BA, MA UWO; PhD Belfast, Chairman of Department
Graham, J. W., BA Manitoba; MA, PhD Toronto
Hieatt, A. K., BA Louisville; PhD Columbia
Hieatt, Constance B., BA, MA Hunter College; PhD Yale
Klinck, C. F., BA, UWO; MA, PhD Columbia, FRSC, Professor Emeritus
Rans, G., BA, MA Cantab; PhD Leeds
Rajan, B., BA, MA, PhD Cantab, Senior Professor
Reaney, J., BA, MA, PhD Toronto
Sanborn, C. E., BA, MA, PhD Toronto
Sharp, Corona (Sister), BA UWO; MA, PhD Notre Dame
Woodman, R. G., BA British Columbia; MA Manitoba; PhD Toronto

Associate Professors:
Bandeen, Betty I., BA UWO; MA, PhD Radcliffe
Bolgan, Anne C., BA D'Youville; MA, PhD Toronto
Chapin, D. F., BA, MA, PhD Toronto, Chairman of Department Committee on Graduate Studies
Collins, T. J., BA, MA UWO; PhD Indiana
Devereux, E. J., BA, MA Newfoundland; DPhil Oxon
Hair, D. S., BA UWO; MA, PhD Toronto
Kaula, D. C., BA Cornell; PhD Indiana
Parker, G. D., BA Acadia; MA Dalhousie; PhD Toronto
Somerset, J. A. B., BA Toronto; MA, PhD Birmingham
Stingle, R. M., BA, MA Toronto
Wilson, H. R., BA, MA Toronto; PhD Michigan

Assistant Professors:
Dragland, S. L., BA, MA Alberta; PhD Queen's
Hensley, D. H., BA, MA Oregon; PhD Wisconsin
House, G. S., BA, MA, PhD California (Berkeley)
Lundgren, B. R., BA Manitoba; MA, PhD UWO
Straulman, Ann T., BA Wellesley; MA Kansas City; PhD Wisconsin
Surette, Leon, BA Queen's; MA, PhD Toronto
Tausky, T. E., BA McGill; BA Cantab; MA, PhD Yale

The Department offers programmes leading to the MA and PhD degrees in English literature. The regulations governing admission and programme requirements, as well as application forms for admission to the Faculty of Graduate Studies, are available upon request from the Department. All inquiries, requests, and applications for admission should be directed to the Chairman of the Committee on Graduate Studies in English, in care of the Department.

After admission to the programme but before formal registration, the student will be asked to indicate his course preferences for the coming term. The final decision upon admission to particular courses will be made on Course Enrolment Day, the date of which will be announced to students when they are requested to list their preferences. The Department reserves the right to limit enrolment in any course.

GRADUATE

The courses to be offered in 1973-74 are listed below and marked with an asterisk.

The Department offers a number of teaching Assistantships which may be applied for upon admission to the programme.

SUMMER 1973

***522. The Poetry of Chaucer/B. I. Bandeen.** Two additional courses to be announced.

FALL AND WINTER 1973-74

***500. MA Comprehensive.**

503-509. Literary Theory, Genres, and Problems.

***505. Literary Symbolism/J. Reaney.**

***509. 1859-Annus Mirabilis/C. E. Sanborn.**

520-525. Mediaeval Language and Literature.

***520. "Beowulf" and the Old English Heroic Tradition/C. B. Hieatt.**

526-528. Linguistics.

530-539. Renaissance Literature.

***531. Literature of the English Reformation/E. J. Devereux.**

***532. Milton/A. E. Barker.**

***534. Spenser/A. K. Hieatt.**

***535. Shakespeare/W. E. D. Atkinson.**

540-549. Literature of the Restoration and Eighteenth Century.

550-559. Romantic Literature.

***552. Coleridge and Wordsworth/R. G. Woodman.**

560-569. Victorian Literature.

***565. The Poetry of Robert Browning/T. J. Collins.**

570-579. Modern Literature.

***577. Literature of Edwardian England/T. E. Tausky.**

***579. Faulkner/J. W. Graham.**

580-589. North American Literature.

***581. The Sense of "Place" in *Recent Canadian Poetry*/R. G. N. Bates.**

***590. MA Thesis.**

***606. Bibliography and Scholarly Methods/E. J. Devereux and J. A. B. Somerset.** This is a compulsory half-course for all students in the MA Year or in a PhD programme.

610-620. PhD Qualifying Examinations.

***610. Area of Concentration.**

***611. Oral in the Area of Concentration.**

***612. Major Text.**

***613. Old and Middle English.**

***614. Renaissance Dramatic.**

***615. Renaissance non-Dramatic.**

***616. Restoration and Eighteenth Century.**

***617. Nineteenth Century.**

***618. Modern Literature.**

***619. American.**

***620. Canadian.**

***690. PhD Thesis.**

ENGINEERING SCIENCE

ENGINEERING AND MATHEMATICAL SCIENCES BUILDING; Room 2086

Professors:

Beecroft, E. A., BA, MA Toronto; PhD Yale. Professor of Political Science
Bergougnou, MA, MS Nancy; PhD Minnesota
Bulani, W., BSc, MSc Saskatchewan; PhD McGill
Davenport, A. G., BA, MA Cantab; MASc Toronto; PhD Bristol
Foreman, J. E. K., BASc Toronto; MME Cornell
Geach, G. A., BSc, MSc, PhD Sheffield
Inculet, I. I., Dipl. Ing Bucuresti; MSc Laval
Johnson, A. I., BASc Toronto; MChE Brooklyn; PhD Toronto. Dean of Engineering Science.
Lauchland, L. S. ED, BASc, MASc Toronto
Novak, M. Dipl Ing Prague; PhD Acad Sc Prague
Nowak, E. S., BEng McGill; PhD Purdue
Poucher, M. P., BSc, MSc, DIC London
Quigley, R. M., BASc, MASc Toronto; PhD MIT. Associate Professor of Geology
Sullivan, J. L., BS, MS, PhD New South Wales
Zajic, J. E., BA Kansas; MS Wisconsin. PhD California, Davis; JD Oklahoma. Associate Professor of Bacteriology and Immunology
Shelstad, K. A., BE Saskatchewan; MSc Dalhousie; PhD Toronto
Swartman, R. K., BSc, MSc Queen's
Tarazuk, J. D., BASc, MASc Toronto; PhD Saskatchewan

Associate Professors:

Abu-Sitta, S. H., BSc Cairo; PhD London
Beeckmans, J. M., BSc London; MASc, PhD Toronto
Brown, J. D., BSc McMaster; PhD Maryland.
Chess, G. F., CD, BASc Toronto; MEng McGill
Dillon, R. M., BA UWO; SM MIT
Emmerson, G. S., BSc Glasgow; MSc London
Lo, K. Y., BSc Hong Kong; MSc, DIC, PhD London
MacDonald, J. A., BE Be NSTech; MSE Michigan
Olson, A. T., BSc Queen's; MSc Birmingham
Roy, C., BSc Laval; DIC, PhD London
Sheasby, J. S., BSc Birmingham; PhD New South Wales

Assistant Professors:

Baker, C. G. J., BSc, DIC, PhD London
Base, T. E., BSc Bristol; MSc Bristol; MSc Brown; PhD Southampton
Bonnema, T., BSc Queen's; MASc Toronto; PhD Purdue
Castle, G. S. P., BESc, MSc, DIC London; PhD UWO
Dickinson, S. M., BSc, PhD Nottingham
Duerden, I. J., BSc Leeds; DPhil Oxon
Kosaric, N., MESc Zagreb; PhD UWO
Livingstone, C. E., BSc, MSc British Columbia; PhD UWO
Peacock, W. H., BASc, MASc Toronto; PhD Berkeley, Cal.
Sherebrin, M. H., BSc Manitoba; MSc, PhD UWO. Assistant Professor of Biophysics
Svrcek, W. Y., BSc, PhD Alberta
Wilkins, P. O., BMus Roch; MS Hawaii; PhD Pennsylvania. Assistant Professor of Bacteriology and Immunology

Three degrees are offered in Engineering Science. The MESc and PhD are based on research requiring seminar and thesis while the MEng is based on course work, seminar and report. Arrangements may be made for part-time enrolment in all programs.

MESc—All Options

MEng—Chemical, Civil, Mechanical, Environmental and Systems

PhD—Engineering Science

MASTER OF ENGINEERING SCIENCE

For MESc candidates an individual program will consist of a minimum of two graduate courses (or the equivalent), a thesis and a seminar. The program of study for each candidate will be approved by the appropriate Graduate Board. On the advice of this Committee and with the concurrence of the Chairman concerned, candidates may elect or be required to take graduate courses of Honor courses offered in other University departments.

Included are such courses as Mathematics, Computer Science, Chemistry, Physics, Geology, and Medical Sciences, e.g. Biochemistry, Biophysics, Microbiology, etc. The student is encouraged to select the program which best suits his individual interest and aptitude and which meets the general requirements of the Faculty of Graduate Studies.

With the approval of the Dean of the Faculty of Graduate Studies, a candidate for the degree of Master of Engineering Science who is unable to attend full-time study may undertake his course work on a part-time basis provided satisfactory arrangements can be made for his thesis work.

MASTER OF ENGINEERING

Master of Engineering (MEng) programs are designed primarily for the practising engineer and students wishing to obtain specialized academic training beyond the Bachelor's level. Emphasis is placed on specialized techniques, analysis and engineering design, associated with current engineering practices. MEng programs comprise a prescribed set of at least five courses together with a project and engineering report. The requirements are completed within one academic year (8 months) except in the case of part-time candidates.

DOCTOR OF PHILOSOPHY

The program of study for each candidate for the PhD degree must be approved by the Engineering Science Committee on Graduate Studies. The minimum requirements for the degree are listed below.

A. Six courses consisting of at least three from (1) and the remainder from (1), (2) and (3).
   (1) An Engineering Science course at the 500 or 600 level.
   (2) An Engineering Science course, outside the candidate's field of specialization, at a level not lower than 400.
   (3) A course outside the Faculty of Engineering Science at a level not lower than 300.

B. A reading knowledge of at least one language other than English.

C. Comprehensive Examination: an oral or written examination normally taken in the first year of the PhD program. The main purpose of the examination is diagnostic, to assist the student and his committee in recommending a program of study.

D. Seminar: A candidate must prepare and present a paper or papers on his thesis research to the faculty and graduate students. A candidate may be required to submit essays on assigned topics.

E. Thesis. (PhD 690, MESc 590, MEng 500)

Preregistration of courses (deadline August 1st, each year).

COURSES

NOTE: All of the following courses may not be offered or may be offered in alternate years.

500. MEng Project and Report. Investigation of an engineering problem. A detailed engineering report is required and each candidate will present this material in a public lecture. Problems may be assigned in consultation with the candidate's employer./Staff.
(6 hours, both terms).

505. Electronic Instrumentation. Systems of electronic instrumentation for measurement (analog and digital), control, amplification, data processing and generation of time varying signals. (Primarily for non-engineering students; no prerequisites)./T. Bonnema.
(2 hrs/wk lectures, 1 1/2 hrs/wk lab).

511. Applied Catalysis 1. Principles of heterogeneous catalysis. Kinetics and mechanism of selected catalytic reactions. Case studies of several industrial catalysts and associated catalytic processes./K. A. Shelstad.
(2 hour, both terms); (half course).

512. Advanced Chemical Reactor Design. Nonideal flow in chemical reactors and its study through tracers. Micromixing and macromixing. Turbulence and its effect on chemical reactions./M. A. Bergougnou
(2 hours, first term); (half course).

513. Advanced Fluidized Bed Reactor Design. Fundamentals of all operations involving the interaction of fluids and particles. Systematic study of the design and scale-up fundamentals of fluidized bed ractors./M. A. Bergougnou
(2 hours, first term); (half course).

514. Food Engineering. Detailed review and analysis of the processes and operations of Food Production./N. Kosaric
(2 hours, both terms).

515. Biochemical Engineering. The application of the unit operations of chemical engineering to biochemical process. Engineering concepts in the manufacture of beer, cheese, vinegar and other classical fermentation products as presented as well as problems in agitation mixing, aeration and batch fermentation kinetic./J. E. Zajic
(1 hour, both terms); (half course).

516. Chemical Process Simulation. Simulation of chemical plants on the computer. Convergence and optimization problems in chemical plant simulation./A. I. Johnson
(2 hours, both terms).

518. Advanced Process and Plant Design. Process engineering study of a new process. Detailed design of reactors, disillation columns, controls, start-up systems, optimization and simulation./M. A. Bergougnou
(2 hours, both terms).

519. Chemical Engineering Economics. A critical examination of cost factors and of the procedures available for minimizing costs of chemical processes and plants. /C. J. G. Baker
(2 hours, both terms).

520a. Engineering Statistics and Reliability. A basic course in the theory of probability, statistics and reliability with special application to engineering. Discussion of data analysis, probability distributions, sampling theory probability of failure and elementary Bayesian decision theory./A. G. Davenport
(2 hours, first term); (half course).

520b. Random Vibrations. Theory of random vibrations of single and multi degree of freedom linear systems subject to random loading. Steady state response to stationary Gaussian processes, transient response to non-stationary Gaussian loading, and non-stationary response to non-stationary loading is considered. Applications to wind, earthquake and other random loadings./A. G. Davenport, M. Novak
(2 hours, second term); (half course).

521a. Properties of Concrete. Properties of the constituent materials; mix design, rheology of fresh concrete; strength, shrinkage and creep; other topics./M. P. Poucher
(2 hours, first term); (half course).

522a. Advanced Soil Mechanics. Principle of effective stress; shear strength parameters and their relationship, stress-strain-time relationship, and pore pressure equations. Consolidation and settlement. Effect of sample disturbance. Application to the design and construction of various types of shallow and deep foundations./K. Y. Lo, R. M. Quigley
Prerequisite: 426 or equivalent
(3 hours, first term); (half course).

523. Gerotechnical Properties of Soils. The engineering properties of clay soils are related to the clay minerals present, the chemistry of the pore fluid and the fabric of the soil as derived from its environment of deposition. Emphasis is placed on the selection of engineering parameters for design purposes./R. M. Quigley
(3 hours, first or second term); (half course).

524a. Elasticity I. Theory of deformations. Equilibrium equations. Energy principles. Applications./S. H. Abu-Sitta
(2 hours, First term); (half course).

524b. Elasticity II. Fundamental formulae of linear elasticity. St. Venant's problem. Plane problem. Applications. Numerical methods./S. H. Abu-Sitta
(2 hours, second term); (half course).

525a. Plates and Shells. Introduction to the classical analysis of plates and shells. Small deflection behaviour of plates, considering various shapes, loads and boundary conditions./S. H. Abu-Sitta
(2 hours, first term); (half course).

525b. Plates and Shells II. Membrane and bending behaviour of cylindrical shells, translational shells and shells of revolution. Edge disturbance theory. Numerical methods./S. H. Abu-Sitta
(2 hours, second term); (half course).

526. Science of Structures. A fundamental study of structural media and their environment. To include inelastic action, matrix methods, dynamics of structures etc. A critical study of the insufficiency of structures in relation to the actual loads imposed on them./A. G. Davenport
(2 hours, both terms).

527. Reading Course in Engineering Geology. Difficult engineering design and construction problems markedly influenced by geological factors will be studied in detail. Emphasis to be placed on such topics as: aggregate selection for concrete and asphalt mixes, geophysical methods of exploration used in engineering practice, ground water and its importance in design, properties of glacial deposits, frost action, permafrost, etc. This course may also be adapted to the needs of graduate students in other disciplines such as geology and geography to enable them to study special topics in Soil Mechanics. By arrangement only./R. M. Quigley
(half course)

528. Seepage. Fundamentals of ground water seepage with application to engineering design of earth and rockfill dams, large excavations, sheet pile, walls and cofferdams. This course should be of interest to environmental engineers interested in ground water pollution./Staff

Prerequisite: 426 or equivalent
(2 hours, first or second term); (half course).

529a. Foundation Engineering. Current practice in the design of foundations for all types of structures. Spread footing, raft and piled foundations, bulkheads and retaining walls, floated foundations, sheeted excavations, etc./Staff
Prerequisite: 426 or equivalent
(3 hours, second term); (half course).

530. Electric Power Systems. General problems; elements of power systems; parameters of transmission lines, transformers, synchronous and induction machines; voltage regulation; economic operation; power system stability; surge phenomena; special problems of extra-high-voltage transmission./L. S. Lauchland
(2 hours, both terms).

531. Electromechanical Energy Conversion. Dynamic behavior of electromechanical energy converters as individual devices and as inter-connected devices in control systems and in power systems./L. S. Lauchland and I. I. Inculet
(2 hours, both terms).

532. Equivalent Circuits of Electric Machines. General theory of equivalent circuits; primitive and actual machines; symetrical-component theory, transformation from physical to sequence axes; space and time harmonics; interconnected machines./I. I. Inculet
(2 hours, both terms).

535. Advanced Electromagnetic Theory. Potentials, forces, and energy in electro-static and magnetic-static fields, plane waves, cylindrical waves, spherical waves, radiation, boundary value problems./G. F. Chess
(2 hours, both terms).

538. Electrostatic Theory and Engineering Application. Review of basic principles; fields and charges, duality between electrostatics and electromagnetics, bonding theory, theory of metals, semiconductors and dielectrics, static electrification, the corona discharge and discharging of aerosols, electrets. Applications, high voltage electrostatic generators, capacitors, electrostatic precipitation, xerography, electrostatic hazards in industry, static eliminators, etc./I. I. Inculet, J. D. Brown, and G. S. P. Castle
(2 hours, both terms).

539. Aerosol Mechanics. Methods of characterization and collection of aerosol particles for analytical purposes, methods for the generation of aerosols. Basic mechanics of aerosols, theory and practice of industrial filtration; electrostatic precipitators, cyclones, scrubbers etc./J. M. Beeckmans, J. D. Brown, G. S. P. Castle, I. I. Inculet
(2 hours, both terms).

540a. Principles of Nuclear Reactors. Nuclear energy and nuclear reaction, fission process, critical mass, radioactivity, interaction of alpha, beta, gamma and neutron radiation with matter. The principle of the fission chain reactor. Reactor fuels, radiation protection and reactor safeguards./G. S. Emmerson
(2 hours, first term); (half course).

540b. Nuclear Reactor Engineering. Nuclear reactor systems and characteristics. Engineering design aspects — materials, energy removal, power plant./G. S. Emmerson
(2 hours, second term); (half course).

541. Mechanical Analysis and Measurements. Selected topics in mechanical design involving expermental analysis: transducers, instrumentation, techniques and evaluation in temperature, measurement of variable such as strain, pressure, vibration, sound, flow./J. E. K. Foreman
(2 hours, first); (half course).

542a. Viscous and Boundary Layer Theory. Viscosity, review of vectors and tensors, the Navier-Stokes Equations, the viscous flow energy equa-

tion and dissipation function, creeping flow, laminar and turbulent boundary layer, mechanisms of transition; concepts of statistical theory of isotropic turbulence./J. W. Stewart
(2 hours, first term); (half course).

542b. Hydrodynamics. Kinematics and dynamics of two and three-dimensional fluid fields, vortex generation and dissipation, graphical, numerical and analogy methods of solution, conformal transformation and selected topics from thin aerofoil and finite wing theory./J. W. Stewart
(2 hours, second term); (half course).

543a. Classical Thermodynamics. Review of First and Second Law, availability and irreversibility, thermodynamic relationships, and dissociation in chemical reactions./E. S. Nowak
(2 hours, first term); (half course).

543b. Statistical Thermodynamics. Introduction to Kinetic theory of ideal and real gases. Some models for the thermodynamic and transport properties of real gases are developed./E. S. Nowak
(2 hours, second term); (half course).

544a. Conduction Heat Transfer. One and two-dimensional conduction, transient conduction, variable conductivity, numerical solutions and advanced topics./E. S. Nowak
(2 hours, first term); (half course).

544b. Convection Heat Transfer. Governing equations for flow in various coordinate systems. Free and forced convection in internal and external flows, similarity transforms, Reynolds analogy, turbulence, Von-Karmans analogy, liquid metals and selected topics./J. D. Tarasuk
(2 hours, second term); (half course).

545a. Energy Conversion. Review of energy sources, methods of energy release such as combustion, and methods of energy conversion including turbo-machinery, positive displacement machinery and non-conventional methods. Economics of plant selection.
(2 hours, first term); (half course).

545b. Solar Energy Utilization. Nature of solar radiation, flat plate collectors and their design, solar concentrators, solar stills, energy storage, solar power generation, and other techniques of solar energy utilization./R. K. Swartman
(2 hours, second term); (half course).

546a. Advanced Vibrations 1. Free and forced vibrations of lumped and distributed parameter systems like beams and frames; modal analysis of excited vibrations; Rayleigh method; nonlinear and self-excited oscillations and their application to aerodynamic stability of structures and bridges./M. Novak
(2 hours, first term); (half course).

546b. Advanced Vibrations 11. D'Alembert's and Hamilton's principles. Lagrange's equations of motion, generalized coordinates; Ritz and Galerkin methods; vibrations of plates; dynamic stability (parametric resonance); transient vibrations, movable load on beams; integral transforms, particularly Laplace transform./M. Novak
(2 hours, second term); (half course).

547a. Shock Engineering. Analysis of shock loads on simple systems. Revision of Laplace Transform theory. Shock spectra and response spectra with application to crate design. Continuous systems with suddenly applied loads, visco-elastic material models, shock testing techniques and instrumentation, three dimensional stress systems and the derivation of primary and secondary waves. Shock wave theory, the detonation process and detonation waves, shock waves in water./T. E. Base
(2 hours, first term).

548a. Convective Phenomena in Fluids. General dicusision of free convection. Boussinesq approximation.

Plumes, thermals, forced plumes and "buoyant" vortex rings in varios environmental conditions. Density currents. Rayleigh-Jeffreys instability and Bernard cells. Langmuir helical vortices. Bubble induced convection./P. J. Sullivan
(3 hours/week, first term); (half course).

549b. Acoustics and Noise Control. A. Condensation, dilatation and acoustic velocity, the differential equations of the plane and spherical wave and their periodic solution; energy flow, intensity, impedance and power for plane and spherical waver; sound intensity level, power level, and pressure level; sound transmission phenomena; resonators and filter; architectural acoustics. (b) Noise - the hearing mechanism, deafness, threshold shift and recovery; frequency spectrum and banwidth; critical band and masking; loudness, approvance and noisiness; a brief study of some typical noise sources such as automotive traffic; aircraft, ventilating systems and machinery; methods of noise control by damping, isolation, absorption, operating procedures, design./ J. W. Stewart
(3 hours/week, first term).

551. Mechanical Properties of Materials at High Temperatures. Mechanisms of deformation and sources of strength within materials at high temperatures. Failure at high temperatures. The development of materials for use at high temperatures./G. A. Geach
(2 hours, both terms).

552. The History of Materials Science. History of the development and application of materials, its interplay with development and application of materials, its interplay with developments in other learning, technologies, war and the status of nations. Factors which have led to discovery and progress in the uses of materials./G. A. Geach
(2 hours, both terms).

Q554a. X-ray Spectroscopy. Excitation processes, qualitative and quantitative analysis, matrix effects, soft x-ray spectrography, electron probe microanalysis, industrial application./J. D. Brown and I. J. Duerden
(2 hours, first term).

554b. Spectroscopic Methods. Theory and applications of selected methods of spectroscopy including IR, UV, Moss-bauer, etc. Topics chosen on basis of class interests. Staff
(2 hours, second term); (half course).

555. Techniques for the Study of High Temperature Chemical Reactions. Review of chemical thermodynamics, thermodynamic diagrams and calculations, phase stability, shape stability, reaction rate theory, diffusion in solids, application of statistical mechanics, experimental techniques.
(2 hours, both terms).

556a. X-ray Techniques in Engineering. Study of diffraction techniques to determine: alloy composition, composition of soils, concretes, etc., residual stresses, texture structures./I. J. Duerden
(2 hours, first term); (half course).

556b. Advanced X-ray Techniques. Study of x-ray methods for chemical analysis, determination of particle size, grain orientation, crystal structures, (complex) deformation and relaxation./I. J. Duerden
Prerequisite: 556a or equivalent
(2 hours, second term); (half course).

557. Alloy Theory. Electron theory of metals. Factors affecting formation and structure of phases. Types of phases. Thermodynamics of all alloys./I. J. Duerden
(2 hours, both terms).

558b. Electron Microscopy. Electron Optics, diffraction contrast, phase contrast, resolution dark field imaging, identification of dislocations, Bergers vectors, sample preparation electron, diffraction, crystal orientation, lattice parameters./J. D. Brown
(1 hour plus 3 hour Lab., second term), (half course).

559. Advanced Experimental Techniques. Lecture and laboratory course on modern laboratory techniques including temperature measurement, high vacuum systems, controlled atmosphere systems, radiation monitoring, selected specialized x-ray diffraction and spectrographic measurements, high and low temperature electron microscopy./Materials Science Staff
(1 hour lecture, 2 lab hours, both terms).

560. Selected Topics in Biochemical Engineering. Course deals with specialized aeration techniques, viscosity effects, scale-up problems, process optimization and new biochemical products./J. E. Zajic, N. Kosaric
(2 hours, both terms).

561a. Air Pollution Sources and Control. A general introduction to air pollution science and engineering including source types and characteristics, nature and extent of urban air pollution and resulting problems, review of combustion and gas flow systems, description and criteria for selection of control equipment./J. L. Sullivan, J. M. Beeckmans, I. I. Inculet
(2 hours, first term); (half course).

561b. Air pollution Measurements and Surveys. Methods of sampling for particulate and gaseous pollutants, measurement and control of noise, analysis of samples including description of instrumental methods, description and operation of monitoring instruments, calibration procedures, design and conduct of surveys and interpretation of results./J. M. Beeckmans, J. L. Sullivan, J. E. K. Foreman
(2 hours, second term); (half course).

562a. Water Pollution: Biological Unit Processes. Course covers all aspects of biological oxidation, it includes activated sludge, anaerobic digestion, trickling filters, oxidation ponds and lagoons, biological control, odours control, slimes, etc./J. E. Zajic
(2 hours, first term); (half course).

562b. Water Pollution: Chemical Unit Processes. Many subjects are presented. Included are information theory, chemical basis of pollutions, treatment techniques for cyanide, chromium and phenolic wastes. Unit processes discussed are solvent extraction, flotation, chemical treatment, oxidation-education, flocculation and clarification, precipitation, ion-exchange, absorption, wet combustion, incineration, sterilization and disinfection./J. E. Zajic
(2 hours, second term); (half course).

563. Industrial Processes. This course provides a descriptive view of major industrial processes with special emphasis on the operations and problems relevant to control of waste by-products./W. Bulani
(2 hours, first term); (half course).

564. Environmental Biology. A special course covering elemental and theoretical information needed in determining normal and abnormal biological environments. Subjects covered are bacteriology, fungi, viruses, parasitology, nematodes, algae, botany, ecology, etc. Chemical control mechanisms of aquatic life using algicides, herbicides and insecticides will be presented. An extensive laboratory is given in conjunction with this course introducing methods of growth, identification, and control./P. O. Wilkins and D. A. McLarty
(6 hours, first term; 4 1/2 hours, second term).

565. Legal and Administrative Controls of Pollution. Judicial control of pollution through common law, nuisance laws, legislation to regulate and establish standards, structures and control by local governmental authorities, enforcement techniques./P. S. Elder
(2 hours, second term); (half course).

566. Biological and Other Effects of Environmental Pollution. Review of factors including air, water and soil pollution, noise, radiation, etc., and their effects upon man, animals, vegetation, meteorology and economic welfare in terms of overall human society and other eco systems. Covers description of community environmental problems, clinical medicine, physiology, epidemiology survey methodology, interrelationships in ecosystems, global effects including meteorology, etc./J. L. Sullivan, D. B. Shaw
(2 hours, both terms); (half course).

567. Environmental Engineering Seminar. A special course reviewing the latest developments in environmental engineering./J. L. Sullivan
(2 hours, both terms).

568. Environmental Engineering Laboratory. Laboratory in Water Pollution: (1) aeration (2) B.O.D. and C.O.D. (3) activated sludge (4) refuse separation (5) flocculation and clarification (6) flotation (7) lagoons (8) Trickling filter (9) solvent extractions (10) filtration (11) gravity separators (12) emulsion breaking (13) incinerators./J. E. Zajic
(3 hours, first term).

Laboratory in Air Pollution. Methods of sampling and analyzing ambient air pollution, monitoring instruments, particle collection and particle size, frequency analysis, source sampling and analysis, control equipment studies including critical and centrifugal collectors absorption and absorption systems, electrostatic precipitators, etc./J. M. Beeckmans
(3 hours, second term).

569. Pollution Control: Politics, Administration and Finance. A review of institional problems arising in Pollution Control./E. A. Beecroft
(2 hours, first term); (half course).

570. Soil Mechanics Seminar. Lectures and discussions on current engineering projects, research programs, design techniques, etc. The course will include active participation by external practising soils engineers and professors. Students participation will include attendance at all seminars and presentation of up to two seminars each./R. M. Quigley
(2 hours, both terms); (half course).

571a. Turbulent Flow 1 (Random Processes). Description and analysis of stochastic processes, with emphasis on methods of correlation and spectral analysis. A number of laboratory sessions are included; for these use will be made of equipment available at the Boundary Layer Wind Tunnel Laboratory./A. G. Davenport
(2 hours, first term).

571b. Turbulent Flow. An introduction to the statistical theory of turbulence. Mixing length theories and applications to flow in pipes, boundary layers, wakes and jets. Statistical theory and scales, correlations, and spectra./T. E. Base
(2 hours, second term); (half course).

574. Advanced Structural Analysis. Use of numerical and other methods to solve structural problems. Finite Differences. Stiffness Method. Finite Elements Transfer Matrices. Eigenvalue problems. Large systems of equations. Application to high rise building, chimneys, dams, shells, etc./S. G. Abu-Sitta
(2 hours, both terms).

575. Dams and Slopes. Earth and earth-rock dams; design procedures and factors controlling design. Stability conditions at end of construction, steady seepage and drawdown; factors of safety. Cracking of dams; piping design of filters. Control of seepage through and beneath dams. Common mechanisms of failure in dams. Use of observational procedure in earth dam design.

Short and long term stability of natural slopes, excavations and embankments. Strength anisotrophy, stratified soils, fissured clays, residual strength. Analysis of failure and remedial measures./K. Y. Lo
(3 hours, second term); (half course).

576a. Dynamics of Soils and Foundations I. Vibrations of foundations on soil, elastic elements and piles, hammer foundations, turbomachinery frame foundations, pile driving, mechanical models of foundations./M. Novak
Prerequisite: 426 or equivalent
(2 hours, first term); (half course).

576b. Dynamics of Soil and Foundations II. Wave propagation in elastic half space, layered medium and water saturated soils, vibration of rigid bodies on half space, behavior of granular and cohesive soils under the effect of dynamic load./M. Novak
Prerequisite: 576a
(2 hours, second term); (half course).

577a. Rock Mechanics I. Geological and engineering classification of intact and fractured rock. Structural defects and their measurements, mass properties.
Theories of failure of rocks. Stress distribution around an elliptic crack. Griffith and extended Griffith theory of rupture. Phenomenogical theories. Statistical aspect of strength of rock. Mechanical behaviour of rocks. Various types of tensile and compressive tests, and their interpretation. Triaxial testing of intact and fractured rocks. In-situ testing of rock mass./K. Y. Lo
(2 hours, first term); (half course).

577b. Rock Mechanics II. Design problems in rock mechanics. Stability of rock slopes. Foundations on rock. Tunnels. Stabilization. In-situ stresses and their measurements. Case records./K. Y. Lo
(2 hours, second term); (half course).

578. Soil Engineering Laboratory. Laboratory Testing techniques including triaxial, consolidation, direct shear, special compaction and stabilization, clay mineralogy by x-ray diffraction and fluorescence, aggregate classification, etc./Staff
(3 hours, both terms); (half course).

579. Structural Design and Behavior. The purpose of this course is to study selected design situations chosen to illustrate a variety of structural problems and to apply analytical techniques discussed in lectures to those problems in a design context./A. G. Davenport
(1 hour/lecture, 3 hour lab. both terms).

580b. Selected Topics in Urban Engineering. This is a lecture/seminar course which examines the urban and regional development trends in Canada. The course is developed on a case history basis and is intended to enable students with an engineering background to relate their special interest areas to selected problems./S. Janes
(2 hours, second term); (half course).

581a. Thermodynamics of Multicomponent Systems. Review of the thermodynamics of multicomponent liquidvapour systems. Application of computer methods for the prediction of equilibrium date./J. M. Beeckmans
(1 hour, both terms); (half course).

581b. Multicomponent Distillation. Review of modern methods for analyzing the fractionation of multicomponent systems in a distillation column./J. M. Beeckmans
(1 hour, both terms); (half course).

582. Chemical Process Control. Application of feed-back, feed-forward, adaptive and direct digital control to chemical processes./Staff
(2 hours, both terms).

583a. Air pollution Control Equipment Design. Theory of operation and design of air pollution control equipment, including gas scrubbers, absorption and absorption incineration, electrostatic precipitation, venturi scrubbers, filtration in inertial and centrifugal separation devices./J. M. Beeckmans
(2 hours, first term); (half course).

583b. Air pollution Control Systems. Criteria for the selection and specification of air pollution control equipment, case studies of industrial air pollution problems and the control measures implemented to control them, economic studies of control systems and analysis of future trends./J. M. Beeckmans, J. L. Sullivan
(2 hours, second term); (half course).

584a. Computer Aid Process Analysis and Design: Part 1. Deterministic modeling of system components and a review of the numerical methods that are useful in digital computer modeling of systems./A. I. Johnson
(2 hours, first term); (half course).

584b. Computer Aided Process Analysis and Design: Part 2. A review of steady state and dynamic simulation, but emphasis on design of systems using a modular approach and including optimization of such systems./A. I. Johnson
(2 hours, second term); (half course).

590. MESc Thesis.

591. Design of Materials. Nuclear Materials: Physical properties of fissile and structural materials for nuclear reactors; thermal and irradiation effect; principles of fuel element design; behaviour of fuel elements in service. Design of Strong Alloys: Improvement of mechanical properties such as, Young's modulus, damping capacity, yield strength, resistance to brittle fracture, fatigue and creep strength./C. Roy
(2 hours, both terms).

592. Vibrational and Acoustics Laboratory. It is recommended that 549b be taken concurrently. Experiments conducted to illustrate: the use of instrumentation in sound and vibration analysis; vibration analysis of discrete mass; continuous systems and functioning mechanical equipment; determination of acoustic properties of materials and enclosures; frequency analysis, sound level and loudness measurements; measurement of air-borne and structure-borne sound./T. E. Base, S. M. Dickinson, J. E. K. Foreman, J. W. Stewart
Prerequisite: 466 or equivalent
(1 hour plus 3 hour lab. both terms).

593. Applied Thermodynamics and Heat Transfer Laboratory. Topics to be covered will include metrology, P-v-T measurements of engineering fluids, boundary layer studies by shadow graph schlerien and interferometry, heat transfer from various geometries; combined modes of heat mass and momentum transfer, visual aids and films will be extensively employed. An experimental and/or design project will be required as part of the course./T. E. Base, E. S. Nowak, J. D. Tarasuk
(1 hour plus 3 hour lab., both terms).

594. Dynamics of Mechanical Systems. A review of the principles of Newtonian and Lagrangian Mechanics, together with selected topics in dynamics of reciprocating and rotating machines, including analysis of gas and inertia forces, bearing loads, rocking and beaming couples of typical reciprocating engines, balancing of rotating and reciprocating machines. The course is designed to compliment and should be taken in sequence with 546 (Advanced Vibrations)/ J. W. Stewart
(2 hours, first term).

611. Applied Catalysis II. A continuation of the subject matter of 511 with emphasis on recent developments and the theory of heterogeneous catalysis./K. A. Shelstad

Prerequisite: 511 or equivalent
(2 hours, both terms).

612. Selected Topics in Chemical Engineering. The choice of topics discussed varies somewhat from year to year but centres about electrostatic charge and field effects on chemical and physical rate processes./W. Bulani
(2 hours, both terms).

613. Advanced Mathematics for Chemical Engineers. Application of operational and matrix calculus to the solution of complex chemical engineering problems./M. A. Bergougnou
(1 hour, both terms); (half course).

620a. Advanced Science of Structures. Advanced problems and more detailed application such as the design of tall buildings, towers suspension bridges./A. G. Davenport
Prerequisite: 520a and b or equivalent. A continuation of 520a and b.
(2 hours, first term); (half course).

620b. Advanced Science of Structures II. A continuation of 620a./A. G. Davenport
Prerequisite: 620a or equivalent
(2 hours, second term); (half course).

622a. Advanced Topics in Geotechnical Engineering I. Recent advances in theories, application and design concepts in soil and rock mechanics. Anisotrophy and inhomogeneity in geotechnical materials and other selected topics, included case histories of difficult design and construction problems./K. Y. Lo
(2 hours, first term); (half course).

622b. Advanced Topics in Geotechnical Engineering II. Continuation of "a" above./K. Y. Lo
(2 hours, second term); (half course).

643a. Radiative Heat Transfer. A study of the Physics and the application of thermal radiation heat transfer which will include thermal radiation laws, characteristics of ideal and real systems, energy exchange concepts, geometric factors, energy exchange in grey enclosures, non-grey and non-diffuse system analysis, and energy transfer in absorbing and emitting media./J. D. Tarasuk
(2 hours, second term); (half course).

643b. Advanced Topics in Thermodynamics and Heat Transfer. Selected topics which can be chosen to meet the needs of the class./E. S. Nowak
(2 hours, second term); (half course).

651a. Crystal Plasticity. Introductory survey outlining the basic ideas of dislocation theory. Dislocations in real crystals e.g., the arrangement of dislocations in crystals and their interaction with other lattice defects. Defects in quenched and irradiated crystals. Review of the application of dislocation theory to studies of certain specific processes in crystalline materials e.g., crystal growth, work hardening, fracture etc./C. Roy
(2 hours, first term); (half course).

660. Biochemical Engineering Design. Design of all types of bioreactors are reviewed, e.g. open, closed, "4 phase", packed bed, etc. Also design features of all unit operations used to support the bioreactor and selected recovery processes are covered./J. E. Zajic, N. Kosaric
(2 hours, both terms).

690. PhD Thesis.

910. Chemical and Biochemical Engineering Seminar. Review of research areas particularly under investigation at Western, other universities and industry. The objective is to develop the informational retrieval and oral and written communication skills of the student and to broaden his knowledge in current chemical and biochemical research areas./Staff
(2 hours, both terms).

920. Civil Engineering Seminar./Staff.
(2 hours, both terms).

930. Electrical Engineering Seminar. Seminar series dealing with contemporary problems and advances in electrical engineering. Topics to be covered will depend upon student and

faculty interest and will deal with subject matter other than just the students' research interest./Staff
(1 hour, both terms).

662a. Industrial Waste Water Treatment Systems. Criteria for selection and specification of operations and equipment and their implementation in industrial waste water treatment systems. Problems related to water pollution control in industrial and municipal chemical and biochemical treatment systems./N. Kosaric, J. E. Zajic
(2 hours, first term).

662b. Industrial Waste Water Treatment Design. Selected industrial problems in waste water treatment and design of chemical and biochemical treatment systems for specific industries such as pulp and paper industry, large chemical industry, petrochemical and petroleum industry, integrated iron and steel industries and selected food industries./N. Kosaric, J. E. Zajic
(2 hours, second term).

EPIDEMIOLOGY & PREVENTIVE MEDICINE

MEDICAL SCIENCES BUILDING, Room 115

Professors:
Buck, Carol W., MD, PhD UWO, Chairman of Department
McWhinney, I. R., MB, BSc, MD Cambridge
Associate Professors:
Rand, C. G., BA Mt. Allison; MD, CM McGill; MPH Harvard, FRCP (C)
Stavraky, Kathleen M., MD, PhD UWO
Wanklin, J. M., BA, PhD UWO
Assistant Professors:
Robertson, J. McD., DVM Toronto, MSc Pennsylvania
Sangal, S. P., MSc Dehra Dun India, PhD Johns Hopkins
Thurlow, H. J. A., BA, MA, MD UWO
Williams, J. I., BA Nebraska Wesleyan; MA New Hampshire; PhD Florida State

Graduate training programs, leading to the MSc or PhD degree in Epidemiology are available for a limited number of qualified students with backgrounds in medicine, nursing, biology, mathematics or the social sciences. It is also possible for physicians proceeding to the Fellowship of the Royal College in some specialities to take Epidemiology as their basic science.

While the department is prepared to supervise students working in most areas of epidemiology, the principal subjects of research interest include the epidemiology of chronic diseases (especially neoplastic disease and mental illness), child development, and health care.

Applicants must hold an Honors Bachelor's degree or equivalent from a recognized university. Course requirements will be decided on an individual basis but, as a minimum, all students will be required to complete successfully Epidemiology #510, 530, 610 and 611 or present evidence of satisfactory equivalents. All courses will not necessarily be offered each year. Two academic years are usually needed to complete a Master's program. A one year program may be approved, however, after consultation with the department.

Students must meet all the requirements of the Faculty before graduation. The second language credit is not required by this Department. In addition to the

requirements laid down by the Faculty of Graduate Studies, the student must attain a mark of at least 70% in each of the courses taken for credit within this department. Should the student fail to attain a mark of 70% in any such course, he will be required to write a special examination in which he must attain a mark of at least 70%. A student will not be permitted to write a special examination in more than two such courses while completing the course requirements for a degree in this Department. Special examinations must take place prior to registration for the next fall term.

The candidate will be required to submit a draft of his research project, which is acceptable to his supervisory committee, prior to the completion of the third term of his program. Failure to achieve this after appropriate guidance from his supervisors will necessitate withdrawal from the graduate program.

Criteria of acceptability for a Master's project will differ from those at the doctoral level in that the former will require less originality in subject and/or design. Should any problem arise in connection with the research proposal or any other academic matter, the student shall have the right to approach the Departmental Graduate Studies Committee directly.

COURSES OFFERED

510. Biostatistics. An introduction to the fundamentals of experimental design and data analysis.
(Half year).

521. Epidemiology in Family Medicine. This course deals with the application of epidemiologic methods to research in the following aspects of family practice: diagnosis, natural history of disease, case-control and cohort studies of etiology, clinical trials and the evaluation of innovations in methods of practice.

524. Social Epidemiology. Offered jointly with the Department of Sociology. It will include an examination of social epidemiological methods, patterns of acute and chronic morbidity, and the effects of social and psychological factors on health behaviour.
(Half year).

530. Fundamentals of Epidemiology and Biostatistics. An introductory course in epidemiology and statistics for those with no background in the area. It includes an introduction to vital statistics, demography, research methods, and the need for statistical analysis of data.

545. Community Aspects of Mental Health. Offered jointly with the Department of Sociology. It will include a study of the incidence and prevalence of mental disorders, their interrelationship with socio-cultural and emotional factors, and an evaluation of selected mental health programs and services.
(Half year).

546. Health Care Organization. Offered jointly with the Department of Sociology. It will include an analysis of the distribution of health resources with special consideration given to the effectiveness of health care delivery, public health policy, the health professions, and medical economics.
(Half year).

590. MSc Thesis.

610. Principles of Epidemiological Research. This course deals with the logical foundations of epidemiology, the strategies available for epidemiologic investigations, techniques for the acquisition and processing of data, specific methods for the conduct of controlled therapeutic trials and the special problems arising in the evaluation of quasi-experimental procedures.
(Half year).

611. Biostatistics. Statistical methods of particular importance in epidemiology.
Prereq: Epidemiology 510 or its equivalent.
(Half year).

612. Selected Topics in Epidemiology. A reading course on some specialized aspects of epidemiology, health care or biostatistics, chosen by the student in consultation with his or her supervisor. For doctoral students with departmental approval.

690. PhD Thesis.

FRENCH

UNIVERSITY COLLEGE, Room 135

Professors:
Bush, W. S. BA John B. Stetson Un.; MA South Dakota; DU Paris
Lenardon, D. BA, BEd Alberta; MA, PhD Toronto
Sanders, J. B. BA, MA Manitoba; DU Paris
Torrens, R. W. BS Dartmouth; MA Harvard; PhD Cornell; Emeritus
Tuchmaier, H. BA Southwest Missouri; MA, DU Laval
Venesoen, C. A. LèsL, DèsL Laval

Associate Professors:
Balsé, M. L. BA, MA, PhD Bombay; DU Paris
Creighton, D. G. BA, MA Toronto; PhD Columbia
Forsyth, L. H. BA Sask.; MA, PhD UWO
Heller, L. M. BA, MA, PhD Wisconsin
Issacharoff, M. BA London; DU Strasbourg
Jones, D. F. BA Smith; MA Columbia; PhD Brown
Walters, R. L. BA Oberlin; MA, PhD Princeton

Assistant Professors:
Arnold, I. BA London; MA British Columbia; PhD Toronto
Atance, F. R. BA Toronto; MA Nebraska; PhD UWO
Baguley, D. BA Nottingham; MA Leicester; DU Nancy
Holder, A. M. BA, MA, PhD Toronto
Ross, M. H. BSc Dalhousie; LèsL. Orléans-Tours; MA Dalhousie; D3eC Orléans-Tours
Saraydar, A. C. BA California (Los Angeles); MA Chicago; PhD Berkeley
Youssef, Z. LèsL. Lausanne; DU Paris

The Department of French offers programs leading to the degrees of MA and PhD. The special regulations governing these degrees are available on request from the Department of French.

There are two methods of qualifying for the MA degree. The student may take three courses and write a thesis, or he may take four courses and write an Extended Essay. One of the courses in each option will be a combination of two compulsory half courses in advanced French composition and in research methods. Students must obtain an overall B average in their course work for the MA.

Candidates for the PhD degree are required to take four courses beyond the Master's degree and to write, under supervision, a doctoral dissertation. One of the courses will be a combination of two compulsory half courses in advanced French composition and in research methods. This latter requirement may be waived by special permission of the Department. Students must maintain a substantial B average in their course work for the PhD.

The Department of French offers graduate courses during the summer.

COURSES

The Department of French does not offer all the courses listed below in any one Academic Year. Most of these course titles refer to a general area of study. Specific content of the courses offered each year will be outlined in a booklet issued by the Department in January.

500. MA Extended Essay*.

510. Advanced French Composition*. (Compulsory half course for MA and PhD candidates).

520. Research Methods*. (Compulsory half course for MA and PhD candidates).

530. Literary Criticism*.

540. General Linguistics.

541. Old French: Language and Literature.

560. The Literature of French Canada*.

562. XVIth Century French Humanism.

563. XVIth Century French Poetry.

570. XVIIth Century French Tragedy.

574. French Classical Thought.

575. XVIIth and XVIIIth Century Comedy*.

580. XVIIIth Century French Thought.

585. XVIIIth Century French Novel.

588. Art and Literature.

590. MA *Thesis**.

591. The Romantic Movement.

592. Symbolist Poetry*.

593. XIXth Century French Theatre.

597. XIXth Century French Novel.

598. XIXth Century French Thought.

600. XXth Century French Poetry.

610. XXth Century French Theatre*.

620. XXth Century French Novel.

630. XXth Century French Thought.

690. PhD Thesis*.

* Course offerings for 1973-1974 (Fall and Winter Term). For more details, consult Departmental booklet.

GERMAN

Professors:
Immerwahr, R. M., AB Swarthmore; MA Northwestern; PhD California (Berkeley), Chairman of Department
Tracy, G. L., BA Queen's; MA, PhD Wisconsin
Associate Professors:
Anderson, A. R., BA Toronto; PhD Brown
Schlütter, H. J., PhD Kiel
Spencer, Hanna, PhD Prague
Assistant Professors:
Purekevich, Renata, BA, MA, PhD UWO
Calbert, J. P., Licentia Louvain; PhD Indiana
Instructor:
McConnell, W., BA McGill; MA Kansas

The Department of German offers courses leading to the degree of MA and PhD. There are two ways of qualifying for the MA degree: the student may take three courses and write a thesis or he may take four courses and submit a formal seminar report. All MA candidates will take a departmental oral examination.

Candidates for the PhD are required to take at least four courses beyond the Master's degree and to write, under supervision, a dissertation. Applicants should be graduates of an Honors Program in which German is one of the major subjects, or its equivalent.

Not all of the following courses are offered in any one year. Normally, each member of the Graduate Faculty offers only one course a year, and only those courses are offered for which there is sufficient demand.

COURSES

500. Reading and Research. (Work with individual students on special reading and problems of critical evaluation).

501-505. Special topics.

506. Linquistics and Literary Style.

508. New Linguistic Approaches to the Structure of German.

520. Middle High German and Early New High German. (Phonology, Morphology, Syntax and Readings)

523. Mediaeval German Literature.

530. German Literature of the Reformation, Counter Reformation and Baroque.

540. Lessing and his Age.

545. The Pre-Romantic Period and Sturm und Drang.

550. Studies in Goethe.

551. Goethe's Faust.

552. Schiller.

560. The Romantic Period.

570. Nineteenth-Century German Drama.

571. The Novel of the Nineteenth Century.

572. Nineteenth-Century German Poetry.

573. Heine. Das Junge Deutschland.

574. Stifter and Keller.

575. Shorter prose from 1830 to the Present.

580. Twentieth-Century German Drama.

581. The Twentieth-Century German Novel.

582. Topics in Twentieth-Century German Poetry.

590. MA Thesis

The following half-courses will be given in 1973-1974:

501. Metaphorical Language in German Poetry from Expressionism to the present day (J. P. Calbert).

523. Heroic Poetry from the Iliad to Stifter (W. McConnell).

551. Goethe's Faust (H. J. Schlutter).

560. The Romantic Period. Holderlin (R. Immerwahr).

571. Theodor Fontane (A. Anderson).

575. Shorter Prose from 1830 to the present (H. Spencer).

582. Topics in Twentieth-century German Poetry (G. L. Tracy).

582. Topics in Twentieth Century German Poetry. Gottfried Benn. (R. Purekevich)

GEOGRAPHY

SOCIAL SCIENCES CENTRE, Room 2432

Professors:
Hossé, H. A., BA, MA Manitoba PhD Ottawa; Professor Political Science
Nelson, J. G., BA McMaster PhD John Hopkins
Nicholson, N. L., BA, MSc UWO PhD Ottawa, Senior Professor
Packer, R. W., BA, MA Cantab
Philbrick, A. K., BA, MS PhD Chicago
Pleva, E. G., BA, MA, PhD Minnesota, LLD, Waterloo Lutheran
Warntz, W., BS, PhD, Pennsylvania; Chairman of the Department
Associate Professors:
Bjorklund, Elaine M., BSc Utah, MA Washington, PhD Chicago
Day, J., BSc, MSc, UWO, PhD Chicago
Goodchild, M. F., BA Cantab, PhD McMaster
Janelle, D. G., BA SW Louisiana, MA, PhD Michigan State
Langtvet, O. P., CMag, CPhil Oslo
McDaniel, R., BA, MA UWO
Sim, V. W., BA McMaster, MA Clark, PhD McGill
Taylor, H. W., BA Westchester State, MA Indiana, PhD Maryland
Whebell, C. F. J. BA, MSc, UWO, PhD London
Wightman, W. R., BA, MA UWO, PhD Durham
Assistant Professors:
Butler, P. W., BA Nottingham
Code, W., BA Queens, PhD California, Berkeley
King, R. H., BSc Wales, MSc Aberdeen, PhD Saskatchewan
Smith, T., BA Cambridge, PhD John Hopkins
Troughton, M. J., BA, MA, B. Litt Oxford, PhD UWO
White, R., BA Swarthmore, MA, PhD North Carolina

The Department offers programs leading to the MA, MSc, and PhD degrees in Geography. The Department is prepared to supervise research within the principal interests of its staff, but particularly in the research foci of human geography (cultural, economic, historical, urban, political and agricultural), regional geography (particularly in the Western Hemisphere and Canada), resources planning, physical geography, and theoretical spatial systems.

ADMISSION

Applicants for entry into the Master's program must have an Honors Bachelor's degree or equivalent in Geography with at least a B average from a recognized university, or have a degree in some other program with at least a B average and have completed a series of courses to the satisfaction of the Department. Applicants for the PhD program who hold a Master's degree or equivalent are accepted at the discretion of the Department.

DEGREE REQUIREMENTS

The Master's Thesis and the PhD Dissertation represent the end products towards which the program is directed. All degree candidates must defend their thesis/dissertation at an oral examination. All graduate students must complete a program of courses consisting of Geography 543/643 (Field Research), and additional courses as specified at a diagnostic interview prior to registration. Master's students must also complete Geography 598 (Forum on Geographic

Methodology). PhD candidates are required to demonstrate a reading knowledge of a language other than English which is acceptable to the Department.

Additional information on admissions, programs and regulations is available from the Coordinator of Graduate Studies, Department of Geography.

500a. Analysis of Spatial Pattern. Methods for the description and analysis of geographic pattern. Probabilistic pattern-generating models, and optimising methods. M. Goodchild
(2 hours lecture), Half Course.

500b. Models of Geographical Choice and Decision. Contemporary methods of analysis appropriate to consumer and recreational behavior, resource management and other applied fields. Scaling, preference structures and the analysis of qualitative data. M. Goodchild
(2 hours Lecture), Half Course.

522. Development Aspects in Industrializing Nations. (offered jointly with the Department of Political Science and Sociology). R. G. Cecil (Geography), J. Kunkel (Sociology), and A. Craig (Political Science). Area of concentration is Latin America; depending on students' interest, other areas may be considered: the social, economic, political and spatial structure and interrelated development problems in selected countries or regions.

530. Advanced Climatology. R. G. Packer
(2 hours Seminar), Full Course.

531a. Slope Processes and Development. A critical examination of geomorphic processes operating on slopes and the development of slopes. R. G. Packer, and R. King
(1 hour Lecture/3 hours Labs), Half Course.

531b. Pedogenic-Geomorphic Interactions. A review of pedogenic pathways and an analysis of the spatial interactions between geomorphic processes and pedogenesis in selected case studies. R. G. Packer, and R. King
(1 hour Lecture/3 hours Labs), Half Course.

532a. Cultural Geography. The course examines the role of perception in the contexts of scientific and humanist viewpoints. Based upon a review of pertinent selections from literature, it presents a systematic theory of the spatial characteristics of culture. A. K. Philbrick
(Seminar), Full Course.

532b. The Geography of Cultural Conflict. Models of intercultural conflict evaluated and developed. This course is primarily devoted to student seminars where application of the concepts examined in Geography 532a. and the ideas of the students are developed. Seminars cover a wide variety of topics, changing flexibly with the individual interests and capabilities of the group. A. K. Philbrick
(Seminar/Tutorial), Half Course.

533a. Urban Spatial Models. A critique of urban spatial models, including a review of recent literature emphasizing the development of inter-urban systems and the behavioral base of urban spatial structure. Problems of time-spatial forecasting and techniques of simulation are considered. D. G. Janelle
(2 hours Seminar/2 hours Tutorial), Half Course.

533b. The Geography of Urban Conflict. Models of ecological-spatial structure, decision making and conflict resolution evaluated with respect to inter-cultural and locational conflicts in the city. A review of the literature and relevant techniques is included. D. G. Janelle
(2 hours Seminar/2 hours Tutorial), Half Course.

534a. Urban Planning. Problems of urbanization; concepts and processes of planning for urban development; critical evaluation of current practices. H. A. Hossé
(Seminar), Half Course.

534b. Regional Planning. Systems approach to comprehensive regional development; spatial relationship of interactions within a region: examination of selected regional development schemes. H. A. Hossé
(Seminar), Half Course.

535a. Development and Management of Natural Resources and the Environment. Use and deterioration of resources, landscapes and environment. Advanced studies of theory, practice, and problems. J. C. Day and J. G. Nelson
(2 hours Seminar), Half Course.

535b. Development and Management of Natural Resources and the Environment. Use of resources and environment. Integration of approaches with emphasis on case studies and current practice. J. C. Day and J. G. Nelson
(2 hours Seminar), Half Course.

537. Recreation Resource Analysis. The use of land and water for leisure and an analysis of factors affecting the variation in development and type of recreational activities; regional recreation resources; international aspects of the tourist industry. R. W. Butler
(2 hours Seminar), Full Course.

539a. Evolving Concepts of Analyzing and Forecasting Spatial Development. A conceptual examination of the methods for investigating and forecasting spatial change including linear algebra, technological forecasting, simulation, historical analogy, mosaic synthesis and electronic display. R. McDaniel
(2 hours Seminar), Half Course.

539b. Design of Future Spatial Systems. An investigation into the social and technological changes which may significantly influence the future spatial patterns of human activities. Problems considered relate to substantive spatial change, new approaches to spatial research and spatial design criteria. R. McDaniel
(2 hours Seminar), Half Course.

540. Political Geography Seminar. A study of the spatially-derived elements of political systems; models of territoriality; and selected themes and case studies. C. F. J. Whebell
(2 hours Seminar), Full Course.

543. Field Methods and Practices. Departmental field camps and field trips as arranged. Mandatory for all MA students. Staff

545. Studies of the Great Lakes Basin. E. G. Pleva.
(2 hours Seminar).

547. Studies in Historical Geography. Methods, techniques and current research with special reference to Canada and Ontario. W. R. Wightman
Prerequisite: By Permission
(Lecture/Seminar), Full Course.

550a. Selected Topics in Geography. Staff.
(Seminar/Tutorial), Half Course.

550b. Selected Topics in Geography Staff
(Seminar/Tutorial), Half Course.

560. Canada. Current research problems of national significance with emphasis on resource survey and development. N. L. Nicholson
(Seminar), Full Course.

569. Polar Lands. Recent research in the physical geography of polar lands; analysis of the cultural and economic factors involved in the development of polar areas. O. P. Langtvet
(Seminar), Full Course.

570. Latin America. Discussion of the problems of Latin America with particular emphasis on emerging social patterns and resource development. H. W. Taylor
(2 hours Seminar), Full Course.

581. Biogeography. Principles of the distributional patterns of plants and animals with special reference to southwestern Ontario. Staff
(2 hours Seminar), Full Course.

598. Graduate Forum on Methodology. W. Code, and H. W. Taylor
(Seminar).

643. Field Research Methods. Departmental field camps and field trips as arranged. Mandatory for PhD students. Staff

645. Problems in Environmental Analysis. E. G. Pleva.
(2 hours Seminar), Half Course.

590. MA Thesis. Staff.

650a. Selected Topics in Geography. Staff.
(Seminar/Tutorial), Half Course.

650b. Selected Topics in Geography. Staff.
(Seminar/Tutorial), Half Course.

690. PhD Dissertation. Staff.

698. Advanced Methodology. Staff.

NOTE: All the Courses listed above are not offered every year. Consult with the coordinator of Graduate Studies for specific information.

GEOLOGY

BIOLOGICAL AND GEOLOGICAL SCIENCES BUILDING, Room 128a

Professors:
Fyfe, W. S., BSc, MSC, PhD Otago, New Zealand. FRS. Chairman of Department
Dreimanis, A., Mag.rer.nat Riga; DSc Waterloo
Hutchinson, R. W., BSc UWO; MSc, PhD Wisconsin
Reavely, G. H., BA, MA UWO; DIC London. Emeritus
Suffel, G. G. BSc, MSc Queen's; PhD Stanford. Emeritus
Winder, C. G., BSc UWO; MSc, PhD Cornell
Associate Professors:
Church, W. R., BSc, PhD Wales
Edgar, A. D., BA, MSc McMaster; PhD Manchester
Fleet, M. E., BSc, PhD Manchester
Lenz, A. C., BSc, MSc Alberta; PhD Princeton
MacRae, N. D., BSc Queen's; MSc, PhD McMaster
Starkey, J., BSc, PhD Liverpool
Sutterlin, P. G., BSc McMaster; PhD Northwestern
Young, G. M., BSc, PhD Glasgow
Assistant Professor:
Hodder, R. W., BA Queen's; PhD California, Berkeley
Honorary Lecturers:
Bancroft, G. M., BSc, MSc Manitoba; PhD Cambridge. Associate Professor of Chemistry
Palmer, H. C., BSc St. Francis Xavier; PhD Princeton. Associate Professor of Geophysics
Quigley, R. M., BASc, MASc Toronto; PhD MIT. Associate Professor of Engineering Science
Whiteside, H. C. M., BSc London; MSc Witwatersrand; PhD London. Anglo American Corporation

GRADUATE

ADMISSION

Detailed instructions may be obtained by writing the Graduate Student Co-ordinator, Department of Geology.

MSc degree: Minimum requirements are two graduate or equivalent courses, one year residence, seminar, and thesis.

PhD degree: Minimum requirements are oral qualifying examination, three years' residence credit, foreign language to the satisfaction of the Department, seminars, and thesis.

RESEARCH INTERESTS OF THE DEPARTMENT

Details on these abbreviated listings can be obtained from the Chairman of the Department or a member of faculty as indicated by course offerings. Generally, financial assistance for research is available for these studies.

X-ray crystallography and crystal structure determinations

Experimental petrology, mineralogy of undersaturated alkaline rocks and eclogites

Experimental studies of ore transport and high temperature fluid chemistry

Crystallography and phase chemistry of sulphide minerals

Structural geology of western Newfoundland and the Proterozoic in Ontario. Ultramafic rocks, ophiolites and high-pressure mineral assemblages

Archaean tectonics and magmatism

Genesis and metamorphism of base metal sulphide ores

Origin of mineral deposits, particularly rare-element pegmatites and evaporites

Lower and Middle Paleozoic stratigraphy

Glacial and Pleistocene geology especially sedimentation and stratigraphy

Invertebrate paleontology especially Paleozoic brachiopods, corals, graptolies and conodonts

Proterozoic sedimentation and stratigraphy especially Ontario

Systems design for computers, especially storage and retrieval

Department facilities and equipment, and financial assistance is summarized on the graduate poster, available upon request

An interdisciplinary **Quaternary Discussion Group** including participants from the fields of geology, geography and engineering meets on a regular basis.

COURSES

***511. Ore Mineral Studies.** Discussions on recent advances in ore mineralogy and parallel laboratory studies. M. E. Fleet
4 hours, lecture and lab, Half course.
*(Proposed 1973-74)

515(a). Advanced Mineralogy and Crystallography. Techniques for the analysis of solid materials: x-ray diffraction (powder methods), x-ray fluorescence, electron microprobe, atomic absorption, standard chemical and spectrographic methods, Mossbauer spectroscopy. Staff
3 hours, lecture and lab, Half course, first term.

515(b). Advanced Mineralogy and Crystallography. Selected topics in advanced mineralogy and crystal chemistry. J. Starkey
3 hours, lecture and lab, Half course, second term.

517. Advanced X-ray Crystallography. The fundamentals of X-ray crystallography and space group theory. Single crystal X-ray investigation. Crystal structure analysis. X-ray techniques applicable to polycrystalline aggregates to determine grain size, strain residual stress, preferred orientation. J. Starkey
3 hours, lecture and lab, Half course, second term.

520. Igneous Petrology. Selected topics in theoretical experimental and chemical aspects of igneous petrogenesis and their relationship to field observations. A. D. Edgar
Prerequisite: Geology 420 or equivalent
4 hours, lecture and lab.

521. Volcanology. The nature and origin of volcanic phenomena in the light of direct experimental results, theoretical considerations, and field observation. The distribution, products, mechanism of eruption with detailed description of selected oceanic and continental volcanic districts. The application of volcanology to igneous petrogenesis and tectonism throughout geological time. Registration by permission. A. D. Edgar, R. W. Hodder
4 hours, lecture, lab. and seminar.

525. Metamorphic Petrology. Paragenesis of metamorphic mineral assemblages. The relations between lithostatic and fluid pressure, stress, and kinetics in the range of metamorphic temperatures are considered in terms of the methods and results of experimental petrology. W. S. Fyfe, N. D. MacRae
3 hours, lecture, Half course, second term.

527. Structure of Polycrystalline Materials. Introduction to the techniques and principles of fabric analysis. Selected topics and applications. J. Starkey
4 hours, lecture and lab, Half course, second term.

530(a). Advanced Geochemistry. Selected topics in physical geochemistry with emphasis on processes within the crust. W. S. Fyfe, M. E. Fleet
3 hours, lecture and seminar, Half course, first term.

530(b). Advanced Geochemistry. Selected topics in sedimentary geochemistry. M. E. Fleet, W. S. Fyfe
3 hours, lecture and seminar, Half course, second term.

***538. Economic Petrology.** Selected topics. N. D. MacRae
3 hours, lecture and lab, Half course.
*(Proposed 1973-74)

539. Sulphide-Silicate Geochemistry. Basic principles of sulphide phase chemistry with examples. Experimental sulphide and sulphide-silicate techniques. Discussion of sulphurization in igneous and metamorphic environments. Seminars and laboratory projects. N. D. MacRae
3 hours, Half course.

540. Structural Geology. Principles of geomechanics and theories of rock deformation; structural analysis. W. R. Church
3 hours, lecture and lab.

542. Geotectonics. Selected topics. W. R. Church
3 hours, lecture.

544. Regional Metamorphism. A study of metamorphism as a phenomenon associated with orogenesis. W. R. Church
3 hours, lecture.

550. Metallogenic Relationships of Metallic Ore Deposits. Study of recent literature on the metallogenesis and origin of the major types of metallic ore deposits; their distribution in space and time, and theories of ore deposition. Study of ore suites, seminar discussions and major field trips constitute an important part of the course. R. W. Hodder, R. W. Hutchinson
4 hours, lecture and lab.

553. Non-metallic Mineral Deposits. A survey of principal industrial and non-metallic mineral deposits, particularly in North America. Economic importance and uses of these commodities. Part lecture, part seminar-discussion treatment. R. W. Hutchinson
3 hours.

554. Mineral Industry. Various aspects of the industry considered in relationship to interdisciplinary fields. Mineral exploration and exploitation;

mineral economics and taxation; mine evaluation and finance; mineral rights, ownership and law. Coverage by lecture, seminar, guest speakers. R. W. Hutchinson
3 hours.

NOTE: 553 and 554 are given in successive years; 553 is planned tentatively for 1973-74.

559. Carbonaceous Fuels. The habitat of coal, petroleum, and natural gas; conditions of origin, methods of exploration, and economic aspects. P. G. Sutterlin and C. G. Winder
3 hours, lecture and seminar.

560. Stratigraphy. An advanced course on stratigraphic principles. C. G. Winder
4 hours, lecture and lab. One term.

564. Advanced Sedimentation. Formation of sediments by physical, chemical and biological processes. G. M. Young
3 hours, lecture and lab.

567. Advanced Glacial Geology. Selected topics. A. Dreimanis
3 hour seminar.

568. Advanced Quaternary Geology. Selected topics. A. Dreimanis
3 hour seminar.

NOTE: 567 and 568 are usually given in alternate years: 567 is planned for 1973-74.

569. Paleoecology. The interpretation of original conditions within the depositional environment from sediments, the primary and secondary features within the sediments, and the nature of the fossil record. The student should have had the courses in sedimentation and invertebrate paleontology. C. G. Winder
5 hours, lecture and lab.

570. Micropaleontology. Morphology, classification, ecology, and stratigraphic occurrence of principal forms. Conodonts are emphasized; laboratory exercises and problems. C. G. Winder
5 hours, lecture and lab.

575. Invertebrate Macropaleontology. Advanced study of selected groups of Paleozoic invertebrates. A. C. Lenz
3 hours, lecture and lab.

579. Organic Evolution and Fossils. Organic evolution from the geologic paleontologic viewpoint; incorporating biologic evidence. Illustrations from fossil record, and studies of particular invertebrates and vertebrate fossil groups, including man. A. C. Lenz
3 hours, lecture and lab.

581. Graduate Seminar. Staff.
2 hours.

590. MSc Thesis.

598. Geological Data Analysis. Data presentation and analysis using graphic numerical and statistical methods; use of computers; courses in mathematics desirable but not required, includes a short course in Fortran IV. P. G. Sutterlin
4 hours, lecture and lab.

690. PhD Thesis.

Geophysics

BIOLOGICAL AND GEOLOGICAL SCIENCES BUILDING, Room 62

Professors:
Beck, A. E., BSc London; PhD Australian National University; Head of Department.
Carmichael, C. M., BSc MSc PhD UWO
Associate Professors:
Mansinha, L., BSc MTech, IIT Karagpur; PhD British Columbia
Mereu, R. F., BSc MSc Toronto; PhD UWO
Palmer, H. C., BSc St. Francis Xavier; PhD Princeton
Schloessin, H. H., BSc Zurich; PhD Cologne
Assistant Professor:
Hayatsu, A., BSc MSc Tokyo; PhD Toronto
Visiting Professor:
Stacey, F. D. BSc, PhD DSc London

The Department offers courses leading to MSc and PhD degrees in Geophysics. The laboratories have facilities for research in terrestrial heat flow and geothermometry, rock magnetism and paleomagnetism, seismology, gravitation, methods of exploration geophysics, theoretical and model studies of the earth's interior, geochronology, gamma ray spectrometry, physical properties of rocks at high pressures and high temperatures. In any one year the selection of courses offered depends upon the programs of the students in the Department.

506. Crustal Structure. A general course on the structure of the crust of the earth, together with a discussion of the mechanisms of mountain building and continent formation./H. C. Palmer

509. Deformation. Application of the theories of elasticity, viscosity and plasticity to the problem of the deformation of the earth's crust. Mathematical theories of folding. Fault and fracture propagation. Applications of dislocation theory./L. Mansinha

512. Theoretical Seismology. The theory of elasticity sufficient for application to the theory of seismology is developed. Other topics presented are — dilatational waves, rotational waves, Rayleigh waves, Love waves, dispersion, eflection, absorption, seismic ray theory, seismic wave generation, and applications./R. F. Mereu

520. Solid State Physics. A study of the elastic, thermal, electrical and magnetic properties of crystalline solids./C. M. Carmichael

550. Exploration Geophysics. The 550 set of courses are specialist courses in various exploration methods. The background theory and methods of interpretation will be discussed during term time and will be followed by a two week field camp in May when the students taking a course will be assigned a small field problem so that they may become familiar with the instruments used, field practice and interpretation of actual field phenomena. All of the 550 group have a course weight of 1/2 and will be taught by full time faculty members and visiting staff.

551. Gravity Methods.

552. Magnetic Methods.

553. Electromagnetic Methods.

554. Electrical Methods.

555. Seismic Methods.

556. Other Methods.

559. Field Camp.

580. Graduate Seminar. A course wherein each graduate student is required to (a) prepare a note in acceptable form for publication and give a full lecture on topic; (b) prepare a full paper in acceptable form for publication and give a 15-minute talk on the topic at a symposium with all students taking part and all staff in attendance /Staff

585. Special Topics. Staff and Visitors.

586. Special Topics. Staff and Visitors.

590. MSc Thesis.

690. PhD Thesis.

HISTORY

SOCIAL SCIENCES CENTRE, Room 4328

Professors:
Balderston, W., BA, PhD Cornell
Kerr, D. G. G., BA McGill; PhD London; Senior Professor
Lander, J. R., BA, MA, MLitt Cantab
Rowe, J. G., AB Harvard; BD Episcopal Theological School; MA, PhD Toronto; Dean of Arts
Talman, J. J., BA, MA UWO; PhD Toronto; DLitt Waterloo; FRSC
Zaslow, M., BA, BEd Alberta; MA, PhD Toronto
Associate Professors:
Armstrong, F. H., BA, MA PhD Toronto
Dreyer, F. A., BA Toronto; BA Oxon; PhD St. Andrews (on leave 1973-74)
Emerson, R. L., BA Dartmouth; AM Brown; MA, PhD Brandeis
Flaherty, D. H., BA McGill; MA, PhD Columbia
Gwynne-Timothy, J. R., BA, MA Toronto; DPhil Oxon
Hilborn, K. H. W., BA, MA Queen's; DPhil Oxon
Hohner, R. A., BA, MA, PhD Duke
Hyatt, A. M. J., BA RMC; BA Toronto; MA Carleton; PhD Duke
McLaughlin, J. P., BA Queen's; PhD London
Ogelsby, J. C. M., AM Stanford; MA, PhD Washington
Ruud, C. A., BA Willamette; AM Harvard; PhD Berkeley
Steele, I. K., BA Alberta; PhD London
Stockdale, W. H., BA, MA Alabama; PhD New York (on leave 1973-74)
Zoltvany, Y. F., BA Loyola; MA Montreal; PhD Alberta
Assistant Professors:
Banks, Margaret A., BA Bishop's; MA, PhD Toronto
Emery, G. N., BA Queen's; PhD British Columbia
Guinsburg, T. N., AB, MA, PhD Columbia
Hahn, E., BA UBC; MA, PhD Yale
Metzger, F. K., BA Bowdoin; MA Pennsylvania; PhD Rutgers
Neary, P. F., BSc, MA Memorial; PhD London
Pospielovsky, D., BA Sir George Williams; MA School of Slavonic Studies (London); MPhil London School of Economics
Santosuosso, A., BA, MA, PhD Toronto

Candidates should read the general University regulations for the MA and PhD degrees elsewhere in this Calendar.

The MA and PhD programs provide opportunities for candidates to gain experience in teaching. The Department awards a number of Assistantships, and students holding them either conduct tutorials in undergraduate survey courses or assist professors in other ways, including research.

LANGUAGE REQUIREMENT (MA AND PhD)

Candidates for either the MA or the PhD must demonstrate a reading knowledge of one language, acceptable to the Department, other than English (or French when this is their mother tongue). The Department offers its own language examinations in Latin, French, German, Russian, Italian, Spanish, Portuguese, Chinese and Japanese. Use of a dictionary is permitted.

Except for those registered before October 1972, MA students are expected to fulfill the language requirement within one calendar year after first registration. If the requirement is not fulfilled within two years, a student can continue in the program only if he or she applies for and receives an extension of the deadline from the Department's Graduate Committee.

MA DEGREE

ADMISSION REQUIREMENTS

All applicants must hold either (1) an Honors BA in History with first or second-class standing or (2) an equivalent qualification, such as a General BA (normally with at least four courses or eight semester courses in History) supplemented by a qualifying year consisting of at least four History courses at the Honors level.

Applicants are admitted at the discretion of the Department's Graduate Committee, subject to approval by the Dean. The Committee normally requires at least a middle B average (UWO 74%) in History, with an A in one History course. Applicants with a History average in the high B range (UWO 77-79%) may be admitted without an A. Applicants with C standing in a General BA program may be admitted if they have achieved A or high B standing in a qualifying year, and have an overall B average on the courses of their final undergraduate year and qualifying year combined.

DEGREE REQUIREMENTS AND PERIOD OF STUDY

Candidates may proceed to the MA degree by either the course or the thesis program.

(1) MA BY COURSE

The Course MA program covers nearly a full calendar year, beginning in September. After taking four courses during the regular academic session (September to May), the student devotes the summer to preparation for written and oral comprehensive examinations in three fields. The comprehensive examinations are normally held in August, though occasionally they may be extended into the early days of September. Under normal circumstances, a student who fails to take the comprehensives in the first summer after registration is not allowed to continue in the program.

At least two of the courses must be at the graduate level. The two additional courses may be chosen from the third and fourth year undergraduate Honors courses in History. A student may be allowed to take a graduate or Honors course in another discipline as a substitute for one of the History Honors courses, with the permission of both Departments concerned. No student will be permitted to take more than two courses on any one of these five areas: Canada, the United

States, Europe, Great Britain (not including the British Empire) and the group of subjects designated below as "Other History".

In choosing courses a student should keep in mind the fields selected for the comprehensive examinations. However, no graduate course will be as broad as a field, and no undergraduate course as intensive; a student preparing for comprehensives will therefore find it necessary to read widely on his own, with guidance from his advisors. The fields are divided into three categories, as follows, and no more than two fields may be chosen from any one category:

NORTH AMERICA

Canada to 1763

Canada, 1759-1867

Canada since 1867

United States, 1775-1877

United States since 1865

EUROPE (INCLUDING THE BRITISH ISLES)

Mediaeval Europe (including Britain), 1000-1400

Europe (including Britain), 1400-1648

Europe (including Britain), 1648-1815

Europe, 1789-1914

Europe since 1871

Great Britain, 1760-1914

Great Britain since 1832

OTHER HISTORY

First British Empire

Second British Empire

Latin America

International Relations, 1815-1945

International Relations since 1890

History of Warfare

When examiners are available, individual students may arrange special fields in any category with the Chairman of Graduate Studies. All course and field selections are subject to approval by the Graduate Committee, or by the Chairman of Graduate Studies acting on the Committee's behalf. When two fields with similar titles overlap chronologically to a major degree, students will not normally be permitted to take both.

Candidates must obtain at least a B (70%) in **each** course. At the discretion of the Graduate Committee, those who fail to achieve this standard may be required to withdraw from the program or permitted to proceed to the comprehensives under conditions. To pass the comprehensives, a candidate successful in all courses must obtain an **Average** of at least 70% on the three fields, and a mark of at least 70% on **two** of the fields.

The course MA program may be taken on a part-time basis. The four required courses must be completed within four calendar years after first registration. All written and oral comprehensive examinations must be taken as a group within five calendar years after first registration. Summer School and Extension courses at the third and fourth year Honors level may be counted towards a part-time course MA, but only by prior arrangement with the Chairman of Graduate Studies. As in the

full-time program, two of the courses must be graduate courses. Classes in a few such courses are sometimes held in the evenings.

(2) MA BY THESIS

Two graduate courses are required. One of them may be chosen from another discipline, with permission of both Departments concerned. All course selections are subject to approval by the Graduate Committee, or by the Chairman of Graduate Studies acting on the Committee's behalf.

With the permission of the Graduate Committee, an Honors undergraduate History course at the third or fourth year level may be substituted for one of the graduate courses, but in this case the student will complete additional assignments. Students desiring the necessary permission should apply in writing, with reasons for their request, to the Chairman of Graduate Studies, Department of History, preferably not later than 1st September.

Students may be required to withdraw if they obtain less than 70% in either course.

The major requirement is a thesis, based on original research and demonstrating capacity for independent critical judgment. The candidate will submit to his supervisor an outline of his projected thesis research not later than 15 November of his first year. (Part-time students are exempted from this rule, but must submit such outlines when their supervisors so require).

Full-time students are urged to complete their theses within one calendar year after first registration. All students are required to submit their theses to the Department not later than 30 September of the third year after the year in which course work is completed. Candidates who fail to meet this deadline cannot continue in the program, unless they apply for and receive an extension from the Department's Graduate Committee. Application for such an extension must be made in writing to the Chairman of Graduate Studies not later than 15 September. The application must include statements on (a) the candidate's reasons for tardiness; (b) what has been accomplished so far; (c) what remains to be done. Normally an application for extension will not be approved unless it is supported by the candidate's supervisor.

When a thesis is submitted, the candidate is examined orally on the thesis itself and (at the examiners' discretion) on the field in which it falls — e.g., 19th Century Britain, or the political history of Canada since Confederation.

Thesis MA candidates who are eligible for part-time status may transfer to the part-time course MA program, retaining full credit for courses already completed, provided that the normal deadlines for the part-time course MA can be met.

PhD DEGREE

ADMISSION REQUIREMENTS

Candidates must normally hold an MA degree in History, and have achieved an A standard in a substantial part of their academic work. Admission is granted at the discretion of the Department's Graduate Committee, subject to approval by the Dean.

DEGREE REQUIREMENTS AND PERIOD OF STUDY

(a) Courses

Two graduate courses are normally required. One of them may be chosen from another discipline, with permission of both Departments concerned. All course selections are subject to approval by the Graduate Committee, or by the Chairman of Graduate Studies acting on the Committee's behalf.

Candidates must have an A (80% or better) in one course and at least a B (70%) in the other. Candidates may be required to withdraw at any time if the Graduate Committee concludes that their work is unsatisfactory.

(b) Comprehensive Examinations

Shortly after initial registration each student will select, with the approval of the Chairman of Graduate Studies, three fields of study. At least one field is to be in North American history, and at least one in the history of Europe (a term interpreted as including the British Isles). These may be chronological fields (e.g., Tudor England or Canada since Confederation) or functional fields (e.g., United States Economic History since 1850, or English Social History since 1800). In each field there will be comprehensive written and oral examinations. In a normal program these examinations will be held in October of the candidate's second year, some six months after completion of course work.

At the discretion of the Graduate Committee, a doctoral candidate who fails in one of the three fields is required either to repeat the examinations in all three fields or to withdraw from the program.

(c) Thesis

A thesis showing evidence of scholarly research and originality is the major requirement. The candidate will select a topic in consultation with his supervisor and will present an outline of his projected thesis no later than December of the second year of a normal doctoral program. When the thesis is submitted, the candidate will be called upon to defend it in a faculty oral examination.

(d) Period of Study

Candidates will be required to spend at least two academic years in residence.

For additional information, write to the Chairman of Graduate Studies, Department of History.

NOTE: A good reading knowledge of French is required in History 504 and 544. For History 531, students should have a good reading knowledge of one of the following languages: French, German, Italian, Latin.

COURSES

504. French Canadian Origins: Selected Topics in the Early History of French Canada. Y. Zoltvany
(2 hours).

505. Canada: Urbanization and the Formation of Elites, 1759-1914. Concentration on the earlier period and the eastern half of Canada. The course will examine how and why cities grew, their economic and social interconnections and the composition and formation of urban elite groups. F. H. Armstrong.
(2 hours).

508. Selected Topics in the Social, Economic and Cultural History of Ontario, 1780-1920. Emphasis on primary and major secondary sources. An effort is made to turn to practical account the particular interests of each student. J. J. Talman.
(2 hours).

511. Federal Elections in Canada, 1867-1972. Lectures, and seminars based on individual research, on topics relating to election issues, campaign techniques, results, etc. D. G. G. Kerr.
(2 hours).

513. The Opening of the Canadian North. M. Zaslow.
(3 hours).

523. Tudor and Early Stuart England. A study of the economic, social, religious and governmental development of early modern England. J. R. Lander.
(2 hours).

525. British Science and Society in the 17th and 18th Centuries. W. Balderston.
(3 hours).

527. British Government and Politics, 1760-1850. A study of the relation between political theory and the problems of English society and politics. F. A. Dreyer.
(2 hours).
(Not offered 1973-74)

531. Selected Topics in Mediaeval History and Society. First Term: The Evolution of Feudal Society to the Middle of the 11th Century. Second Term: Papacy and Monarchy in the 12th and 13th Centuries. J. G. Rowe.
(2 hours).

544. French Society and Government, 1763-1852. Emphasis on breakdown of the old regime in the context of the "democratic revolution" of late 18th Century, reorganization of France under revolutionary and Napoleonic regimes, search for stability under the constitutional monarchies, and revolution of 1848 and its aftermath. J. P. McLaughlin.
(2 hours).

553. Selected Topics in the History of the United States.. Staff.
(2 hours).
(This course may not be offered in 1973-74).

565. Selected Topics in the First British Empire. I. K. Steele
(2 hours).

570. Historiography and the Philosophy of History.
(2 hours).
(This course may not be offered in 1973-74).

578. Warfare. Survey of war in the modern period. Emphasis on economic and social consequences of war, and impact of technology on warfare. Though the course varies according to student interests, it includes the most prominent theoretical writers on warfare from Machiavelli to Herman Kahn. A. M. J. Hyatt.
(3 hours).

579. Military and Strategic Studies: Selected Topics. A course taught by a visiting professor on his field of specialization.
(3 hours).

581. Selected Topics in International Relations. A comparative study of the origins and outbreak of the First and Second World Wars, followed by examination of the origins and nature of the Cold War. K. H. W. Hilborn.
(2 hours).

585a. Directed Readings on a Selected Topic. Supervised by a member of the Department.
Offered in the Fall term, and sometimes in the Summer term..
(Half-course)

586b. Directed Readings on a Selected Topic. Supervised by a member of the Department.
(Half-course).
Offered in the Winter term, and sometimes in the Summer term.

587. Directed Readings on a Selected Topic. Supervised by a member of the Department.

589. Directed Study: Preparation for Course MA Comprehensive Examinations.

590. MA Thesis.

686. Directed Study: Preparation for PhD Comprehensive Examinations.

690. PhD Thesis.

HISTORY OF MEDICINE AND SCIENCE

Professor:
Holmes, F. L. BS MIT; MA, PhD Harvard; Chairman of the Department
Associate Professor:
Richardson, R. A. BA Sir George Williams; MA McGill; PhD Wisconsin
Assistant Professor:
Plotkin, Howard BA Michigan; PhD Johns Hopkins

A program leading to a graduate degree is not yet available. Candidates for the MA or PhD degree in History may take a graduate or Honors course in history of science.

COURSES

540. History of Scientific Ideas. An introductory survey of the historical growth and expansion of scientific ideas from antiquity to the 20th century. Particular attention will be given to the development of the biological sciences during the past two centuries.
2 Hours per week; Lecture-discussion, Half Course.

640. Selected Topics in the History of Scientific Thought. An advanced reading and research seminar or tutorial, focusing on either the biological or physical sciences in accordance with the interests of students.
1 Hour per week, Full or Half Course.

LIBRARY AND INFORMATION SCIENCE

Professors Emeritus:
Colvin, Laura C., AB William and Mary: ABLS and AMLS,
Reitman, E., L. és L. Paris
Professors:
Cameron, W. J., BA, MA Victoria, NZ; PhD Reading. Dean
Hotimsky, C. M., ACIA Shanghai; MA Waterloo
Lee, R. E., BA Guilford; BSLS, MFA North Carolina; PhD Chicago
Prodrick, R. G., BA Toronto; MS Columbia; MA Toronto
White, Janette H., BA Toronto; MS Columbia
Associate Professors:
DeHart, Florence E., AB College of St. Elizabeth; MA Seton Hall; MLS, PhD Rutgers
Dolan, F. T., BSc St. Francis Xavier; MSc Georgia Institute of Technology
Fyfe, Janet, MA Edinburgh; FLA
Jamieson, Alexis J., BA, BLS McGill; MA McMaster
Neill, S. D., BA, BLS, MEd Toronto
Pendrill, G. R., BA, MA Cantab; Dip Lib London; FLA
Sudar, D., BA, BLS Toronto
Assistant Professors:
Hansen, Kersti, BA, BLS McGill; MLS Toronto
Hudgins, W. H., BA Toronto; MLS UWO
Schulte-Albert, H., BA, BS Kent; MA, MS, PhD Case Western
Strathern, Gloria M., BA New Zealand; Dip NZLA
Svenonius, Elaine, AB Barnard; MA Pennsylvania; PhD Chicago

Lecturers:
Janes, Donna Jean, BA Toronto; MLS UWO
Ketchum, Elizabeth, BA, BLS Toronto; MLS UWO
McCamus, Betty M., BA Toronto; MLS UWO
Rayward, W. B., BA Sidney; Dip Lib NSW; MS Illinois
Schutte, R. M., BA, MA Toronto
Sprovieri, Carmen L., BA, MA Gonzaga; BLS UBC; MLS UWO

School of Library & Information Science

The School of Library and Information Science began studies in September 1967. In October 1968 the School was visited for accreditation purposes by a Committee of the American Library Association. The Committee on Accreditation of the American Library Association, which is the accrediting agency for both Canada and the United States, accepted in January 1969 the visiting Committee's report and accredited the School's MLS program.

ADMISSION:

Candidates for admission into the Master of Library Science program must have, from a recognized University, an honors Bachelor's degree or equivalent with at least a B standing over the last 10 courses.

Candidates who have a three-year or four-year general Bachelor's degree may raise their degree to the equivalent of an honors degree by undertaking a year (two terms) of undergraduate studies as a Special Student. Application forms may be obtained from the Office of the Registrar.

Candidates who wish to transfer at the end of one year from other accredited graduate library schools with a two-year MLS or who hold its equivalent may complete their MLS after two terms.

Proficiency in English is required of non-English speaking students who are required to show evidence of proficiency by satisfactory achievement in the University of Cambridge Certificate of Proficiency in English, or the Test of English as a Foreign Language administered by the US Educational Testing Service.

The School operates on a trimester system and students may be admitted in September, January or May. Application forms may be obtained from the School of Library and Information Science.

PERIOD OF STUDY

Dependent upon the conditions laid down upon admission to the Faculty of Graduate Studies, a student may complete his studies for the MLS in two or three consecutive terms. It is possible to earn the MLS in summer terms or in summer sessions plus a final term. The program may also be taken part time.

LANGUAGE REQUIREMENTS

Because of the importance of languages in the field of Library and Information Science, a reading knowledge of at least one language other than English is expected. The second language must be useful in study and research in the School's field of knowledge.

COURSE REQUIREMENTS

Required courses are: 501 or 502, 511, 512, 513, 521, 523, 551, 552, 553, and 580. Other courses may be required in a particular program by decision of the School's Council.

[redacted]

For two-term students, 552, 553, and 580 are required, and others may be required in individual cases.

Every elective is not necessarily offered in any one term. For more information, refer to the Calendar of the School of Library and Information Science.

COURSES:

501. Old World Intellectual and Cultural Foundations.
Seminar, Half Course.

502. New World Intellectual and Cultural Foundations.
Seminar, Half Course.

503. Bookcollecting and Librarianship.
Seminar, Half Course.

504. Intellectual and Cultural Foundations of Classification.
Seminar, Half Course.

505. Bibliography and Librarianship.
Seminar, Half Course.

507. Systems Analysis and Libraries.
Seminar, Half Course.

508. Guided Reading.
Seminar, Half Course.

509. Education for Librarianship.
Seminar, Half Course.

511. Professional Theory and Methodology: Humanities.
Seminar and Lab, Half Course.

512. Professional Theory and Methodology: Social Sciences.
Seminar and Lab, Half Course.

513. Professional Theory and Methodology: Science and Technology.
Seminar and Lab, Half Course.

514. Special Topics in the Humanities.
Seminar, Half Course.

515. Special Topics in the Social Sciences.
Seminar, Half Course.

516. Special Topics in Science and Technology.
Seminar, Half Course.

517. Information in Languages other than English.
Seminar, Half Course.

519. Problems in the Organization of Information.
Seminar, Half Course.

521. Administrative Theory and Practice: General Principles.
Seminar, Half Course.

522. Administrative Theory and Practice: Library Planning.
Seminar, Half Course.

523. Administrative Theory and Practice: Library Administration.
Seminar, Half Course.

524. Administrative Theory and Practice: School Libraries.
Seminar, Half Course.

525. Administrative Theory and Practice: Services to Children and Young Adults.
Seminar, Half Course.

527. Administrative Theory and Practice: Community Services, Local, Regional, National.
Seminar, Half Course.

528. Administrative Theory and Practice: Higher Education.
Seminar, Half Course.

529. Administrative Theory and Practice: Special Libraries.
Seminar, Half Course.

530. Research Principles and Practice in Library and Information Science.
Seminar, Half Course.

531. Research Principles and Practice in the Humanities.
Seminar, Half Course.

532. Special Research Topics in the Humanities.
Seminar, Half Course.

534. Research Principles and Practice in the Social Sciences.
Seminar, Half Course.

536. Special Research Seminar.
Seminar, Half Course.

537. Research Principles and Practice in Science and Technology.
Seminar, Half Course.

538. Guided Research I.
Seminar, Half Course.

539. Guided Research II.
Seminar, Half Course.

540. Special Topics in Librarianship.
Seminar, Half Course.

541. Comparative Librarianship.
Seminar, Half Course.

542. Periodical Literature.
Seminar, Half Course.

543. Historical Development of Children's Literature.
Seminar, Half Course.

544. Canadiana.
Seminar, Half Course.

545. Slavic Libraries and Librarianship.
Seminar, Half Course.

547. History of Science.
Seminar, Half Course.

551. Systems of Language and Systems for Communication.
Seminar, Half Course.

552. Introduction to Information Science.
Seminar, Half Course.

553. Problems in the Computer Control of Information.
Seminar, Half Course.

556. Introduction to Information, Communication, and Coding Theory.
Seminar, Half Course.

557. Mathematical Models in Library and Information Science.
Seminar, Half Course.

558. Special Topics in the Computer Control of Information.
Seminar, Half Course.

559. Audiovisual Theory and Practice.
Lab and Seminar, Half Course.

561. Art Libraries and Information.
Seminar, Half Course.

562. Business Libraries and Information.
Seminar, Half Course.

566. Law Libraries and Information.
Seminar, Half Course.

567. Medical Libraries and Information.
Seminar, Half Course.

569. Music Libraries and Information.
Seminar, Half Course.

571. Archives Theory and Practice.
Seminar, Half Course.

580. Master's Seminar.
Seminar, Half Course.

MATHEMATICS

ENGINEERING & MATHEMATICAL SCIENCES BUILDING; Room 305

Professors:
Ali, M. M., BSc, MSc Dacca; MS Michigan; PhD Toronto
Borwein, D., BSc Witwatersrand; PhD, DSc London; FRSE. Head of Department
Cole, R. H., BA UWO; MA, PhD Wisconsin. Senior Professor
Moore, J. T., BA UWO; MA Wisconsin; PhD Chicago
Ritcey, L. F. S., BA Mount Allison; MA Harvard; PhD Chicago, A.S.A.
Thierrin, G., Lic. Math, Doc. Math, Fribourg; Doc. Math Paris

Associate Professors:
Bode, Anne E. M., BA, MA Saskatchewan
Bryan, R. N., BA, MA, PhD Utah
Chan, L. K., BSc Hong Kong Baptist; MA, PhD UWO
Haq, M. S., MA, PhD Toronto
McKay, D. O., BA, MA, PhD Buffalo
Robinson, I. J. W., BA, MA Queen's; PhD UWO
Shawyer, B. L. R., BSc, PhD St. Andrews
Wonnacott, *T. H., BA UWO; PhD Princeton*
Assistant Professors:
Biggs, R. G., BSc Stanford; PhD British Columbia
Cass, F. P. A., BSc, MSc Victoria, NZ; PhD UWO
Florence, J. B., MA St. Andrews; MSc Newcastle-Upon- Tyne; PhD Simon Fraser
Heinicke, A. G., BSc, MSc Manitoba; PhD British Columbia
Miller, C. B., BA Saskatchewan; MA, PhD Illinois
Milnes, P., BA, MSc, PhD Toronto
Reis, C. M., MA Oxford; PhD Michigan State
Strube, R. F. E., BS MIT; MS PhD Michigan

The Department of Mathematics offers programs leading to the degree of MA and PhD. At present particular research interests of the faculty include the following: Combinatorial Analysis, Commutative Algebra, Group Theory, Ring Theory, Ordinary and Partial Differential Equations, Summability Theory, Number Theory, Actuarial Mathematics, Mathematical Statistics, Foundations of Mathematics, Semigroups, Operator Algebras, Algebraic Topology, Topological Groups, Automata.

DEPARTMENTAL REGULATIONS

These are additional to the general regulations listed earlier in this announcement.

MA Degree

(1) A candidate with a General Bachelor's Degree will be required to enrol in the Faculty of Science as a Special Student and to complete satisfactorily a minimum of five undergraduate Honors Mathematics courses before being considered for admission to an MA program in Mathematics.

(2) A candidate having an Honors Bachelor's Degree shall complete satisfactorily a minimum of four Mathematics courses numbered 300 or above, at least two of which shall be at the graduate level. At the discretion of the Department a candidate may be permitted to substitute a thesis for not more than two courses.

PhD Degree

(1) At the discretion of the Department, an applicant may be required to complete a one-year program of approved courses before being accepted as a candidate for the PhD Degree.

(2) In addition to fulfilling the thesis requirement, a candidate shall complete satisfactorily a minimum of seven Mathematics courses numbered 300 or above of which at least five must be at the graduate level. A candidate holding an approved Master's degree may be exempted from at most four of these courses unless he has successfully completed more than the minimum number of courses required for this degree. In the latter case the candidate may be exempted from more than four courses.

(3) A candidate will be required to pass a Departmental oral examination; this examination will be primarily concerned with the contents of his thesis, but may include questions of a general nature relating to his field of specialization.

(4) Each candidate will be required to present at least one paper at a graduate seminar, on a subject to be approved by his supervisor.

(5) Each candidate must have a reading knowledge of at least one language other than English, which is deemed by this Department as being useful in his research.

COURSES

(Note: Not all of the following courses will be offered in 1973-74.).

500-559. Pure Mathematics.

501. Measure and Integration Theory.

502. Topics in Summability Theory.

503. Functional Analysis with Applications to Summability Theory.

504. Complex Analysis.

505. Ordinary Differential Equations.

506. Number Theory.

507. Foundations of Mathematics.

509. Functional Analysis.

510. Topics in Analysis.

511. Partial Differential Equations.

512. Integral Transforms and Eigenfunction Expansions.

513. Mathematics for Graduate Students in the Social Sciences.

514. Theory of Recursive Functions and Computability.

tions.

506. Number Theory.

507. Foundations of Mathematics.

509. Functional Analysis.

510. Topics in Analysis.

511. Partial Differential Equations.

512. Integral Transforms and Eigenfunction Expansions.

513. Mathematics for Graduate Students in the Social Sciences.

514. Theory of Recursive Functions and Computability.

515. Algebra.

516. Theory of Groups.

517. Theory of Semigroups.

518. Theory of Rings.

519. Algebraic Theory of Automata.

520. Algebraic Topology.

560-569. Actuarial Mathematics.

561. Advanced Life Contingencies and Construction of Mortality Tables.

570-588. Mathematical Statistics.

572. Theory of Linear Estimation.

573. Structural Analysis.

574. Topics in Multivariate Analysis.

580. Theory of Statistical Inference.

581. Characteristic Functions and Probability.

582. Theory of Estimation and Testing of Hypothesis.

583. Design of Experiments.

584. Non-parametric Statistics.

585. Stochastic Processes.

586. Multivariate Analysis.

588. Theory of Sampling.

589. Directed Reading and Research. (No part of the minimum course requirements can be fulfilled by this course.)

590. MA Thesis.

690. PhD Thesis.

NOTE: At the discretion of his committee of advisors, a candidate for either the MA or the PhD degree may be permitted to substitute certain graduate courses in other Departments for Mathematics courses.

MEDICINE

UNIVERSITY HOSPITAL, Room 505f

Professors:
R. W. Gunton, MD UWO; DPhil Oxon. Head of department
Hession, B. L. MD Msc UWO
Lefcoe, N. M. BSc McGill; MD Vanderbilt
Lewis, J. A., MD UWO
Manning, G. W., MA, MD, PhD Toronto
Associate Professors:
Ahuja, S. P., MB, BS Nagpur India
Barton, W. B., MD UWO
Bocking, D., MD UWO
Bondy, D. C. MD UWO
Cameron, W. M., MD UWO
Chamberlain, M. J., MB ChB MRCP, MD Birmingham
Chodirker, W. B., BSc, MD Manitoba
Clarke, O, BA, MA, MB, ChB, MD Cantab
Harth, M, MD Toronto
Linton, A. L., MB, ChB Glasgow
Loudon, J. L., MD Toronto
Roach, M. R., BSc New Brunswick; MD, CM McGill; PhD UWO
Rodger, N. W., BSc MD Manitoba
Smith, D. R. MD UWO
Thompson, J. M. BA Amherts, MD UWO
Toogood, J. H. MD Toronto
Watson, W. C. MB, ChB, PhD MD Glasgow
Assistant Professors:
Barr, R. M. MD UWO
Bell, D. A. MD UWO
Borda, I. T. MD Budapest
Boughner, D. R. MD PhD UWO
Goddard, MD MB ChB New Zealand
Green, R. N. MD McGill
Jones, D. T. BA MD UWO
Kimber, R. W. BA McMaster, MD UWO
Kostuk, W. J. MD UWO
McCourtie, D. M. MD UWO
McDonald, J. W. D. MD PhD UWO
Redinger, R. N. BA MD UWO
Shaw, D. B., BSc St. Francis Xavier, MD, CM, PhD McGill
Stiller, C. R. MD Saskatchewan
Stuart, R. K., MD UWO
Tevaarwerk, G. J. M. BA MD UWO
Wolfe, BM, BA Saskatchewan, BM BCh, MA Oxon, MSc McGill
Wood, T. E. BA, MD UWO, MSc McGill

Graduates in Medicine may obtain further training in internal medicine at the intern, resident, or fellow level - through a programme which integrates the clinical and research facilities of St. Joseph's, Victoria, University, Westminster Hospitals. This programme is designed to qualify individuals for fellowship examination of the Royal College of Physicians and Surgeons of Canada, but is also available to those involved in other specialty training areas.

Postgraduate training in clinical research is offered in cardiology, pulmonary disease, endocrinology, gastroenterology, haematology, renal disease, therapeutics, allergy & immunology and others. Varied facilities in these disciplines are available for animal and human research, combined with clinical traineeship.

MUSIC

FACULTY OF MUSIC BUILDING, Room 236

Professors:
Greene, G. K., AMus, BA, BEd, MA Alberta, PhD Indiana. Chairman, Music History
Haenselman, C. F., BMusEd, MMus Colorado, PhD Indiana. Chairman, Theory and Composition;
McKellar, D. A., MusBac Toronto; MMus Eastman. Associate Dean of Faculty. Chairman, MMus Prof Degree Committee
von Kuster, C., MusBac Toronto. Dean of Faculty
Visiting Professor:
Tsutsumi, T., To Ho Conservatory, Tokyo; Artist Diploma in Cello, Indiana
Associate Professors:
Aldrich, R., MusBac Victoria, Wellington
Downs, P. G., BA Leeds; MusM, PhD Toronto
Giron, A., BMus Oberlin, MA Tulane
Green, J. P., MusBac Toronto, MM Eastman
McIntosh, J. S., MusBac Toronto, MMus Eastman. Chairman, Applied Music
Shallenberg, F. R., BM BMEd Phillips Oklahoma, MM DMA Illinois
Stark, J. A., BA Minnesota, MusM Toronto
VanOstrand, G., BSC New York State; MM Eastman, DMA Eastman
Assistant Professors:
Bratuz, Damiana, MDipl Trieste; MM St. Louis; MusDoc Indiana
Munn, H.
Pendle, Karin, BA Minnesota, MM, PhD Illinois
Riseling, R., BMEd Illinois Wesleyan, MM Texas
Seiffert, S., BM Eastman, MA Brown, DMA Eastman

COURSES

530. Music Bibliography and Research Techniques Bibliography.
Half Course.

582. Research Tutorial.
Half Course.

THEORY AND COMPOSITION

501. Theory Review I for Graduates (no credit).

502. Theory Review II for Graduates (no credit).

510. History and Pedagogy of Theory.

512. Advanced Orchestration.
Half Course.

514. Analytic Techniques.

516a. 16th Century Stylistic Counterpoint.
Half Course.

516b. 18th Century Stylistic Counterpoint.
Half Course.

516c. 20th Century Counterpoint.
Half Course.

518. Composition.

591. MusM Thesis.

594. MusM Composition Thesis.

MUSICOLOGY AND LITERATURE

503. Survey of Music History I for Graduates (no credit).

504. Survey of Music History II for Graduates (no credit).

534. Music Notation.

536. Seminar in Medieval and Renaissance Music.

538. Seminar in Baroque Music.

540. Seminar in Pre-Classic and Classic Music.

542. Seminar in Twentieth Century Music.

544. Performance Practices in Early Music.

545. Seminar in the Interpretation of Musical Styles.
Half Course.

546. Beethoven.

548. History of Music Criticism.
Half Course.

550. Verdi and Wagner.

552. Studies in Gregorian Chant.

554. From Symphony to Symphonic Poem.

556. Schoenberg and His School.

557. Art Song.

558a. Keyboard Literature to 1700.
Half Course.

558b. Keyboard literature from Bach to Beethoven.
Half Course.

558c. Piano Literature of the 19th Century.

560a. Seminar in Choral Literature.
Half Course.

560b. Seminar in Choral Literature.
Half Course.

562. Bach and Handel.

564. History of Vocal Art.
Half Course.

590. MA Thesis.

MUSIC EDUCATION

570. Advanced Conducting.
Half Course.

572. Advanced Brass Techniques.
Half Course.

574. Advanced Woodwind Techniques.
Half Course.

576. Advanced Choral Techniques.
Half Course.

578. Advanced String Techniques.
Half Course.

580. Music Education Seminar.

591. Mus M Thesis.

PERFORMANCE

509. Applied Music.

513. Phonetics for Singers (no credit).

545. Seminar in the Interpretation of Music Styles.
Half Course.

592. Document for MusM in Performance.

593. MusM Recital.

NURSING

Professors:
Aikin, R. Catherine; RegN; BA, BN McGill; MA Chicago Dean of Nursing
Griffin, Amy E., RegN; BA Toronto; MSc Wayne; EdD Columbia Assistant Dean (Academic) and Coordinator of Graduate Programs
Hibbert, Dorothy M., RegN; BS Manitoba; MA Columbia Assistant Dean (Administration)

COURSES

28. Research-Statistics. Introduction to research methodology, evaluation, utilization: the contribution of research to the theory and practice of nursing: basic statistical concepts related to sampling, measures of central tendency, variability, probability, correlation, significance.
2 hours Lecture, Full Course.

500. Health Services and Their Development. An historical approach to the study of current issues in health services, especially nursing; the significance of the past in relation

Associate Professors:
Horn, Ethel, RegN; BS MA Columbia
Mantle, Jessie, RegN; BN McGill; MScN California
Wood, Vivian, RegN; BScN UWO; EdM Boston
Assistant Professors:
Creeggan, Sheila, RegN BScN Windsor; MScN UWO
Gerhard, Wendy, RegN; BScN MScN UWO
Given, Janice, RegN; BScN UWO; MEd Toronto
Potter, Thelma, RegN BN McGill; MScN Boston

PURPOSE OF THE MSc PROGRAM

The purpose of graduate education in nursing is to prepare graduates to assume senior responsibilities in nursing and to exert wise leadership within the profession of nursing. It is anticipated that the graduates will have knowledge in depth in their selected field of specialization, i.e. either teaching or administration; an appreciation of the role of research and the appropriate application of research findings; the ability to discern need for change in nursing and how to effect it; human relation skills which make possible effective functioning in situations as they obtain, or their modification if indicated. The programs take into consideration studies satisfactorily completed in undergraduate programs, and are designed to build upon the individual's background of education and experience and, where possible, to prepare for individually anticipated responsibilities on graduation.

ARRANGEMENT OF COURSES WITHIN PROGRAMS

A. MAJOR IN ADMINISTRATION

Special Undergraduate Year 200, 500, 501, 504, 505, one senior or graduate course in General Education.

Graduate Year 600, 601, or 602, or 603, 590 or 591, one senior or graduate course in General Education or a graduate course in Nursing.

B. MAJOR IN TEACHING

Special Undergraduate Year 28, 500, 505, 3 electives in General Education, one of which must be a Natural, Biological or Medical Science.

Graduate Year 600, 604, 605, 606, 607, 608

These programs are currently under review by the Professional Degree Committee. Some changes may become operational at commencement of the 1973-74 academic year.

NOTE: The above outlines degree requirements and courses contributing credit toward the degree. In addition, a student with a major in administration or teaching may elect to take 509, a non-credit course, in either the special undergraduate or graduate year. This is a course offered in the Faculty of Nursing if sufficient students enrol. Conditions under which this course is offered will be reviewed at the end of the 1972-73 academic year.

to problems of the present; society's concern for health; social, economic, political, legal and philosophical influences on health services.
2 Hours Lecture, Half Course.

501. Administration. Nature of the organized human enterprise; the administrative process; theories and skills of administration; the administrative role and implications of its assumption.
2 Hours Lecture, Full Course.

200 and 504. Statistics and Research in Nursing. Content included in Research-Statistics 28 plus additional experience in research design, construction and pre-testing of data collection tools, data analysis and the utilization of research findings.
2 Hours Lecture, Plus Labs, Full Course.

505. Theory and Practice in Nursing. An examination of the nature of nursing and the theoretical justification for its practice. Implicit in the course is the student's responsibility to define her learning and practice goals, and to evaluate the effectiveness of her planned nursing intervention.
2 Hours Lecture plus a Spring Term Practicum, Full Course.

509. Human Relations and the Change Process. The laboratory method of learning is employed with the focus upon "needs" of learners in the area of interpersonal effectiveness. The content comprises the actions and interactions of the members in relation to situations which are created in the "laboratory" which expose these to open study and thus a re-setting of goals.
2 Hours Lecture, Half Course.

590. Thesis OR 591. Alternative Requirements. The student may elect to undertake a research project and write a thesis reporting it. As an alternative, the student may elect to complete: (1) One senior or graduate course in General Education or a graduate course in Nursing. (2) A major paper associated with the student's work in one graduate course in Nursing, either a course the student has completed or is currently studying. Instructions regarding the thesis and the major paper are on file in the office of the Coordinator of the Graduate Programs who will review these instructions with the students concerned.

600. Current Issues in Nursing. Factors bearing on these issues, alternate courses of action; role of the professional in society; the professionalization of nursing.
2 Hours Lecture, Half Course.

601. Nursing Service Administration in Hospitals. Study of the objectives and method of initiating, developing and evaluating the roles and functions related to the senior administrative responsibilities; analysis of trends and developments which have implication for nursing service administration.
2 Hours Lecture plus Labs, Full Course.

602. Nursing Education Administration. Study of the development of a conceptual framework for establishing, maintaining, and evaluating the nursing education process. Discussion of the leadership role of the administrator in all phases of the process.
2 Hours Lecture plus Labs, Full Course.

603. Public Health Administration. Application of the administrative process in public health nursing; current and predicted future programs of community health organization. Practicum may be included concurrently or in the spring term.
2 Hours Lecture plus Labs, Full Course.

604. Research in Nursing. Continued examination of the nature and methodology of research in nursing and utilization of findings. Advanced experience in the identification of

researchable problems in nursing, designing, implementing and reporting a carefully circumscribed study in the clinical field.
2 Hours Lecture plus Labs, Full Course.

605. Education and the Teacher's Role. Part 1. An examination of education in contemporary society, focusing upon an investigation of the functions, organization and values of schooling for society, and their implications for the nursing curriculum.
Part 11. An examination of the role of teacher and aspects of curriculum development in nursing education.
2 Hours Lecture, Full Course.

606. Assessment of the Student Nurse. Discussion of the problems and methodology of teacher made tests in nursing education interpretation of grades and fundamentals in assessment of laboratory experience. Examination of registration, licensure, certification and standardized tests in nursing. Concurrent laboratory experience for each facet of the course.
2 Hours Lecture plus Labs, Full Course.

607. Human Learning and Planning for Teaching. Basic concepts of teaching, course planning and lesson planning, with emphasis on planning for learning experiences relevant to stated course and lesson objectives. Study is made of theoretical constructs associated with learning as a basis for teaching. Teaching practice and television microteaching are an integral part.
2 Hours Lecture plus Labs, Full Course.

608. Examining Student Nurse Problems. Development of skills in the exploration, analysis and decision making relevant to student nurses' problems, through the case method approach. Issues may be personal, academic or social. Examination of educational counselling, occupational information and placement services for student nurses. Case-writing is included.
2 Hours Lecture plus Labs, Full Course.

OBSTETRICS AND GYNAECOLOGY

Professors:
Armstrong, D. T., BSA Toronto; MS, PhD Cornell
Plunkett, E. R., MD PhD UWO. Chairman of Department
Walters, J. H., BA, MD UWO
Associate Professor:
Harding, P. G. R., MD, MSc UWO
Assistant Professors:
Collins, J. A., MD UWO
Possmayer, F., BSc Toronto; PhD, UWO
Raud, H. R., BSc, MSc, PhD McGill
Yuzpe, A. A., MD, MSc UWO

Within the Department there is an active basic research program in the field of Reproductive Endocrine Physiology. In addition, programs in the study of fetal and uterine physiology are well established. The special facilities for monitoring the forces of labour and fetal condition are available in an active Intensive Care Unit.

Clinical investigations are carried out in collaboration with the Departments of Physiology, Paediatrics, as well as other departments on occasion.

Opportunities for a year of clinical investigation approved by the Royal College of Surgeons of Canada are available for suitable applicants.

Graduates in Medicine may apply for training in Obstetrics and Gynaecology at the intern, resident or fellow level — through a programme which integrates the clinical and research facilities of Victoria, St. Joseph's and the University Hospitals.

Such further training is designed for those who wish to qualify for Fellowship in the Royal College of Surgeons of Canada, or for the degree of Master of Clinical Science (MCLSc).

OPHTHALMOLOGY

Clinical Professor:
Dyson, C., MD UWO Head of Department
Associate Professor:
McKinna, A. J., BA MD McGill
Clinical Associate Professors:
Ballantyne, J. F., MD Toronto
Nicholls, J. V. V., BA, MD CM, MSc, McGill
Thompson, C. A., BA, MD CM, McGill
Clinical Assistant Professors:
Collyer, R. T., BA, MD, UWO
McFarlane, D. C., MD, UWO
Mills, D. W., BA, BSc Carleton, MD, MSc (Med) Queen's
Clinical Lecturers:
Burt, W. L., MD, UWO
Oliver, G. L., MD, MSc, UWO
Instructor:
Willis, N. R., MSc, MD, UWO

The Department of Ophthalmology is approved by the Royal College of Physicians and Surgeons of Canada for the training of seven residents in this specialty. The course is three years in length and utilizes the facilities at Victoria, St. Joseph's, Westminster and University Hospitals. Included is a basic lecture course in Ophthalmology and postgraduate residency training program.

OTOLARYNGOLOGY

Professor:
Greenway, R. E., MD UWO
Rounthwaite, F. J., BSc, MD, CM McGill. Head of Department

Clinical Associate Professors:
Babb, J. W., BA, MD UWO
Burnett, W. H., MD Toronto
Assistant Professor:
Ruby, R. R., MD UWO
Clinical Assistant Professor:
Leboldus, G. M., MD UWO

The Department of Otolaryngology offers a four year postgraduate course of training approved by the Royal College of Physicians and Surgeons of Canada, leading to the FRCS (C) examinations. One year of general internship is a prerequisite for entering this course. The four years consist of three years of training in the specialty of otolaryngology, and one year of general surgery in the various Teaching Hospitals in London.

PAEDIATRICS

392 South Street London, Ontario

Professors:
Jaco, N. T., BA, BSc, MA, BM, BCh Oxon
Valentine, G. H., MB, ChB Bristol
Associate Professors:
de Veber, L. L., MD Toronto
Hinton, G. G., BSc, MD, CM McGill
Assistant Professors:
Li, M. D., MB Taiwan

Graduates in Medicine who have served a year of rotating internship in an approved Hospital may apply for further training in Paediatrics at Victoria and War Memorial Children's Hospital. Such further training is designed for those who wish to qualify for the Royal College of Physicians of Canada in Paediatrics, or for the degree of Master of Clinical Science, or for further general training before proceeding into practice. A one year resident training programme in Paediatric Cardiology is available.

The main research interests of the Department lie in carbohydrate metabolism, metabolic studies, mental retardation, the study of mongolism, chromosome anomalies, immunohaematology, neonatology, disorders of mucopolysaccharides and aminoacidopathies. An active neonatal intensive care unit exists at St. Joseph's Hospital where detailed studies are performed on this important aspect of paediatric care. Various research opportunities exist at the Children's Psychiatric Research Institute in the fields of mucopolysaccharides and aminoacidopathies. An opportunity to participate in this investigational work is available to suitable applicants.

A formal course of training extending over a five year period after graduation, is being developed which will qualify graduates for the degree of Master of Clinical Science, or to sit for the examinations in the Royal College of Physicians of Canada.

PATHOLOGY

DENTAL SCIENCES BUILDING, Room 4045

Professors:
Haust, M. Daria, MD Heidelberg; MSc Queen's; FRCP (C)
Kaufmann, J. C. E., MB; ChB Capetown; MRCPath (Neuropathology)
McCaughey, W. T. E., MB; BCh; MD Queen's, Belfast; MRCPath
Wallace, A. C., BA; MD UWO; FACP; FRCP (C) Head of the Department
Associate Professors:
Frei, J. V., MDCM Queen's; MSc; PhD McGill; FRCP (C)
Gardner, D. G., DDS Toronto; MSD Indiana; Diplomate, American Board of Oral Pathology. Chairman of Division of Oral Pathology
Warren, B. A., BSc (Med); MBBS Sydney; DPhil; MA Oxford; FRCPA
Assistant Professors:
Ball, M. J., MD Toronto; CRCP (C) (Neuropathology)
Gilbert, J. J., MDCM McGill; FRCP (C) (Neuropathology)
Lewis, F. N., BA; MD UWO; MRC Path; FRCP (C)
Sapp, J. P., DDS Dalhousie; MS Michigan
Clinical Professors:
Mills, D. M., BA; MD UWO; FRCP (C)
Smout, M. S., MD UWO; MRC Path; FCAP; CRCP (C)
Clinical Associate Professors:
Davies, Eleanor M., MD Toronto; FRCP (C)
Slinger, R. P., BA; MD Toronto; MRC Path; FRCP (C)
Clinical Assistant Professors:
Enriquez, A. A., MD Santo Tomas; FRCP (C)
Saeed, I. R., MB; BCh; DMSc Path; MD Path Cairo; FRCP (C)
Troster, M. M., MD Toronto; FRCP (C)
Turnbull, D. I., BSc; MDCM McGill
Instructors:
Adilman, H. B., BA Saskatchewan; MD Alberta; FRCP (C)
Bell, J. H., DDS Toronto
Frishette, W. A., MD UWO; FRCP (C)
Rota, A. N., MD Toronto; MSc McGill; FRCP (C); FACP; FASCP

Graduate training is available leading to the MSc and PhD degrees in Pathology or to qualification for Fellowship in Pathology in the Royal College of Physicians and Surgeons of Canada. Training may be arranged in the Health Sciences Centre of the University or in the Pathology Departments of the Teaching Hospitals. Dental graduates may be supervised in their study for the Fellowship in the American Academy of Oral Pathology or Certification by the American Board of Oral Pathology.

Normally the research supervised will be within the principal interests of the staff of the Department. The research activities in the Department include the study of the development of tumour metastases, immunofluorescent techniques and their application, electron microscopy of renal and liver biopsies, tissue culture and the alteration of cell lines by carcinogens, the arterial wall in atherogenesis, the giant cell lesions of bone and tumours of the jaw, muscular dystrophy, the motor end-plate and certain aspects of neuropathology, platelet aggregation and adhesion, the physiopathology of thrombosis and the development of vessels in tumours.

ADMISSION:

Medical, Dental and Veterinary graduates are eligible for admission into the MSc and PhD programs. Applicants for the MSc degree who have a Bachelor's degree in Science are accepted at the discretion of the Department.

DEGREE REQUIREMENTS:

A thesis is required for both the MSc and PhD degrees. Every candidate must defend his thesis at an oral examination. The coursework in these programs will be selected on the advice of the candidate's supervisory panel. It will depend upon each candidate's prior experience and will be orientated towards providing a general background of pathology for the specific requirements of his research topic. A comprehensive examination may be required in some cases.

COURSES:

500. General Pathology. A survey or core course in general pathology intended for individuals who desire some acquaintance with fundamental processes of disease. Some knowledge of gross and microscopic anatomy is desirable.
18 hours, Full Course.

510. Current Topics in Pathology. A seminar course held throughout the year.
Half Course.

511. Oral Pathology Seminar.

512. Methods in Pathology. A course of lectures and demonstrations dealing with modern methods of investigating disease processes. Topics covered may vary from year to year, but include electron microscopy, transplantation techniques, immuno fluorescent methods, study of disease in living tissues.
Prerequisite: some previous survey course in general pathology

530. General Medical Pathology. A course of lectures, demonstrations and laboratory periods dealing with fundamental aspects of disease processes. Subjects include inflammation and repair, regressive changes, vascular diseases, disorders of growth and neoplasia, specific examples of inflammation.
Full Course.

589. Comprehensive. Course of individual instruction for MSc candidates involving reading assignments and attendance at specified lectures aimed at providing a general background of knowledge for the specialized thesis topic of the candidate. An assessment of the experimental investigation carried out by the candidate will be made.
Half Course.

590. MSc Thesis.

610. Comprehensive (PhD).

630. Special Human Pathology. A comprehensive course in human pathology, taught on a regional and systemic basis.
Prerequisite: Pathology 530
60 hours.

631. Special Pathology. A course in human pathology taught on a regional and systemic basis. It is designed for students who require a less detailed course than 630.

630. Primarily arranged for dental students.
Prerequisite: Pathology 512 or 530

640. Oral Pathology. A course, designed primarily for dental students, in pathology of the teeth, oral cavity and related structures. The oral manifestations of many systemic diseases, as well as the systemic manifestations of oral disease, are also discussed.
72 hours.

641. Graduate Oral Pathology. The pathology of the teeth, oral cavity and related structures are considered in detail. Selected topics such as neoplasms of the oral cavity, oral cytology, and histologic technique are also studied.
160 hours.

689. Comprehensive. Course of individual instruction for PhD candidates involving reading assignments and attendance at specified lectures aimed at providing a general background of knowledge for the specialized thesis topic of the candidate. An assessment of the experimental investigation carried out by the candidate will be made.
Half Course.

690. PhD Thesis.

PHARMACOLOGY

MEDICAL SCIENCES CENTRE, Room 275

Professors:
Gowdey, C. W., BA, MSc, DPhil Oxon, Head of the Department
Hamilton, J. T., BSc Edinburgh; PhD Edinburgh
Parker, J. M., MD Manitoba; DPH, PhD Toronto
Associate Professors:
Colhoun, E. H., BSA Toronto; PhD Cantab
Hirst, M., BSc Liverpool; PhD Liverpool; PhD UWO
Philp, R. B., DVM Toronto; PhD UWO
Assistant Professor:
Hersey, M. L. W., BSc McGill; MD, PhD UWO; CRCP (C), FACA
Lecturers:
Borda, I. T., MD Budapest; FRCP (C)
Lovegrove, T. D., BA, MD, MSc UWO
Meltzer, D. B., BSc Manitoba; MD UWO; FRCP (C)
Spoerel, W. E. G. A., MD Frankfurt-on-Main; FRCP (C)
White, D. F., MD UWO; FRCP (C)
Instructors:
Dinel, B. BScPhm Toronto; MSc, Ohio State
Geddes, B. A., BSc, MSc UWO
Hansford, D. F., PhmB Toronto

The present research interests of the Department are in the pharmacology of the cardiovascular system, decompression sickness, thrombus formation, and neuromuscular transmission; in relations between chemical structure, enzymes and pharmacological activity, and in neuropharmacology. Facilities are available for research in these and other fields in Pharmacology.

ADMISSION

Students with an MD, DDS, DVM, or an Honors degree in the Biological or Medical Sciences, Chemistry, or Pharmacy, are accepted as candidates for the degree of MSc and PhD in Pharmacology. Applications for admission should, in the first instance, be made to the Head of the Department.

DEGREE REQUIREMENTS

Although the emphasis is on research in the graduate programs, students are required to take formal courses. The number and selection of these courses will depend in part upon the student's previous training.

COURSES

501. General Physiology and Pharmacology. (given in cooperation with the Department of Physiology.). A survey of the principles of general physiology and pharmacology.
2 lectures, full course.

511a. Pharmacology of the Autonomic Nervous System.
Half course.

531. Neuropharmacology (Medical) — Part of Neurological Science (in cooperation with the Departments of Anatomy, Biochemistry, Physiology and Clinical Neurological Science). A study of the effects of both endogenous chemical substances and drugs on neuromuscular transmission and on the central nervous system in both healthy and diseased states, including drugs used in anesthesia, and anesthetic agents.
Average 1 hour.

532. Neurological Sciences (Medical). (in cooperation with Departments of Anatomy, Biochemistry and Physiology.).
2-3 hours, full course.

541. Seminar. The preparation of essays and the presentation of scientific reports or papers on assigned topics in pharmacology;
1 hour all year, half course.

560b. Selected Topics in Pharmacology at an advanced level. This course will deal with contemporary problems in pharmacology with stress upon environmental toxicology.
2 lectures, half course.

561. Chemical Pharmacology. Pharmacological screening, pharmacodynamics, structure-activity relationships, metabolism and toxicology of selected drug classes. Enrolment limited.
2 lectures, full course.

580. Laboratory and Tutorial. A course of training in the techniques employed in modern pharmacological investigations. Opportunity for original projects will be provided. The tutorial will supplement both lecture and laboratory work. Enrolment limited.
Minimum of 10 hours/week, full course.

590. MSc Thesis.

610. Advanced Pharmacology.
Prerequisite: Course 530 or equivalent
2 hours, full course.

690. PhD Thesis.

PHILOSOPHY

TALBOT COLLEGE, Room 313

Professors:
Binkley, R. W., BA Colorado; PhD Minnesota, Chairman of Department
Butts, R. E., BA, MA Syracuse; PhD Pennsylvania
Davis, J. W., BA, MA, PhD Boston
Johnson, A. H., BA Mt. Allison; MA, PhD Toronto; FRSC. Senior Professor
Johnson, H. J., BA Alfred; PhD Chicago
Leach, J. J., BA Heidelberg; MA Trinity; PhD Michigan State

Associate Professors:
Block, I., BA Vanderbilt; MA, PhD Harvard
Bronaugh, R. N., BA Oregon; MS, PhD Wisconsin
Bub, J., BSc Cape Town; PhD London
Freed, B., BA Kenyon; PhD Berkeley
Hockney, D. J., BA McMaster; PhD Cornell
Hooker, C. A., BSc, PhD Sydney
Marras, A., BA Colgate; PhD Duke
Maynard, P., AB Chicago; PhD Cornell
Pearce, G., BA William & Mary
Assistant Professors:
Harper, W., BS Rensselaer Polytechnic Institute; MA Rochester
Lennon, T., BA Manhattan College, PhD Ohio State
Muehlmann, R. G., BA Indiana, PhD Iowa
Nicholas, J. M., BSc Sussex; MSc Sussex
Visiting Professors:
Demopolous, W. BA Minnesota
Kyburg, H. E., BA Yale, MA PhD Columbia
Rescher, N, BS Queens, MA PhD Princeton

Students will be admitted either to the MA program or to the PhD program in accordance with their academic backgrounds. There are two programs leading to the PhD in philosophy: the regular program in philosophy, and a special program in the history and philosophy of science. Details may be obtained by writing to the Director of Graduate Studies, Department of Philosophy, Talbot College, Room 313

COURSES

The Department of Philosophy offers approximately 18-20 one-term courses each year. Topics will be chosen from among the below listed areas of Philosophy. A list of topics to be offered will be circulated to all students in the spring of each year.

500—515. Topics in History of Philosophy.

516—525. Topics in Logic and Philosophy of Logic.

526—530. Topics in Ethics.

531—540. Topics in Epistemology.

541—550. Topics in Metaphysics.

551—560. Topics in History and Philosophy of Science.

561—570. Topics in Contemporary Philosophy.

571—580. Selected Topics in Philosophy.

590. MA Thesis.

595. MA Comprehensive Examination.

596. PhD Qualifying Examination.

690. PhD Thesis.

PHYSICAL EDUCATION

THAMES HALL, Room 119

Professors:
Fairs, J. R., BSc UWO; MA Columbia
Hayden, F. J., BA UWO; MS, PhD Illinois
L'Heureux, W. J., BA UWO; MA Michigan; LLD New Brunswick
Zeigler, E. F., AB Bates; AM, PhD Yale, Dean of Faculty of Physical Education
Yuhasz, M. S., BA UWO; MS, PhD Illinois

Associate Professors:
Barney, R. K., BS, MSc, PhD New Mexico
Cunningham, D. A., BA UWO; MSc Alberta; PhD Michigan
Eynon, R. B., BA UWO; MS Illinois
Leyshon, G. A., BA UWO; MS Illinois; PhD Oregon
Paton, G. A., BA UWO; MA Michigan; PhD Illinois
Stothart, J. P., BPE, MSc Alberta, PhD Penn State
Wearring, G. A., BA UWO; MS Southern California; PhD Michigan
Assistant Professors:
Milne, D. C., BA, BPE McMaster; MA, PhD Michigan State
Orlick, T. D., BA Syracuse; MEd The College of William and Mary; PhD Alberta
Petrie, B. M., DippPE Sydney; BPE, MA Alberta; MA, PhD Michigan State
Richardson, J. R., BPHE Toronto; MSc Alberta; PhD Michigan
Semotiuk, D. M., BPE, MA Alberta; PhD Ohio State

The Faculty has offered a graduate program leading to the Master of Arts degree since 1963. Preparations and plans for a doctoral degree in Physical Education have been underway for some time, and the fall of 1974 has been set as the target date for the initiation of this program.

ADMISSION

Applicants are admitted at the discretion of the Department. The minimum requirements are as follows:

1. Graduation in Honors Physical and Health Education from the University of Western Ontario with first or second class standing, or from an accredited university with an equivalent degree and standing.
2. Graduation in any other course with first or second class standing and completion of such additional make-up work as may be determined by the Admissions Committee.

DEGREE REQUIREMENTS

The normal program of study consists of a thesis plus seven one-term courses, one of which must be P.H.E. 501. A minimum of four courses (plus 501) are selected from the list below. The remaining courses are normally senior or graduate courses related to the candidate's area of study, conducted by another department of the University.

All theses must be defended at an oral examination. Students may petition to substitute four (4) additional one-term courses for the thesis requirement. Non-thesis candidates, upon successful completion of their course work, are required to pass written and oral comprehensive examinations conducted by a Graduate Program Examining Board.

SPECIALIZATION

The Faculty is prepared to supervise research within the principal interests of its members. Two general areas of specialization are offered:

A. Arts and Social Science - (1) the history, philosophy and comparative aspects of physical education; (2) sociology and social psychology; and (3) administrative theory.

B. Bio-Science - (1) exercise physiology, scientific training in sport, and anthropometry; (2) motor learning and performance, growth and development; (3) anatomical and analytical kinesiology; and (4) health.

Additional information is available from the Chairman of Graduate Study and Research, Faculty of Physical Education.

GRADUATE

All courses listed are one term

501. Research Methods in Physical Education. Review and analysis of the characteristics and methods of scientific research. Application of research methods and techniques in physical education and sport. Critical review of published studies. Thesis planning and organization. Students with very limited training in basic descriptive and comparative statistics are asked to supplement their background through individual study. F. J. Hayden
3 hours lecture-seminar.

502. The Analysis of Human Performance. Human movement and physical activity are analyzed from a functional perspective. Emphasis is placed upon the acute and chronic effects of exercise on human functional capacity. Techniques for measurement of aerobic capacity and the prescription of therapeutic exercises are explored. D. A. Cunningham
2 hours lecture, 2 hours lab.

503. Analysis of the Superior Athlete. The performance of superior athletes in their specific sports is analyzed. Field measurements of athletes are undertaken metabolically, telemetrically and cinematographically. Performance at altitude and in high temperature conditions is studied. The various analytic approaches to the study of the superior athlete are integrated and applied by the student to specific sports in project work. M. S. Yuhasz
2 hours lecture, 2 hours lab.

504. Science and Principles of Modern Sports Training. Investigation of the scientific basis of cardiorespiratory and strength training programmes. R. Eynon
3 hours lecture.

505. Advanced Science and Principles of Modern Sports Training. Investigation of preparation for performance in selected environments and nutrition and performance. R. Eynon

506. The Administration of Physical and Health Education. Examination of selected theoretical administrative concepts and theories in the classroom and in the field. Class hours are devoted to discussion in theory in administration and the research implications of these theories. The field of experience is intended to serve as a laboratory for the examination of theory in a practical situation and will require the student to spend a reasonable amount of time "living in" and analyzing organizational behaviour. G. Paton
3 hours lecture.

507. Program Development in Physical and Health Education. Focuses upon program development as it relates to the diverse sport, athletic, recreational, and educational organizations in our field. The approach taken is intended to permit course members the possibility of critically examining their own area of interest. G. Paton
3 hours lecture.

***508. Anthropometry and Body Composition.** Studies the importance of body proportions as related to performances in specific activities and compares variations in human morphology among different groups. Outlines the anthropometric procedures in the determination of body composition. Analyzes the methods and values in the classification of body types. M. S. Yuhasz
2 hours lecture, 2 hours lab.
*Proposed 1973-74

510. A Cultural-Historical Study of Physical and Health Education. A study of body doctrines in Western culture with special reference to the history of physical education. A cultural analysis of the history of the body will be undertaken. Topics include: asceticism, social control mechanisms and the liberation of the body in contemporary society. Some

consideration will also be given to meanings of play, work and leisure in Western society. J. Fairs
3 hours lecture.

***511. The History of Canadian Sport.** An investigation of the factors related to the origin, growth and development of the sporting movement in Canada from the 17th century to the present with particular emphasis on examination and interpretation of the literature relative to the roles played by religion, government, population, economics, crises, geography, and entrepreneurship in the rise of the Canadian sporting phenomena. R. Barney
3 hours lecture.
*Proposed 1973-74

512. Health Problems and the Individual. The study of man and his health. Emphasis is placed upon individual health problems and the decision-making process including the role of physical activity in health. G. Wearring
3 hours lecture-seminar.

513. Health Problems in Society. The study of health problems related to social and cultural factors. Included is an examination of current societal health problems with implications for modification and change. G. Wearring
3 hours lecture-seminar.

***541. Analytical Biomechanics.** The study of quantitative human motion analysis including fundamental and advanced techniques in cinematography, electromyography, accelerometry, electrogoniometry and force-time analysis. J. P. Stothart
2 hours lecture, 1 hour lab.
*Proposed 1973-74

545. Growth and Motor Development. The parameters of physical growth; principles of motor development; sequential development in fundamental motor skills; assessment of motor performance in children; learning disabilities and perceptual-motor handicaps in children. D. C. Milne
3 hours lecture, 1 hour lab.

546. Field Experiences in Motor Development. Supervised advance graduate learning experiences in motor development through in-service training in a variety of remedial perceptual-motor development programmes being carried out by various agencies and institutions in the London area. D. C. Milne
Prerequisite: 545
1 hour lecture, 3 hours lab.

553. Theory of Motor Performance. Approaches to the analysis of perceptual-motor skill; components of skill; proprioception and skill development; nature of movement; time co-ordination in skill; models of mechanisms underlying skill development; the acquisition of skill. J. Richardson
3 hours lecture.

554. Advanced Topics in Motor Learning. Single Channel Operation; the effects of sensory loading; stress and performance; fatigue and performance analog computer simulation. J. Richardson
Prerequisite: 553
2 hours lecture, 2 hours lab.

555. Individual Study or Research. Faculty

556. Philosophy of Physical Education and Sport. Introduction to the philosophical analysis of physical education and sport (with some reference to school health and recreation education) in the light of the leading philosophical tendencies; possible implications for educational agencies; analysis of completed research, and the delineation of one's personal philosophy based on the persistent historical problems facing the profession. E. Zeigler
1 hour lecture, 2 hours seminar.

557. Advanced Philosophy of Physical Education and Sport. Students with a more specialized interest in this area of investigation are encouraged to familiarize themselves with the body of knowledge in the area. Examples of the various philosophical approaches are analyzed and

critiqued. Students are encouraged to carry out an investigation based on the particular approach to investigation which seems to fit their background and interests. E. Zeigler
Prerequisite: 556
1 hour lecture, 2 hours seminar.
Note: Students wishing to enrol in 556 or 557 would find it helpful to have certain preliminary courses at the undergraduate level; examples would be introductory courses to philosophy, philosophy of religion, and philosophy of education.

558. Sociology of Sport. Systematic analysis of social influences upon the practice of sport in North American society. Special attention is devoted to the inter-relationships between sport and various social institutions. B. Petrie
3 hours lecture.

559. Social Psychology of Sport. Systematic analysis of the social psychological phenomena influencing the participants in the sporting situation. The inter-relationships between athletes, coaches and spectators and the sources of strain in such relationships are evaluated. B. Petrie and T. Orlick
3 hours seminar.

560. Comparative and International *Sport and Physical Education*. Systematic examination of sport and physical education in cross-cultural perspective where manifestations of the various forms of physical activities are viewed as being products of the ecological, demographic and sociocultural sub-systems. Theoretical, conceptual and methodological, phases of comparative research will also be considered. D. Semotiuk
2 hours lecture, 1 hour seminar.

***570. Special Topics.** Intensive study and discussion of specific topics and/or issues in the areas of sport, dance, play, and exercise. Provides an opportunity for the instructor to explore a particular topic at depth with a small group of students.
1 hour lecture, 2 hours seminar.
*Proposed 1973-74

Seminar. Students are required to attend the Graduate Seminar which meets weekly during the second term to hear and to discuss papers and reports on current issues and recent research presented by faculty, visitors and students.

PHYSICS

PHYSICAL SCIENCES BLDG. Room 125

Professors:
Brannen, E., BA, MA Toronto; PhD McGill
Ferguson, H. I. S., BSc, MSc, PhD UWO
Forsyth, P. A., BA, MA Saskatchewan; PhD McGill; FRSC, (Director, Centre for Radio Science)
Hay, D. R., BSc, MSc UWO; PhD McGill
Lyon, G. F., BA MA, PhD Saskatchewan (Acting Chairman of Department)
McGowan, J. W., BSc St. F.X.; MSc Carnegie Mellon; DSc Laval
Nuttall, J., BA PhD Cambridge
Vogan, E. L., BSc, MSc UWO; PhD McGill

Associate Professors:
Bow, Y. F., BS National Chakiang; MS, PhD Michigan State
Froelich, H. R., BSc Berlin, MSc, PhD UWO
Fulford, J. A., BSc, PhD UWO
Jarmain, W. R., BA UWO, MA Wisconsin
John, P. K., BSc, Kerala; MSc Madras; PhD Ohio State
Jones, J., BSc, PhD Sheffield
Lowe, R. P., BSc, PhD UWO
Moorcroft, D. R., BASc, MSc Toronto; PhD Saskatchewan
Murty, R. C., BSc Andhra; MSc, Dip. Lib. Bombay; PhD UWO
Rose, G. S., BSc, PhD Birmingham
Stewart, T. W. W., BSc MSc UWO; PhD London
Tong, B. Y., BSc Hong Kong; MLS, MA California, Berkeley; PhD California, San Diego
Whippey, P. W., BSc, PhD Reading
Assistant Professors:
Gaily, T. D., AB Oregon State; MS, PhD Washington
Gallaher, D. F., BASc, MSc British Columbia; MA Toronto; PhD Washington
Lane-Smith, D. R., BSc, MSc Manchester; PhD Durham
Rosner, S. D., BSc Toronto; AM, PhD Harvard
Tunaley, J. K. E., BSc, PhD Sheffield
Instructor:
Chefurka, P. M. (Mrs.), BSc Manitoba; MS Montana State
Sessional Lecturers:
Dawson, D. J., BASc, MA, PhD Toronto
MacDonald, J. C. F., BA, MA British Columbia; PhD Toronto
Marton, J. P., BSc Budapest; PhD UWO

Many of the following projects are carried out in conjunction with other departments, for example Applied Mathematics, Astronomy, Biophysics, Chemistry, the London Clinic of the Ontario Cancer Treatment and Research Foundation and the Faculty of Engineering Science. Research is also carried out under the auspices of the Centre for Radio Science which maintains laboratories on and off campus. Strong connections exist with local industry.

Atomic and Molecular Physics - Theoretical atomic and molecular structure: theoretical and experimental collision studies involving electrons, ions, positrons, atoms, molecules and photons.

Lasers and Plasma Physics - Molecular and atomic lasers: laser spectroscopy, air pollution studies; interaction with plasmas.

Physics of the Lower Atmosphere (Troposphere) - Studies of thermal convection and atmosphere electricity; vapour, heat and charge transfer in clear air and storm systems. Lightning emissions.

Physics of the Upper Atmosphere (Ionosphere) - Theoretical and experimental studies of the normal and disturbed high atmosphere; ionic inhomogeneities; optical and radar observations of meteor trails, ionic and electronic concentrations and diffusion studies using signals from ground based and satellite borne transmitters; radio aurorae, airglow; radio emissions from the sun at metre wavelengths.

Design and Applications of Accelerators - Racetrack microtrons as sources of electrons and millimetre and submillimetre waves, X-rays and vacuum ultraviolet radiation: Development of the racetrack microtron as an analytical and as a therapeutic device.

Solid State Physics - Theoretical studies of amorphous materials: diffusion and emission of positrons from surfaces giving information on work functions, surface and band properties of solids; experimental studies of the properties of ionic compounds; fluctuations in conducting materials.

Other Programmes are being actively followed. In theoretical nuclear physics - scattering and nuclear models; Radiological Physics - medical applications of high energy electrons and X-ray beams and of ultrasound; use of the laser to study photo-absorption and destruction of retinal material.

For greater detail please consult our graduate brochure which is available in many Departments or may be obtained on request.

MSc REQUIREMENTS

The minimum requirements for the MSc degree in Physics may be met in one of the following two ways.

(i) Two half courses from courses numbered 501-509 Two half courses from courses numbered 501-532 A research thesis (590)

(ii) Four half courses from courses numbered 501-509 Four half courses from courses numbered 510-532 A report or review paper (591) Participation in research (592)

With the permission of the candidates advisory committee, some graduate courses in other departments may be substituted for those listed above. With similar permission one of the graduate half courses (except 501-509) may be replaced by one undergraduate course at the senior undergraduate level.

PhD REQUIREMENTS

The minimum requirements for the PhD degree in Physics are

Half courses 501-505 inclusive

Five half courses selected from courses numbered 510-532

Courses 601 and 602

A seminar (658)

A research thesis (690)

Competence in digital computer programing

With permission of the student's advisory committee graduate courses from other departments may be substituted for certain courses. Credit for work done prior to registration for a PhD in this department will be given up to a maximum of three full courses. Honours graduates of exceptional ability may be permitted to register directly into a preliminary year of a PhD programme. During this year the minimum requirements are half courses 501 to 505 inclusive and a review paper (591) related to the area of the proposed doctoral thesis.

COURSES

501. Classical Physics. Introduction to tensor analysis, relations between the strain tensor and stress tensor, energy of elastically deformed bodies, waves in bound and unbounded media.
3 lecture hours/week, Half course.

502. Classical Electrodynamics. Advanced problems in potential theory. Boundary value problems with waves; scattering, radiation and diffraction problems.
3 lecture hours/week, Half Course.

503. Quantum Physics. A first graduate course in quantum physics. Approximation methods and applications to atomic and molecular physics. Symmetries: angular momentum, spin, the exclusion principle, quantisation of electromagnetic radiation.
3 lecture hours/week, Half course.

504. Statistical Physics. An introduction to probability theory leading to a discussion of common stochastic processes. The canonical and grand canonical ensembles etc. Applications to simple physical and biophysical systems.
3 lecture hours/week, Half course.

505. Mathematical Methods of Physics. A course designed to give the student a working knowledge of the methods most commonly used in solving physical problems.
3 lecture hours/week, Half course.

510. Modern Optics*. Theory and operation of the laser. Laser application, numerical ray tracing, high resolution interferometry, transforms and transfer functions.
2 lecture hours/week, Half course.

511. Advanced Quantum Mechanics*. The material is more advanced than that given in 503. Relativistic quantum mechanics, second quantisation, Feynman diagrams and applications.
2 lecture hours/week, Half course.

512. Theoretical Solid State Physics*. One electron and many-electron theories. Properties of metals, semiconductors, insulators and superconductors. Phonons and phonon-electron interactions. Spin interaction and theories of magnetism.
2 lecture hours/week, Half course.

513. Theoretical Nuclear Physics*. General properties of nuclear forces, nuclear models and many-body theory. Interactions between nucleons and radiation, nuclear reactors and elementary particles.
2 lecture hours/week, Half course.

514. Relativity Theory*. Relativity in tensor form. The theory of gravitation. Selected topics in general relativity.
2 lecture hours/week, Half course.

515. Plasma Physics*. Hydromagnetic approach to a magnetoplasma. Boltzmann equation, waves in a warm plasma. Transport phenomena, stability theory, plasma heating and thermonuclear fusion.
2 lecture hours/week, Half course.

516. Theoretical Atomic and Molecular Spectra*. General theory of transition probability and resonances. Nuclear magnetic resonance, electron paramagnetic resonance optical spectra. Molecular beam spectroscopy. Mossbauer effect. Pressure shifts and broadening, wall shifts.
2 lecture hours/week, Half course.

517. Collision Theory*. A discussion of topics in the quantum theory of collision processes with emphasis or applications to atomic physics.
2 lecture hours/week, Half course.

521a. Ionised Media in the Terrestrial and Solar Atmosphere*. An introduction to the processes involved and the behaviour of the ionosphere/magnetosphere and solar atmosphere.
2 lecture hours/week, Half course.

521b. Ionised Media in the Terrestrial and Solar Atmosphere*. The use of radio waves as a diagnsotic tool in investigations of the ionised terrestrial and solar atmospheres.

522a. Physics of the Lower Atmosphere*. An introductory survey of the physical processes in the terrestrial atmosphere from surface to the lower statosphere. Micrometeorology; transfer of heat, moisture, momentum and pollutants.
2 lecture hours/week, Half course.

522b. Physics of the Lower Atmosphere*. Atmospheric dynamics, precipitation and electricity (in fair weather and thunderstorm conditions).
2 lecture hours/week, Half course.

524a. Experimental Spectroscopy*. A study of the spectra of atoms and diamotic molecules leading to a detailed insight into their structure.
2 lecture hours/week, Half course.

524b. Experimental Spectroscopy*. A selection of topics in modern spectroscopic applications.
2 lecture hours/week, Half course.

525a. Radiation Dosimetry*. Introduction to dosimetry in therapy and its implications.
2 lecture hours/week, Half course.

525b. Radiation Dosimetry*. *Instrumentation, apparatus and methods.*
2 lecture hours/week, Half course.

526a. Advanced Electronics*. Advanced theory of network analysis and synthesis. Active filters, antenna pattern sythesis.
2 lecture hours/week, Half course.

526b. Advanced Electronics*. Information theory, Boolean algebra, digital techniques. The philosophy of integrated circuits, principles of high speed devices and applications.
2 lecture hours/week, Half course.

531. Current Topics†.
2 lecture hours/week, Half course.

532. Advanced Topics†.
2 lecture hours/week, Half course.

590. MSc Thesis.

591. Review Paper. A report or review paper for MSc candidates in option (ii) or candidates in the preliminary year to a PhD

592. Research Participation. A course for the MSc candidates in option (ii): an introduction to research techniques by participation under the direction of an individual faculty member. This may be theoretical or experimental work undertaken during the summer months.

601. Comprehensive Examination I. A required examination for PhD candidates normally taken in the autumn of the year after registration. Its primary purpose is to detect weaknesses in the candidates general knowledge of physics in order that corrective study may be arranged. For that reason those who do not receive a passing mark at the first attempt are permitted to take the examination a second time about six months later. No more than two attempts are permitted.

602. Comprehensive Examination II. An oral examination on the review paper on the candidate's thesis topic; this is obligatory for PhD students. The purpose of this examination is to determine the adequacy of the student's knowledge of his area of research and related areas at the graduate level. It would normally be completed within two years of registration.

658. *Graduate Seminar.* A comprehensive and critical appraisal of a current or recent development in Physics.

690. PhD Thesis. Attention is drawn to the following courses in Applied Mathematics: 521, 522, 530, 531, 532, and 554. Co-ordination of the offerings of the two Departments, where suitable, is in hand for implementation in 1973-74, as this calendar goes to press.

* These courses may not be given every year.

† Proposed courses.

PHYSIOLOGY

MEDICAL SCIENCES BUILDING, Room 223

Professors:
Armstrong, D. T., BSA Toronto; MS, PhD Cornell (Professor of Obstetrics and Gynaecology)
Brooks, V. B., BA Toronto; MS Chicago; PhD Toronto. (Professor and Chairman)
Calaresu, F. R., BA Pavia; MD Milan; PhD Alberta
Mogenson, G. J., BA, MA Saskatchewan; PhD McGill (Professor of Psychology)
Associate Professors:
Bondy, D. C., MD UWO, FRCP (C)
Critz, J. B., BS (Ed), MA, PhD Missouri
Dellow, P. G., BDS, MBBS Adelaide; FRACDS
Harding, P. G. R. MD, MSc UWO; FRCS (C) (Associate Professor of Obstetrics and Gynaecology)
Mercer, P. F., DVM Toronto; PhD Cornell
Seguin, J. J., BSc MSc PhD UWO
Squires, B. P., BA, MD, PhD UWO
Vanderwolf, C. H. BSc Alberta; MSc McGill (Associate Professor of Psychology)
Wiesendanger, M. MD Zurich
Assistant Professor:
Girvin, J. P., MD, UWO; PhD McGill (Assistant Professor of Clinical Neurological Sciences

The Department of Physiology accepts qualified candidates for the degrees of MSc and PhD. The usual requirement for admission is an MD, DDS, or Honors Degree in Science. In special cases, students with other qualifications may be accepted for a prerequisite year to achieve adequate standing. Applications for admission, in the first instance, should be made to the Chairman of the Department.

The research interests of the Department are currently in the following general fields: regulatory physiology including the role of the visceral brain and endocrine system in the control of energy, water and salt exchange, and in reproduction; behavioral physiology; physiological responses of the organism to environmental temperature, activity and dietary factors; nutrition and metabolism; physiology of the central nervous system; nerve muscle and receptor physiology; gastrointestinal physiology; perinatal physiology; oral physiology; cardiovascular physiology; and renal physiology.

Facilities for research and graduate training in these fields include controlled environmental rooms, a radioisotope laboratory, radioimmunoassay equipment, a shielded laboratory, an electronics workshop, recording, stereo-taxic, histological, photomicrographic and other equipment as well as special apparatus for chemical physiology including chromatography, electrophoresis, ultra-violet —visible spectrophotometry, fluorometry, etc. Both general and online (PDP12) computing facilities will be vailable.

In addition to the general systematic course, tutorials, directed reading and research, graduate seminar courses are provided in co-operation with other Departments of the Faculty.

Students who wish to read for the MSc in Physiology will take, or provide satisfactory evidence of having successfully completed the following courses, or their equivalent: Physiology 500, 501 and 514, a course in Biochemistry and such other courses as the Department may require.

GRADUATE

Students who wish to read for the PhD in Physiology will take or provide satisfactory evidence of having successfully completed the following courses, or their equivalent: Physiology 500, 501, 511, 512 and 614, a course in Biochemistry, a course in Statistics, and such other courses as the Department may require.

In arrangement with the Department of Biochemistry, students may take Biochemistry and Physiology as a major subject.

In addition to course and research work, graduate students and fellows in the Department must, as part of their training, demonstrate and tutor in various courses. Specific Departmental Regulations for the direction of candidates may be obtained from the Department.

COURSES:

500. Mammalian Physiology.
2 lectures, 3 laboratory hours.

501. General Physiology and Pharmacology.
2 lectures.

511. Current Topics in Physiology A.
2 lecture hours.

512. Current Topics in Physiology B.
2 lecture hours.

514. Tutorial and Comprehensive in Physiology (MSc).

541a. Seminar.
2 hours, (half course).

542a. Physiology of Exercise.
1 lecture, 3 laboratory hours, (half course).

***543b. Neurophysiology.**
2 lectures, one term only (half course).
*(Proposed 1973-74)

561b. Systematic Mammalian Physiology.
2 lectures, one term only (half course).

562a. Metabolic and Reproductive Physiology.
2 lectures, one term only (half course).

***563a. Advanced Neurophysiology.**
2 lectures, one term only (half course).
*Proposed 1973-74

564. Systems Analysis in Physiology.
1 lecture, (half course).

***565b. Neurophysiology of Autonomic Somatic Integration.**
2 lecture hours, (half course).
*Proposed 1973-74

566a. Body Water and Renal Physiology.
2 lectures, one term only (half course).

567b. *Selected Advanced Topics in* Physiology.
(half course).

***568. Laboratory course in Electro- and Neurophysiology.**
Minimum of 10 hours per week.
*Proposed 1973-74

***569b. Gastrointestinal Physiology.**
2 lectures, one term only (half course).
*Proposed 1973-74

580. Laboratory and Tutorial.
Minimum of 10 hours per week.

590. MSc Thesis.

614. Tutorial and Comprehensive in Physiology (PhD).

690. PhD Thesis.

PLANT SCIENCES

BIOLOGICAL AND GEOLOGICAL SCIENCES BUILDING, Room 232

Professors:
Bancroft, J. B., BSc British Columbia; PhD Wisconsin (Chairman)
Cook, F. S., BA, PhD Toronto
Hickman, C. J., BSc, PhD, DSc Birmingham
McKeen, W. E., BSc, MSc; PhD Toronto
McLarty, D. A., BA UWO; PhD Columbia
Orloci, L., BSF Sopron; MSc, PhD British Columbia
Walden, D. B., BA Wesleyan; MSc, PhD Cornell
Wilson, D. G., BA Toronto; BA, MA, Queen's; PhD Wisconsin
Associate Professors:
Cavers, P. B., BSA Toronto; D.I.C. London; PhD Wales
Fahselt, M. D., BA Saskatchewan; PhD Washington
Greyson, R. I. BA British Columbia; MSc, PhD Oregon
Jancey, R. C., BSc, MSc Southampton; PhD Sydney
Hopkins, W. G., BA Wesleyan; PhD Indiana
Phipps, J. B., BSc Birmingham; PhD UWO
van Huystee, R. B., BA, MA Saskatchewan; PhD Minnesota
Wellman, Angela M., BSc, PhD Bristol
Assistant Professor:
Day, A. W., BSc, PhD Reading
Honorary Lecturers:
Minshall, W. H., BSA Toronto; MSc, PhD McGill
Richardson, L. T., BA McMaster; MA, PhD Toronto
Ward, E. W. B., BSc Wales; MSc, PhD Alberta

Graduate students are accepted for programs of research, together with course work, leading to the degree of MSc and PhD in Botany. The research interests of the Department are as follows:

Ecology. Dynamics of plant populations. Seed dormancy and seedling establishment. The ecology of species of flooded areas along riverbanks. Analysis of vegetation and environment including ordination, classification and species pattern. Acclimatization of plants to cold. Influences of photoperiod and growth regulators on increased resistance to cold injury.

Genetics. Mitotic segregation, diploid formation and somatic nuclear division in fungi. Inheritance of parental flavonoid compounds, biochemical pathways of hybrids. The description of genetically determined organ variability in plants *(Lycopersicum, Nigella and Zea).* Numerical analysis of chromosome structure and breakage point data. Somatic cell cytogenetics *(Zea),* with particular reference to analysis of variation in chromosomes, a study of somatic association, and chromosome replication. Autoradiographic studies of nuclear cycle, including the action of some chemicals on chromosome breakage. Aspects of germination and growth of adenine-requiring mutants of *Neurospora.* Mutation rates during cryogenic storage of fungi.

Growth and Development. Development and characteristics of isoenzymes of malic dehydrogenase in maize tissue. Germination, growth and development of pollen and spores. Occurrence and distribution of Bryophytes in Southwestern Ontario. Analysis of initation and growth of flowers and other organs and an analysis of hormonal control of organogenesis. Physiologic and spectrophotometric analysis of phytochrome behavior. Growth regulatory aspects of phenylpropanoid

metabolism. Control of pigment accumulation, plastid development and photosynthetic activities in virescent mutants of maize. The relationships between metabolic patterns and growth and differentiation of cells. Isozyme patterns of various cell populations in tissue cultures of *Arachis hypogaea.* Ionizing radiation — effects on cell growth and development. Analysis of aberrant phyllotaxy in maize. Physiological genetics of corn pollen. Investigations of course and rate of breakdown of "native" lignin by micro-organisms particularly *Aspergillus sp.* Metabolism of aromatic acids which are derivable from lignin. Studies on the occurrence and metabolism of organic acids. Physiology of herbicidal action. Metabolic root pressure and solute uptake.

Microbiology. Genetical and developmental studies of *Ustilago violacea.* Biology of plant pathogenic fungi, especially phycomycetes. Root/fungus relationships. Biology of Zoospores. Chytrid parasitism of algae. Field studies on and nutritional requirements of freshwater algae. Powdery mildews and their host parasite relations. Cryogenic storage of biological materials; mechanisms of resistance to freeze thaw injury. Cytology of somatic nuclei in fungi. Regulation of germination. Ethane, methane and natural gas oxidation by fungi. Systematics of some Fungi Imperfecti. Effects of pesticides on soil micro-flora in relation to plant disease control. Selective toxicity and mode of action of systemic fungicides. Physiology of psychrophilic fungi, especially plant pathogens. Chemical factors in disease resistance.

Systematics and Statistical Plant Sciences. Biochemical systematics with emphasis on flavonoids, alkaloids and free amino acids. Evaluation of their usefulness as taxonomic characters. Quantitative taxonomic studies in the tribe Podalyrieae (Leguminosae). Statistical ecology and systematics of plant populations. Studies in the theory and methodology of Systematics, particularly empirical studies on the non-specificity hypothesis and patterns of variation at the generic level.

COURSES:

550. Topics in Morphogenesis and differentiation/R. I. Greyson.
2 hours, full course.

552. Advanced Plant Physiology and Biochemistry I/F. S. Cook, W. G. Hopkins, D. G. Wilson, R. B. van Huystee.
2 hours, full course.

553. Advanced Ecology I/P. B. Cavers and L. Orloci.
2 hours, full course.

554. Advanced Genetics I/A. W. Day, M. D. Fahselt, D. B. Walden, A. M. Wellman.
2 hours, full course.

556. Biochemical Systematics/M. D. Fahselt.
2 hours, full course.

558. Numerical Techniques in Taxonomy/R. C. Jancey and J. B. Phipps.
2 hours, full course.

559. Philosophy of Systematics/R. C. Jancey and J. B. Phipps.
2 hours, full course.

560. Freshwater Algae/D. A. McLarty.
2 hours, full course.

561. Virus Diseases/W. E. McKeen.
2 hours, full course.

570. Mycology and Plant Pathology/C. J. Hickman and A. M. Wellman.
2 hours, full course.

571. Host-parasite Relations/W. E. McKeen.
2 hours, full course.

590. MSc Research and Thesis-/Staff.

652. Advanced Plant Physiology and Biochemistry II/F. S. Cook, W. G. Hopkins, D. G. Wilson, R. B. van Huystee.
2 hours, full course.

653. Advanced Ecology II/P. B. Cavers and L. Orloci.
2 hours, full course.

654. Advanced Genetics II/A. W. Day, M. D. Fahselt, D. B. Walden, A. M. Wellman.
2 hours, full course.

659. Advanced Radiobiology/R. B. van Huystee.
2 hours, full course.

690. PhD Research and Thesis-/Staff.

POLITICAL SCIENCE

SOCIAL SCIENCE CENTRE, Room 3266

Professors:
Barnard, F. M., BA, MA Oxon; PhD Leicester
Beecroft, E., BA, MA Toronto; PhD Yale
Dawson, W. F., BA Toronto; MA Queen's; DPhil Oxon
Hossé, H. A., BA, MA Manitoba; PhD Ottawa
Pearson, N., BA Durham; FRTPI
Associate Professors:
Cartwright, J. R., BA Queen's, MA, PhD Toronto
Dobell, W. M., BA McGill; MA, BLitt Oxon
Dunlop, C. C., BA, MA Queen's
Kymlicka, B. B., BA British Columbia; MA, PhD Columbia
Melvin, R. A., BA Manitoba; PhD Alberta
Noel, S. J. R., BA Memorial; MA, DPhil Oxon
Sansom, T. R., BA New Brunswick; PhD London
Assistant Professors:
Cohn, T. H., BA Michigan; MA Wayne State; PhD Michigan
Harvey, T. G., BA Florida State; MA, PhD Hawaii
Khanh, H. K., BA Johns Hopkins; MA Lehigh; PhD California
McDougall, A. K., BA McGill; MA Carleton; PhD Toronto
Miller, A. J., BSc London; MA McMaster; PhD McGill
Vernon, R. A., BA Cantab; MA Sussex; PhD London
Westmacott, M. W., BA Calgary; MA Carleton; PhD Alberta

MA DEGREE

Admission Requirements

Candidates are admitted at the discretion of the Department. The minimum requirements for admission are as follows:

1. Graduation in Honors Political Science from The University of Western Ontario with first or second class standing or graduation from another accredited university with an equivalent degree and standing.
2. Graduation in Honors or four-year programs other than Honors Political Science from The University of Western Ontario or another accredited university, provided that the applicant achieved a first or second class standing in his program and has successfully completed six undergraduate political science courses distributed among the major fields of political science, with an average standing in these courses of at least second class honors At the discretion of the Department, one or two closely related courses in subjects other than Political Science may be substituted for one or two of the six political science courses.

3. Graduation in ordinary General degree programs of The University of Western Ontario or other accredited universities with first or second class standing, plus the completion of a Special Undergraduate Year, consisting mainly of senior honours political science courses, with first or second class standing.

Period of Study

Applicants who meet one of the above requirements will need a minimum of one year in attendance.

Requirements

Three graduate courses and a thesis are required for the degree. No more than two courses may be in any one sub-field of the discipline. In exceptional circumstances, and with the prior approval of the Department, a candidate may take one graduate course offered by another Department or Faculty of the University.

The thesis, in which the candidate must exhibit his ability for research and critical judgment, must be defended orally. The Department also reserves the right to require an oral or written comprehensive examination which would cover the three courses chosen by the candidate and/or to require the candidate to withdraw at any time if his work is unsatisfactory.

PhD DEGREE

Admission Requirements and Periods of Study

Candidates must normally hold an MA degree in Political Science or its equivalent, and they will be required to spend at least two years in residence.

Requirements

(a) **Courses** Candidates will normally be required to take three courses in their first year of residence, one of which will be Political Science 500 (if not already taken as part of the MA program) and the remaining two related to his PhD thesis field. A graduate course offered by another department may be substituted for one of the two non-compulsory courses; in that case, however, *permission of both Departments concerned must be obtained first.* Candidates must obtain at least a B grade in all courses and may be asked to withdraw at any time if in the Department's judgment their work is unsatisfactory.

(b) **Candidacy Examination** At the end of his first year in residence, the candidate will be required to undergo an oral comprehensive examination which will cover mainly, though not exclusively, three fields of specialization chosen by the candidate.

(c) **Languages** The Department will require the candidate to have a satisfactory knowledge of any language or languages, classical or modern, which may be necessary to his field of research.

(d) **Statistics** The Department will require the candidate to have skill in statistics whenever necessary to his field of research.

(e) **Thesis** A thesis showing evidence of scholarly research and orginality is the *major requirement. The candidate will select a topic* in consultation with his advisor. An outline of the proposed thesis must be submitted to the Department for approval, normally at the end of his first year in residence. The thesis must be defended at a faculty oral examination.

COURSES:

500. The Scope and Method of Political Science.

501. Contemporary Political Thought.

502. Research Techniques and Social Statistics.

503. History of Political Thought.

504. Selected Problems in Political Philosophy.

505. Political Psychology.

510. Theories of International Politics.

511. International Organization.

512. Studies in Foreign Policy.

520. Provincial and Local Government in Canada.

521. Politics of Urban and Regional Planning. (a)Urban planning
(b)Regional planning

522. Development Aspects in Industrializing Nations. (Offered jointly with Geography and Sociology)

523. Municipal Administration in Canada and Abroad.

530. Canadian Governmental Institutions.

531. Canadian Political Processes.

532. Comparative Federalism.

540. Canadian Public Administration.

541. The Policy-Making Process.

542. The Control of Administration.

543. Managing the City. (a)Canadian aspects.
(b)International aspects.

545. The Politics and Administration of Pollution Control.

550. United States Government and Politics.

560. Comparative West European Politics.

561. Comparative Communist Systems.

562. The Politics of Developing Countries.

564. The Commonwealth.

565. Electoral Studies.

570. Selected Topics.

590. MA Thesis.

690. PhD Thesis.

All courses listed are not necessarily offered every year. For further information write to the Chairman, Graduate Committee, Department of Political Science.

PSYCHIATRY

UNIVERSITY HOSPITAL, Room 100F21

Professor and Chairman of the Department: G. F. D. Heseltine

Professors:

Heseltine, G. F. D., BA Manitoba; LMSA West London; DPsych. McGill; CRCP (C); MRC Psych Eng.

Hobbs, G. E., BA, MD Toronto; MPH Michigan; FRCP (C), FAPA

Aufreiter, J., MD Vienna, LMCC Vienna; CRCP (C)

Associate Professors:

Bacal, H. A., BA, MDCM McGill

Keil, W. E., MD UWO; CRCP (C)

Max, P., BA, MD UWO; CRCP (C)

Tillmann, W. A., MD, MSc UWO; CRCP (C)

Mai, F. M., MB S. Africa, MD S. Australia

MacPherson, C., BSc Mt. Allison, MSc, Dalhousie, PhD Columbia

Clinical Associate Professors:
Goldberg, B., BSc New Brunswick; MD, CM Dalhousie; CRCP (C)
Wickware, D. M., MDCM Queen's; DPsych Toronto; CRCP (C)
Assistant Professors:
Gort, G. H., MD Alberta; CRCP (C)
Jurjans, V., MD Tuebingen; CRCP (C)
McLeish, J. C., MD UWO; CRCP (C)
Frelick, L., MD Queen's, CRCP (C)
Clinical Assistant Professors:
Heasman, G. A., MB, BS London; MRC Psych; CRCP (C)
Deinum, E. Jeanne, MD UWO; DPsych Toronto; FRCP (C)
Dubois, J. R., BSc, MD Michigan; CRCP (C)
Galbraith, D. A., MD UWO; CRCP (C)
Aufreiter, G., MD Vienna
Conlon, M. F., MB Ireland, DPM London, MRC Psych. London, England
Summerby, J. H., BSc MDCM McGill; CRCP (C)
Thompson, M. G., BSc, MD Toronto; DPsych., FRCP (C)

Graduate training in Clinical Psychiatry is provided for suitable applicants wishing to qualify for Certification or Fellowship examinations of the Royal College of Physicians and Surgeons of Canada.

The program for postgraduate training in psychiatry is oriented toward a dual goal. *Its aim is to give medical practitioners a solid foundation in basic psychiatry and* the opportunity to develop expertise in a special area of interest.

On the individual level, the program is designed to allow the student ample opportunity for expression of his own unique ingenuity and scientific curiosity. The teaching staff offer core material, guidance in its manipulation and aid in the student's pursuit and utilization of current theoretical concepts. Wherever possible, flexibility of choice in time, place and pace for learning is left to the postgraduate. Through representation on committees, residents are expected to participate actively in departmental decision making processes. The department therefore encourages applications for residency programs from students who will maintain a healthy skepticism and a constructively critical attitude toward both the program and the subject matter contained therein.

The academic and clinical work is individualized to meet the needs of the particular postgraduate while at the same time it is comprehensive enough that the resident receives the required core training in the many areas necessary for the Royal College examinations.

In his first two (core) years the resident concentrates on the basic body of knowledge necessary for assessment, formulation, diagnosis, treatment and prevention of mental illness. In his last two (specialty tract) years he continues his supervised long term psychotherapy cases while delving more deeply into the concepts and techniques applicable to the subspecialty of his choice. Throughout, every effort is made to ensure that the academic and clinical aspects of the program are experienced.

A. Phase 1 - Core Program

For the purposes of core training in the resident's first two years the hospitals are treated as specialized modules in a total learning continuum. Each hospital has a director of education and an education committee and each is responsible for a defined area of the total program. The subject matter has been divided into sections which closely correspond to that in some of the major textbooks.

The principal areas of concentration in seminars, lectures and clinical demonstrations in the four core modules may be outlined as follows:

Module 1: The London Psychiatric Hospital and St. Thomas Psychiatric Hospital are responsible for teaching programs in the following areas:

1. History of Psychiatry
2. Assessment in Psychiatry
3. The Psychiatric Syndromes - The Organic and Functional Psychoses
4. Personality Disorders - Sexual Deviations
5. Psychiatric Emergencies
6. The Organic Therapies - Physical and Psychopharmacological
7. Geriatric Psychiatry
8. Forensic Psychiatry
9. Health Service Delivery System
10. Fields Related to Psychiatry - Psychology, Social Work, Psychiatric Nursing, others.

The lectures and seminars on the above topics concentrate on assessment, psychiatric emergencies and the functional and organic psychotic disorders.

Module 2: St. Joseph's and Victoria General Hospitals, with their allied community agencies, are responsible for teaching in the following areas:

1. Current Theories of Personality and Psychopathology - Classical Psychoanalysis, Cultural and Interpersonal Psychoanalytic and Psychodynamic Theories and Personality Theories derived from Psychology.
2. Psychiatric Syndromes - Psychoneurotic Disorders, Personality Disorders, Stress Reactions, Addictions, and Border Line States
3. Psychotherapies - Individual, Group, Family, Milieu, and Evaluations of Psychiatric Treatment

Module 3: The Children's Psychiatric Research Institute, Children's War Memorial Hospital and Madame Vanier Children's Services are responsible for teaching in the following areas:

1. All of Child and Adolescent Psychiatry, including assessments, functional and organic psychoses, the neuroses and personality disorders, and the treatments used therein.
2. Mental Retardation
3. Genetics in Psychiatry
4. Sociology and Psychiatry
5. The Role of the Family in Psychiatry
6. Epidemiology
7. Hallucinogens
8. Concepts of Normality in Psychiatry
9. Normal Psychosexual Functioning

Concentration is on number 1 of the above. This module also has some seminars on current theories of personality and psychopathology and introduces the student to learning theory.

Module 4: The University Hospital in this module, attempts to cover many of the academic space not previously elucidated in the first three modules. It covers the following areas:

1. Basic Biological Sciences - Neurochemistry, Psychopharmacology, Sleep and Dreams, Neurophysiology (with concentration on the cortex and limbic system)
2. The basic Psychological Sciences - Perception, Cognition, Memory, Learning, Motivation, Ethology and Social Communication
3. Basic Sociocultural Sciences - Anthropology and Psychiatry, Sociology and Psychiatry
4. Experimental Psychopathology
5. Neurology
6. Psychosomatic Medicine
7. Psychiatric Disorders not in standard nomenclature - atypical psychoses, post-partum disorders, others

B. Phase 2 - Specialty Tracts

For his second two-year period the resident delineates a personal program with his tutor, the department and the coordinator of the particular specialty network in which he wishes to further concentrate. The following are among the networks available for specialty training: Child & Youth, Geriatric, Forensic, the Psychotherapies (individual, family and group), the Behavioral Therapies, Liaison, Community, Psychoanalysis.

A detailed description of the Program is available on request.

PSYCHOLOGY

SOCIAL SCIENCES CENTRE, Room 7406

Professors:
Gardner, R. C., BSc Alberta; MSc, PhD McGill
Jackson, D. N., BSc Cornell; MS, PhD Purdue
McClelland, W. J., BA, MA Toronto; PhD London. Chairman of Department
Mogenson, G. J., BA, MA Saskatchewan; PhD McGill
Neal, Leola E., BA, MA, PhD Toronto. Dean of Women
Paivio, A. U., BSc, MSc, PhD McGill
Turner, G. H., BA, MA, PhD Toronto
Williams, D. C., BA Manitoba; MA, PhD Toronto. President and Vice-Chancellor
Wright, Mary J., BA UWO; MA, PhD Toronto
Visiting Professor:
Foulds, G. A., BA Liverpool; PhD London
Associate Professors:
Bucher, B., AB Knox; PhD Princeton; PhD Pennsylvania
Chambers, D. A., BA British Columbia; MSc, PhD McGill
Denny, J. P., BA Toronto; PhD Duke
Kendall, S. B., BA Indiana; PhD Emory
Kimura, Doreen, BA, MA, PhD McGill
Lobb, H. O., BA, BEd, MEd Saskatchewan; PhD Toronto

Murray, H. G., BA, MA UWO, PhD Illinois
Pylyshyn, Z. W., BEng McGill; MSc, PhD Saskatchewan
Reitz, W. E., BA Pennsylvania State; MA Illinois; PhD Pennsylvania State
Roberts, W. A., BSc Maryland; MA, PhD Bryn Mawr
Schnore, M. M., BA, MA UWO; PhD McGill
Siess, T. F., BA Valparaiso; PhD Minnesota
Taylor, F. W., BA, MA, PhD Toronto
Vanderwolf, C. H., BSc Alberta; MSc, PhD McGill
Vidmar, N. J., AB MacMurray; AM, PhD Illinois
Wilkinson, F. R., BA Utah; MA Hawaii; PhD Michigan State

Assistant Professors:

Baran, D., BA McGill; MA Columbia; PhD Michigan
Boles, J., BA Cornell College; PhD Indiana
Carlson, P. M., BS Wisconsin; PhD Washington
Chamberlain, L. W., BSc UWO; PhD Keele
Evans, D. R., BA Toronto; MA Ottawa; PhD Toronto
Fay, T. L., BA Michigan; MS, PhD Northwestern
Goodstadt, M. S., BA Manchester; PhD Stanford
Murphy, K. C., BA, PhD Minnesota
Neufeld, R. W. J., BA Alberta; MSc, PhD Calgary
Pederson, D. R., BA Minnesota; MA, PhD Iowa
Pepper, Susan, BA Toronto; PhD Stanford
Prytulak, L. S., BA Toronto; PhD Stanford
Rollman, G. B., BA Rochester; MA, PhD Pennsylvania
Siegel, Jane A., BA Purdue; PhD Michigan
Siegel, W., BA Toronto; PhD Michigan
Simner, M. L., BA Syracuse; MSc North Carolina State; PhD Cincinnati
Smeriglio, V. L., BA Brown; MA, PhD Iowa
Sorrentino, R. M., BA S.U.N.Y. Buffalo; MA American; PhD S.U.N.Y. Buffalo
Spence, I., MA Glasgow; MA Guelph; PhD Toronto
Stone, G. L., BA U.C.L.A.; MA, PhD Michigan State
Van Fleet, F. M., BA, MA McMaster; PhD Colorado

The graduate program provides advanced training in general psychology with specialization in clinical and experimental psychopathology, cognition and verbal processes, counselling psychology and occupational behavior, developmental, experimental social, learning and motivation, measurement, personality theory and research, physiological and comparative, sensation and perception. The nature of the clinical program is such that students require more than the minimum number of courses set by the Department and must, in addition, serve summer internships in agencies such as hospitals and clinics.

FACILITIES OF THE DEPARTMENT

Facilities for experimental research in the new Social Science Complex include animal laboratories, a nursery school laboratory and rooms specially designed for research with human subjects in perception, psychophysiology, learning, developmental, personality and experimental social psychology. Standard equipment is available, and additional special equipment necessary for a student's research may be purchased. Facilities to aid in running experiments include a PDP-8 and two PDP-12 computers complete with analog converter, oscilloscope, floating point processor, etc. An engineering shop, an audio-visual unit, a work shop, and electronic consultants are available. Data processing equipment includes programmable and standard calculators. The University has a large DEC PDP-10

computer installation for time sharing purposes and a CDC Cyber 73/14 system for batch processing. Remote terminal, card reader and printer facilities for use with the PDP-10 are available. In addition to a library of computer programs, full-time programmers are available for special programs or consultation.

In addition to the Department of Psychology in the new University Hospital on campus, potential field settings (and sources of subjects) for research include, in addition to industry and schools, three mental hospitals, psychiatric wards in two general hospitals, an Alcoholism and Drug Addiction Research Foundation, a Child Guidance Clinic, a Children's Psychiatric Research Institute, a Crippled Children's Treatment Centre and several nursery schools and infant and preschool day care centres. Four mobile laboratories are available for off-campus research.

MA DEGREE

The purpose of the master's program is to increase the student's general knowledge of psychology beyond that obtained in undergraduate courses and to train him for research and scholarly work. The program also provides a foundation for advanced training in applied psychology. Candidates are required to take three graduate courses, and to submit a thesis based on an empirical investigation of a problem within some area of psychology. The thesis research is supervised by a faculty member to whom the student is apprenticed.

The minimum residence requirement is one academic year of full-time study by a candidate entering with a Canadian Honors degree or its equivalent, but students do not normally complete requirements for the degree in the Spring and are expected to remain in residence during the summer.

PhD DEGREE

The primary purpose of the doctoral program is to train scientists and university teachers and in some cases, psychological practitioners. The program typically includes graduate seminars and tutorials, a comprehensive examination in one area of specialization, and a dissertation based on a research project. Individual programs of study are encouraged, and include teaching and research apprenticeship training with members of staff. The minimum residence requirement is three academic years of full-time study after an Honors level Bachelor's or two after a Master's degree but minimum residence is usually insufficient. All students are expected to be in residence during the summer.

PART-TIME STUDIES

Students who wish to undertake graduate work on a part-time basis will be admitted only at the discretion of the staff in the area concerned.

ADMISSION REQUIREMENTS

MA Degree: For admission to the Faculty of Graduate Studies a student must have obtained at least second class honors (B standing) in the final two years of his undergraduate work combined. To be successful, applicants in psychology generally need a B† average or better.

PhD Degree: An MA degree in psychology is normally required for admission as a PhD candidate in the Department. The Department strongly prefers to admit students to the MA level, initially.

Graduate Record Examination results (Aptitude and Advanced Tests) are required and should be made available at the time of application. M.A.T. scores may be accepted in certain cases.

COURSES:

500-509. Learning and Motivation. Introduction to S-R and S-S theories of learning; classical conditioning; operant conditioning; discrimination learning; punishment; stimulus generalization; problem solving; partial reinforcement; frustration theory; sequential theory; memory processes; and motivational models.

510-519. Sensation and Perception. Psychophysical theory and methods; physiological basis of sensory and perceptual processes and their stimulus correlates; spatial and temporal factors; color vision; adaptational processes; theories and models of perception; and, developmental and motivational aspects of perception.

520-529. Physiological and Comparative. Behavior from a biological point of view, especially in relation to the structure and function of the nervous system. Topics vary from year to year, reflecting the research interests of faculty and students, and have included: animal behavior, human brain function, function of hypothalamus and hippocampus, learning and memory, motor system, psychopharmacology, and sensory systems.

530-539. Developmental Psychology. Human and child psychophysiology; learning, socialization, cognition, and perception in the infant and young child; comparative fetal and infant behavior development; early childhood education.

540-549. Research Design and Measurement. The Design and Analysis of Experiments; statistical theory; multivariate statistical methods; numerical analysis; statistical computing; measurement and scaling.

550-559. Cognitive Processes. Topics such as concept formation; reasoning; problem solving; computer simulation of cognitive processes; creative thinking; crosscultural variation in thinking processes; decision making and game theory.

560-569. Experimental Social. An overview of problems in social psychology; theory and method; social learning and motivation; person perception; attitudes; social influence; group structure and process.

570-579. Verbal Learning, Memory, and Psycholinguistics. Stimulus and response parameters; coding or mediating processes; theoretical interpretations of verbal learning; processes in short-term and long-term memory; structural aspects of language; psycholinguistic phenomena including developmental aspects; situational determinants, pathology, and individual differences in language and verbal behavior.

580-589. Personality Theory and Research. Critical evaluation of theories concerning the nature and function of the person as a psychological entity; empirical foundations and support for personality theory; personality research methodology; the theoretical and quantitative foundations of assessment; test theory, construction, and validation.

600-609. Educational Psychology. Psychology applied to the analysis of education; research and methods to evaluate and modify education, including the problems of using the "real world" as a laboratory. Examination of current educational practices in view of cognitive theory, developmental processes, individual differences, and the principles of learning.

620-629. Experimental Psychopathology. Theoretical foundations of psychopathology; etiology; assessment and treatment of behavior disorders and organic impairments.

630-639. Counselling Psychology and Occupational Behavior. A critical survey of alternative counselling strategies and approaches; research on counselling practice and couselling outcomes, assessment in counselling; research on occupational choice and career development.

640-649. Current Topics. Proseminars in various areas of specialization conducted in cooperation with many faculty members. Psychology 640 is required of all MA students.

680-689. Tutorial in Experimental and Theoretical Psychology.

590. MA Thesis.

690. PhD Thesis.

NOTE: At least one seminar in each of the above areas is normally offered each academic year. Seminars are frequently inter-disciplinary with contributors from other Departments, such as: Computer Science, Neurology, Physiology, Sociology, Ps ychiatry, Physics, and Paediatrics.

SOCIOLOGY

SOCIAL SCIENCE CENTRE, Room 5306

Professors:
Balakrishnan, T. R., BA, MA Madras; PhD Michigan
Klapp, O. E., AB, AM, PhD Chicago
Kunkel, J. H., BA Pomona; MA, PhD Michigan
Associate Professors:
Basavarajappa, K. G., BSc Mysore; MSc Karnatak; PhD Australian National
Ebanks, G. E., BA London; MA, PhD Cornell
George, P. M., BA Earlham; MA Boston; PhD North Carolina
Pryor, E. T., BA St. Thomas Aquinas; MA Michigan; PhD Brown
Rinehart, J. W., BA, MA Michigan State; PhD Ohio State
Singer, B. D., BA Wayne State; MA, PhD Pennsylvania
Turner, R. J., BA Sacramento State; PhD Syracuse
Assistant Professors:
Boydell, C. L., BA Rutgers; MA, PhD Massachusetts
Denis, A. B., BA Carleton; MSc, PhD L. S. E.
Grindstaff, C. F., BA Wayne State; MA, PhD Massachusetts
Henshel, R. L., BA Texas; PhD Cornell
Jarvis, G. K., BA Brigham Young; PhD Michigan
Marin, I. C., BS CUNY; MA, MS, PhD Michigan
Nobbe, C. E., BA, MA, PhD Washington
Okraku, I. O., BA Ghana, MA, PhD Cornell
Silverman, R. A., BA Toronto; MA, PhD Pennsylvania
Stelling, J. G., BA Michigan; PhD Chicago
Teevan, J. J., BA SUNY; MA, PhD Indiana
Westhues, K., BA Conception College; MA, PhD Vanderbilt
Whitehead, P. C., AB Providence College; MA, PhD Massachusetts
Wien, F. C., BA Queen's; MA, PhD Cornell
Williams, J. I., BA Nebraska Wesleyan; MA New Hampshire; PhD Florida State
Zuzanek, J., PhD Charles U., Prague

PROGRAM OF STUDIES

The Department offers work leading to the MA degree. Population Studies, Social Organization and Social Psychology constitute the three main areas of concentration. Within these areas, special attention is given to demography and urbanization, medical sociology, collective behaviour and communications and deviant behaviour.

To be awarded the MA degree, a candidate must satisfy the Department of his/her competence in Sociological Theory, Research Methods and Statistics. Students without adequate training in these areas prior to entering the program must expect to spend a longer time than those specified below since these deficiencies must be made up. The minimal requirement for the MA degree is a program of six graduate half courses (or their equivalents) plus the MA Rsearch Paper. These six half courses are exclusive of courses in Theory, Methods and Statistics which a student may have to take in order to satisfy the Department of his/her competence in these areas.

ADMISSION REQUIREMENTS

1. Graduation in Honours Sociology from the University of Western Ontario with first or second class standing or graduation from another accredited university with an equivalent degree and standing.
2. Graduation from other honours programs or General BA programs from an accredited university with at least a B average (second class standing). Although admission to the program is possible from undergraduate fields other than Sociology, deficiencies may have to be remedied as prescribed by the Department. Graduates with high standings in any field are encouraged to apply.

Students are requested to submit results from the Graduate Record Examination. Students for whom English is not their native tongue should submit evidence of proficiency in spoken and written English.

Financial assistance for those admitted into the MA Program is available from the Department. Early applications will be given priority. Completed applications should be in by June 30 preceding the September of intended registration. For further information and application blanks, please write to the following:

Admissions Officer
Department of Sociology
Social Science Centre
University of Western Ontario
1151 Richmond Street
London, Ontario
N6A 3K7

PERIOD OF STUDY

1. Graduates from Honours Programs in Sociology are admitted directly into the MA Program and are normally expected to complete the Master's Program after 3 terms in residence (September to August).
2. Graduates from Honours Programs other than Sociology are admitted into the MA Program but must take the full Qualifying Year Program and are expected to complete the Master's Program after 5 terms in residence.
3. Graduates from other programs are normally expected to complete the Master's Program after 5 terms in residence (2 academic years, September to May and the intervening summer). These graduates are admitted into the Qualifying Year and must apply for admission into the MA Program upon completion. Entry into the MA Program depends upon satisfactory performance in the Qualifying Year. Acceptance into the Qualifying Year is no guarantee of acceptance into the MA Program.

GRADUATE

QUALIFYING YEAR (8 half courses or equivalent)

Sociology 400, 402, 404

One of Sociology 406 or 434

One of Sociology 452, 453, 454, 455, 456, 457, 461

One of Sociology 441, 436 or Psychology 560

Two options (1 full or 2 half courses) within or outside of Sociology

MA PROGRAM (6 half courses or equivalent, plus MA Research Paper)

One full or two half courses chosen from the candidate's major area of concentration*

Electives (4 half courses or equivalent)

Research Paper (1 credit, full year program of research) in the candidate's major area of concentration*

*Population Studies (P), Social Organization (O), and Social Psychology (SP) constitute the three areas of concentration.

COURSES

NOTE: All 400 level courses are half courses. They are Qualifying Year courses and are also listed in the Undergraduate Calendar as Fourth Year Honours courses.

400a. Advanced Statistics. Parametric and non-parametric social statistics. Test of significance and measures of association, analysis of variance, correlation, regression and probability will be studied extensively.
Prerequisite: Sociology 231 or equivalent
(3 hours - Seminar).

402a. Research Methodology in Empirical Sociology. A comprehensive study of the problems of methodology and research design. The methodology of major studies in sociology will be critically examined.
Prerequisite: Sociology 231 or equivalent
(3 hours - Seminar).

404a. Sociological Theory. An introduction to theory construction and contemporary sociological theories.
Prerequisite: Sociology 230 or equivalent
(3 hours - Seminar).

406a. Population and Social Structure. The relevance of demographic processes to social organization and the interrelation of fertility, mortality and migration with social psychological and structural variables.
(3 hours - Seminar).

434b. Human Ecology. The consideration of the concepts of human ecology as applicable to the interrelationships of population, environment, technology and organization in society.
(3 hours - Seminar).

436b. Selected Topics in Social Psychology. Topics of current interest to social psychologists will be the focus of discussion and individual research.
(3 hours - Seminar).

437a. Selected Topics in Deviant Behaviour. A focussed examination of specific topics in deviant behaviour. Canadian research will be examined in areas such as mental illness, delinquency, crime and sexual behaviour.
(3 hours - Seminar).

438a. Canadian Society. The structure and functioning of Canadian society. An examination of the political, economic, cultural and value structures and processes.
(3 hours - Seminar).

441a. Small Groups. Empirical study of social psychological phenomena with an introduction to empirical laboratory and field methods used in social psychology.
(3 hours - Seminar).

444a. Sociology of Addictions. Theoretical, methodological, and epidemiological issues and perspectives in the study of the sociological aspects of addictions are examined relative to the implications of sociological research for understanding, treating, and preventing problems of addiction.
(3 hours - Seminar).

450a. Sociology of Law. An analysis of the legal institutions and processes in contemporary society.
(3 hours - Seminar).

451b. French Canadian Society. An analysis of the structure and functioning of French Canadian society with emphasis on politics, religion, social structure and values.
(3 hours - Seminar).

452a. Political Sociology. An analysis of research and theory as related to the role of power and politics in contemporary society.
(3 hours - Seminar).

453a. Sociology of Occupations and Professions. An analysis of the development and structure of occupations and professions.
(3 hours - Seminar).

454b. Industrial Sociology. An inquiry into the development and structure of major industrial organizations, labour unions and management-labour relations.
(3 hours - Seminar).

456b. Sociology of Religion. An analysis of the interactions between religious belief systems and institutions and the major institutional areas of society.
(3 hours - Seminar).

457b. Sociology of Education. A comprehensive study of educational institutions in modern society.
(3 hours - Seminar).

461b. Communications. The study of patterns of mass culture, mass media and their relationship to social factors.
(3 hours - Seminar).

465b. Sociology of Corrections. A review of the theory and research concerning correctional institutions, penology, treatment of crime, and the correctional process.
(3 hours - Seminar).

***470b. Special Topics and Issues in Demography.** This course is designed to meet the interests of both faculty and students. While the specific topics or issues dealt with in any year will be determined by these interests, current developments in demography will be a main focus.
(3 hours - Seminar). *(Proposed 1973-74)

Note: All 500 level courses except 522, 599 are half courses (1/2 credit).

501. Sampling and Multivariate Analysis. Sampling methods and theory will be discussed and biases calculated. Modern developments in multivariate analysis in statistics will be studied and applied to data.
Prerequisite: Sociology 400 or equivalent

503. Methodology in Empirical Sociology. Selected problems in Research Methodology, Measurement and Scaling problems, Game Theory, Stochastic Processes and Cybernetics.

505. Sociological Theory. Selected problems in theory and theory construction.

522. Development Aspects in Industrializing Nations. (O) (Offered jointly with the Departments of Geography and Political Science). The social, economic, political, and spatial structure and inter-related development problems in selected countries or regions. Two-term full credit course.

524. Social Epidemiology. (O) (Offered jointly with the Department of Epidemiology and Preventive Medicine). An examination of social epidemiological methods, patterns of acute and chronic morbidity,

and the effects of social and psychological factors on health behaviour.

532. Techniques of Demographic Analysis (P). Procedures in the measurement of fertility, mortality, natural increase and migration. Evaluation of sources of demographic data including census and vital registration systems.

535. Community (O). A systematic analysis of the ecological and social dimensions of communal life in both folk and urban-metropolitan settings.

536. Social Organization (O). A study of contemporary theories of social organization and their applications to analyses of existing organizations.

537. Deviant Behaviour (O). A study of basic theories of deviant behaviour with emphasis on methods for determining the occurrence and distribution of norm violating behaviour and on social and psychological correlates of deviant behaviour.

538. Sociology of Crime and Delinquency (O). An examination of some basic approaches to the study of crime and delinquency in Canada and an analysis and critique of contemporary research in this area.

539. Social Movements and Revolutions (SP). An examination of conditions which produce social movements and revolutions, processes of development, leadership, and processes of affiliation and disaffiliation. Relevant sociological and social psychological theories will be examined.

540. Social Psychology (SP). An analysis of the contributions of culture and social interaction to the development of personality. Socialization, attitude change, and motivation will be emphasized.

541. Mathematical Social Psychology (SP). Mathematical models of small groups behaviour. Mathematical models will be applied to group structures as well as processes.

542. Communication (SP). An analysis of the nature, diffusion, and control of information within social systems and sub-systems.

543. Collective Behaviour (SP). Research problems and theories of collective expression of unrest, including outbursts, mass contagions, rumors, popular heroes and scapegoats, fads, and movements.

544. Theories of Social Psychology (SP). Critical analysis of the major current theories in social psychology.

545. Community Aspects of Mental Health (O). (Offered jointly with the Department of Epidemiology and Preventive Medicine) A study of the incidence and prevalence of mental disorders, their interrelationship with sociocultural factors and emotional disorders, and an evaluation of selected mental health programs and services.

546. Health Care Organization (O). (Offered jointly with the Department of Epidemiology and Preventive Medicine) An analysis of the distribution of health resources, with special consideration given to the effectiveness of health care delivery, public health policy, the health professions, and medical economics.

547. Social Stratification (O). An examination of the forms and functions of inequality and ranking systems in society. Consideration will be given to contemporary problems of social class and mobility.

548. Social Change (O). Examination of theories of sociocultural, economic, demographic and ecological change and their relevance to planning in developing nations.

***549. Social Change and Modernization in Latin America.** Critical analysis of socio-economic development in Latin America. Focussing on the determinants and consequences of social change and modernization.

*(Proposed 1973-74)

550. Race and Minorities Relations (O). An evaluation of relations among ethnic, racial and religious groups focussing on intergroup hostility and conflict and the role of these groups in the larger community. Prejudice and discrimination will be analyzed for their social psychological, political and economic causes and effects. Social and political movements to resolve intergroup conflicts will be examined.

551-560. Selected Social Institutions (O). The examination of selected social institutions in terms of the problems of stability and change in society. Specific institutional areas include law, military, education, religion, family, science, industry, and polity.

***561. Sociology of Marriage and the Family.** An analysis of the contemporary family in the context of other institutions, including reviews of theoretical frameworks and evaluations of empirical data, with special emphasis on problems of describing and predicting changes in family structure.
*(Proposed 1973-74)

570. Special Topics in Demography (P). Intensive study of specific issues in demographic analysis.

***571. Population Problems and Issues in Latin America.** Focussing attention on the rapid population growth in Latin America, its components, its social, political and economic implications and what is being done and could be done to alleviate the situation.
*(Proposed 1973-74)

580. Population and Economic Development (P). The interdependence between population characteristics, natural resources, and economic organization under varying conditions of natural development.

583. International Urbanization (P). Demographic, social and economic analysis of urban communities in developing nations. Comparisons are made with similar phenomena in the western world.

588. Computer Applications in Social Research (P). Electronic data processing and computer programming as relevant to social and demographic data and research.

591-595. Selected Topics in Sociology (O, P, SP). Individual reading courses arranged between professor and student.

599. MA Research Paper. Two-term, full-credit course.

SPANISH AND ITALIAN

UNIVERSITY COLLEGE, Room 309

Professors:

Flint, W., BA Harvard; MA, PhD North Carolina. Chairman of Department

Shervill, R. N., BA UWO; MA PhD North Carolina. Executive Assistant to the President

Smieja, F. L., BA National, Ireland; MA PhD London.

Associate Professors:

Asensio, J., PhD, STB Ordo de Mercede; Lic., Dr en Fil. y Letras, Madrid

Burghardt, W., BA, MA Toronto

Marti, A., ECI. Madrid; BSc Jochi, Tokyo; Lic., Dr en Fil. y Letras Barcelona

Assistant Professors:

Lopez Pacheco, J., Lic en Fil y Letras Madrid

Munn, B. W., MA Cantab, PhD British Columbia

Newman, J. C., BA McGill, MA Radcliffe, Dr en Fil y Letras Madrid

COURSES

543. Old Spanish. A critical examination of major literary works of the medieval period and a detailed study of medieval Spanish phonology and morphology.

***548. The Origins of Spanish American Literature.** An examination of the early texts, from the Popol Vuh to the Comentarios Reales of the Inca Garcilaso.

*Proposed 1973-74

550. Spanish Mystic Writers. An analysis of the literary works of representative Spanish mystic and ascetic writers in relation with the thought of other mystic authors.

552. Lope de Vega. A critical seminar dealing with the drama, poetry, prose and dramatic theory of Lope de Vega.

553. Calderon de la Barca and his Contemporaries. A critical analysis of selected plays of Calderon and his dramatic school.

554. Cervantes. An analysis of Cervantes's works, with special emphasis on Don Quixote.

555. Tirso de Molina. A critical analysis of his principal plays and selected prose.

556. Golden Age Poetry. A study of selected poets of the 16th and 17th centuries.

557. The Picaresque Novel. A survey of the major works of the genre.

560. Galdos and the Nineteenth-Century Novel. A study of literary and social trends of the last half of the nineteenth century.

570. The Generation of 1898. A study of the "Spirit of 1898" with special emphasis on the novel and essay. Unamuno, Baroja, Azorin and Valle Inclan will be studied.

572. Spanish Drama of the Nineteenth and Twentieth Centuries. A study of dramatic trends in one or both centuries.

575. Aspects of Modern Spanish American Prose. Study of a selected trend in twentieth century Spanish American fiction. Analysis of significant works.

576. Aspects of Modern Spanish American Poetry. Study of a selected trend in modern Spanish American poetry.

580. Modern Spanish Poetry. Study of a selected trend in twentieth century Spanish poetry.

582. Modern Spanish Novel. A study of tradition and innovation in the Spanish novel from Baroja to the present time.

590. MA Thesis Direction.

591. Bibliography. Six class meetings devoted to a practical introduction to Hispanic bibliography. A non-credit course required of all first year graduate students registered in the Department.

The Department does not offer all the courses listed above in any one academic year. Each spring a list is issued indicating which of the courses will be offered for the following year.

SURGERY

UNIVERSITY HOSPITAL, Room 80F12

Professors:

Carroll, S. E., BA MD UWO

Duff, J. H., MD, FRCSC

McLachlin, A. D., MD, MSc UWO; MS Toronto; DPhil Oxon. Head of Department

Associate Professor:

McCredie, J. A., MB MCh Belfast

Clinical Professors:
Coles, J. C. G., BA, MD, MSc UWO
Johnston, D. W. B., BA MD UWO
Kennedy, J. C., MD UWO
McAninch, L. N., MD UWO
McFarlane, R. M., MD, MSc UWO

Graduates in Medicine who have served a year of rotating or straight surgical internship in an approved hospital may apply for further training in Surgery in a plan utilizing the facilities of Victoria, St. Joseph's, University and Westminster Hospital.

This training meets the requirement for Fellowship in the Royal College of Surgeons of Canada and candidates beginning the course are expected to proceed to this degree.

Research may be carried out during the period in training in general surgery or one of the surgical specialties and may lead to qualification for the degree of Master of Clinical Science (MC1Sc).

THERAPEUTIC RADIOLOGY

VICTORIA HOSPITAL, Room 109

Clinical Professor:
Watson, T. A., MB, ChB New Zealand; MD Saskatchewan. Head of Department
Associate Professors:
Haegy, F. C., MD, MSc, PhD UWO
Inch, W. R., BSc Queen's; PhD UWO
MacDonald, J. C. F., BA, MA British Columbia; PhD Toronto
Clinical Associate Professor:
Thomson, D. H., MB, ChB Glasgow
Clinical Assistant Professors:
Bannerjee, P., MB Calcutta
Fetterly, J. C. M., MD, CM Queen's
Honorary Lecturer:
McCredie, J. A., MB, MCh Belfast

The Department of Therapeutic Radiology is located in the London Clinic of the Ontario Cancer Treatment and Research Foundation, Victoria Hospital. Facilities are available for radiation therapy, nuclear medicine, radiation physics, radiobiology and chemotherapy of malignant disease. A close association with other clinical departments is maintained by joint consultative clinics. The department offers graduates in medicine who have served one year of rotating internship a full course of training leading to Fellowship or Certification by the Royal College of Physicians and Surgeons of Canada. Clinical or basic research may be carried out and submitted as partial fulfilment for the degree Master of Clinical Science. With the approval of the College this may be used to satisfy the requirement for training in basic science.

GRADUATE

Graduates in medicine or the basic sciences may carry on research in the Division of Nuclear Medicine, Radiation Physics or Radiobiology which may be used in partial fulfilment for the degrees. Master of Science or Doctor of Philosophy. These degrees are granted in the basic department in which the supervisor of the student holds a joint appointment, at present Biochemistry, Biophysics or Physics. Research interests in the Department currently include, factors influencing the sensitivity of solid tumours to ionizing radiation, the role of the cancer cell membrane in the development of distant metastases, dosimetry of high energy radiation sources and the application of new isotopes to clinical diagnosis.

A suitable stipend during the period of residency or graduate training may be obtained through the Ontario Cancer Treatment and Research Foundation.

COURSES

510a. Principles of Radiobiology.

511b. Selected Topics in Nuclear Medicine.
(Prerequisite: residency training in Therapeutic or Diagnostic Radiology, admission to such a training program or equivalent.)

512. Applied Radiotherapy.
(Prerequisite—MD degree)

514. Tutorial — Current Topics in Radiotherapy.
(Prerequisite: residency training in Therapeutic or Diagnostic Radiology, admission to such a training program or equivalent.)

590. Master of Clinical Science Thesis.

610. Physics of Radiology.
(Prerequisite: Physics 20 or equivalent)

Courses are full term unless followed by (a) denoting first term or (b) denoting second term..

All courses will not necessarily be offered in any one year.

Further information on residency, graduate training and courses may be obtained from the Head of the Department.

ZOOLOGY

BIOLOGICAL AND GEOLOGICAL SCIENCES BUILDING, Room 344

Professors:
Battle, Helen I., BA, MA UWO; PhD Toronto (Emeritus)
Bourns, T. K. R., BA, MA British Columbia; PhD Rutgers
Judd, W. W., BA McMaster; MA UWO; PhD Toronto
Keenleyside, M. H. A., BA, MA British Columbia; PhD Groningen
Locke, M., MA, PhD Cantab (Department Chairman)
Scott, D. M., BSc, PhD McGill

Associate Professors:
George, J. A., BSA Saskatchewan; MSA Toronto; PhD UWO
MacInnes, C. D., BSc Bishop's; MS, PhD Cornell
McMillan, D. B., BSc, MSc UWO; PhD Toronto
Misra, R. K., MSc, PhD Nagpur; PhD Edinburgh
Ogilvie, D. M., BSc, New Brunswick; PhD UWO
Purko, J., BA, MSc, PhD UWO
Steele, J. E., BSc Dalhousie; MSc UWO; PhD Saskatchewan

Assistant Professors:
Atkinson, B. G., BA, Ohio; PhD Connecticut
Eggleston, A. C., BA Washington; PhD California
Holsworth, W. N., BSc, MSc British Columbia; PhD Western Australia
Kidder, G. M., BA Hiram College; PhD Yale
Owen, M. D., BSc Wales; PhD Monash
Planck, R. J., BS, PhD California
Roth, R. R., MSc Cluj; PhD Alberta
Shivers, R. R., AB, MA PhD Kansas
Tam, W. H., BSc, PhD Hong Kong
Wiebe, J. P., BSc, PhD British Columbia
Lecturers:
Bignell, D. E., BSc, PhD Nottingham
Caveney, S., BSc Witwatersrand; DPhil Oxford
Millar, J. S., BSc, MSc British Columbia; PhD Alberta
Mullins, D. E., BA, MSc Colorado State; PhD Virginia Polytechnic
Moulton, Marjorie Eleanor, BSc, MSc UWO
Honorary Professors:
Stinson, R. H., BA McMaster; PhD Toronto

RESEARCH INTERESTS AND FACILITIES OF THE DEPARTMENT

The department has faculty with active research programs in: -

Cell and Developmental Biology (Cell Biology, Biochemistry of development: organelle development, embryogenesis, growth and differentiation. Histology, electron microscopy and ultrastructure. Insect development. Cell communication).

Comparative Physiology, Neurobiology and Ethology (Reproductive Biology and Endocrinology, Physiology of adaptation. Fish and bird behaviour. Physiology of rhythms. Sensory physiology and the physiology of venoms. Insect Physiology).

Applied Biology (Population biology, genetics and dynamics. Insect control, Physiological ecology, Parasitology and Entomology).

The facilities include a photoperiod laboratory, a summer field station at Eskimo Point, Northwest Territories, and marine biology facilities at the Huntsman Marine Laboratory, St. Andrews, New Brunswick.

The Research laboratories are equipped for cell fractionation, ultracentrifugation, tissue culture and electron microscopy: electrophysiology: gas chromatography, atomic absorption spectrophotometry, gas analysis, chromatography and electrophoresis: gamma irradiation: computing: there is a hot lab for tracer studies with scintillation counting and autoradiography.

REQUIREMENTS FOR ADMISSION

The Department offers programs leading to the degree of MSc or PhD. For admission as MSc candidates, students should have or expect to receive an Honors degree or the equivalent. For admission to the PhD program a student should have an MSc or high standing in an Honors BSc degree.

Details may be obtained on application to the Chairman of the Department.

COURSES

All students should consult the instructor in charge of the course before registering. The courses are open to undergraduates who have the appropriate background with the instructors permission.

522b. Advanced Histology. Comparative aspects of the structure and development of vertebrate organ systems at the microscopic level. Spring term. / *D. B. McMillan.*

526a. Advanced Insect Physiology. The principles of insect physiology. Aspects of metabolism, biochemistry, pharmacology. Fall term. / E. J. Bond, B. E. Brown, W. Chefurka, E. H. Colhoun, J. A. George, M. Locke, M. D. Owen, J. E. Steele.

527a. Neurophysiology. Aspects of vertebrate and invertebrate neurobiology and sensory physiology. Fall term. / A. Eggleston, M. D. Owen.

528a. Endocrinology. Comparative aspects of hormonal integration. Mechanism of hormone action. Fall term. / J. Wiebe, J. E. Steele.

532b. Immunity to Parasites. Natural and acquired resistance to animal parasites, medical and veterinary implications, serological and immunological methods, in vitro culture. Spring term. / T. K. R. Bourns.

534a. Advanced Population Biology. Diversity and stability, developed from the dynamics of single and multiple species systems. Life history strategies. Colonization. r and K selection. Fall term. / C. D. MacInnes.

535b. Physiological Ecology. Mechanisms of adaptation to different environments. Environmental control of physiological processes. Rhythmic phenomena. Spring term. / R. J. Planck.

536b. Advanced Behaviour. Animal social systems. Communication. Bioperiodism. Cybernetic systems. Spring term. / M. H. A. Keenleyside, R. J. Planck, A. Eggleston.

538a. Advanced Development Biology. Mechanisms and role of cell communication and interaction during development. Fall term. / G. Kidder, J. Purko.

540a. Developmental Genetics. Molecular biology of development. Regulation of genomic function. Replication and translation of information during development. Stability of clones. Somatic cell genetics. Fall term.
Not given in 1973-74

541b. Evolution. Concepts of species. Polymorphism, selection and gene flow. Theories of speciation. Fitness-set analysis. Spring term.
Not given in 1973-74

542a. Cell Biology. Molecules to biological structures. Ultrastructure and life history of cells and organelles. Cell and tissue specialization. Transport. Transporting epithelia. Contractility and motility. Fall term. / M. Locke, R. R. Shivers

543b. Advanced Cell Biology. Cell function. Metabolic function of subcellular organelles. Comparative Biochemistry. Spring term.
Not given in 1973-74

544b. Advanced Biometry. Advanced statistical methods. Spring term. / R. K. Misra.

546b. Population Genetics. A lecture course dealing with large and small random and non-random populations, linkage, path analysis, inbreeding, generation matrix, mutation selection, subdivision and migration, inheritance of quantitative characters, and the implication of these considerations upon the process of evolution. Spring term. / R. K. Misra.
Not given in 1973-74

553b. Political Biology. The biological consequences of human activities for the biotic world and particularly man and his institutions. Direct physical and chemical effects upon metabolism, development, adaptation,

genes, and population structure. Indirect effects through climatic change, population density, social conditions and changed patterns of survival. Predictions and mechanisms for influencing the future. Spring term. / M. Locke, Staff.

554a. Advanced Techniques. A practical course in advanced techniques including histology, cell fractionation, photomicrography and the preparation of illustrations. Fall term. / D. B. McMillan, M. Locke, R. R. Shivers.

555b. Advanced Microscopy. Phase, ultraviolet, interference, polarizing, fluorescence and Nomarski microscopy. Electron microscopy, interpretation and presentation of data. Spring term. / D. B. McMillan, M. Locke, R. R. Shivers.

560a, 561b. Current Topics in Experimental Biology. Seminar course. Fall and spring terms. / Staff.

562a, 563b. Insect Physiology. Seminar course on current topics in insect physiology. Fall and spring terms. / Staff.

564a, 565b. Cell Biology. Seminar course on current topics in cell biology. Fall and spring terms. / Staff.

566a, 567b. Ecology. Seminar course on current topics in ecology. Fall and spring terms. / Staff.

School of Library and Information Science



Dean
W. J. Cameron, BA, MA Victoria, N.Z.; PhD, Reading
Assistant Dean
Elaine Svenonius, AB Barnard; MA, Pennsylvania, MA, PhD Chicago
Assistant to the Dean
Carmen L. Sprovieri, BA, MA, Gonzaga; BLS, British Columbia; MLS, UWO
Administrative Officer
Betty McCamus, BA, *Toronto*; MLS, UWO
Librarian
To be appointed
Assistant Librarian
Joan Gentleman, BA, MLS, UWO
Office Locations
Dean Room 101A; phone 3545
Assistant Dean Room 102; phone 3545
Assistant to the Dean Room 100A; phone 3542
Administrative Officer Room 100B; phone 3542
Assistant Librarian Room 136B; phone 3542

School of Library and Information Science

HISTORY OF THE SCHOOL OF LIBRARY AND INFORMATION SCIENCE

The School of Library and Information Science began studies in September 1967. In October 1968 the School was visited for accreditation purposes by a Committee of the American Library Association. The Committee on Accreditation of the American Library Association, which is the accrediting agency for both Canada and the United States, accepted in January 1969 the visiting Committee's report and accredited the School's MLS program.

ADMISSION

The School operates on a trimester system and students may be accepted in September, January or May. Candidates for admission into the Master of Library Science program must have, from a recognized University, an honors Bachelor's degree or equivalent with at least a B standing over the last 10 courses.

Candidates who have a three-year or four-year general Bachelor's degree may raise their degree to the equivalent of an honors degree by undertaking a year (two terms) of undergraduate studies as a Special Student. (Application forms for this category may be obtained from the Office of the Registrar).

Candidates who wish to transfer at the end of one year from other accredited graduate library schools with a two-year MLS or who hold its equivalent may complete their MLS after two terms.

Proficiency in English is required of non-English speaking students who are required to show evidence of proficiency by satisfactory achievement in the University of Cambridge Certificate of Proficiency in English, or the Test of English as a Foreign Language administered by the US Educational Testing Service.

REGISTRATION PROCEDURE

Application forms may be obtained from the School of Library and Information Science. They should be returned for initial processing to the School, along with the required transcripts and letters of recommendation. From the Office of the Registrar students will receive Permits to Register and a registration package that will give details as to the last date of registration, fees to be paid etc.

Course selection will take place at the School and all course enrolment cards must be signed by the Dean or designate.

If an applicant is not approved for admission to the Faculty of Graduate Studies, he will receive notification from the School of Library and Information Science.

PERIOD OF STUDY

Dependent upon the conditions laid down upon admission to the Faculty of Graduate Studies, a student may complete his studies for the MLS in two or three consecutive terms. It is possible to earn the MLS in summer terms or in summer sessions plus a final term. The program may also be taken part time.

LANGUAGE REQUIREMENTS

Because of the importance of languages in the field of Library and Information Science, a reading knowledge of at least one language other than English is expected. The second language must be useful in study and research in the School's field of knowledge.

COURSE REQUIREMENTS

Required courses are: 501 or 502, 511, 512, 513, 521, 523, 551, 552, 553, and 580. Other courses may be required in a particular program by decision of the School's Council.

For two-term students, 552, 553, and 580 are required, and others may be required in individual cases.

Every elective is not necessarily offered in any one term.

For more information, refer to the Calendar of the School of Library and Information Science.

School of Library and Information Science, The University of Western Ontario, London N6A 3K7

Library Science

PROFESSORS EMERITI: Colvin, Reitman PROFESSORS: Cameron, Hotimsky, Lee, Prodrick, White ASSOCIATE PROFESSORS: DeHart, Dolan, Fyfe, Jamieson, Neill, Pendrill, Sudar ASSISTANT PROFESSORS: Hansen, Hudgins, Schulte-Albert, Strathern, Svenonius LECTURERS: Janes, McCamus, Rayward, Schutte, Sprovieri

Courses

501. Old World Intellectual and Cultural Foundations.
Seminar, Half Course.

502. New World Intellectual and Cultural Foundations.
Seminar, Half Course.

503. Bookcollecting and Librarianship.
Seminar, Half Course.

504. Intellectual and Cultural Foundations of Classification.
Seminar, Half Course.

505. Bibliography and Librarianship.
Seminar, Half Course.

507. Systems Analysis and Libraries.
Seminar, Half Course.

508. Guided Reading.
Seminar, Half Course.

509. Education for Librarianship.
Seminar, Half Course.

511. Professional Theory and Methodology: Humanities.
Seminar and Lab, Half Course.

512. Professional Theory and Methodology: Social Sciences.
Seminar and Lab, Half Course.

513. Professional Theory and Methodology: Science and Technology.
Seminar and Lab, Half Course.

514. Special Topics in the Humanities.
Seminar, Half Course.

515. Special Topics in the Social Sciences.
Seminar, Half Course.

516. Special Topics in Science and Technology.
Seminar, Half Course.

517. Information in Languages other than English.
Seminar, Half Course.

519. Problems in the Organization of Information.
Seminar, Half Course.

521. Administrative Theory and Practice: General Principles.
Seminar, Half Course.

522. Administrative Theory and Practice: Library Planning.
Seminar, Half Course.

523. Administrative Theory and Practice: Library Administration.
Seminar, Half Course.

524. Administrative Theory and Practice: School Libraries.
Seminar, Half Course.

525. Administrative Theory and Practice: Services to Children and Young Adults.
Seminar, Half Course.

527. Administrative Theory and Practice: Community Services, Local, Regional, National.
Seminar, Half Course.

528. Administrative Theory and Practice: Higher Education.
Seminar, Half Course.

529. Administrative Theory and Practice: Special Libraries.
Seminar, Half Course.

530. Research Principles and Practice in Library and Information Science.
Seminar, Half Course.

531. Research Principles and Practice in the Humanities.
Seminar, Half Course.

532. Special Research Topics in the Humanities.
Seminar, Half Course.

534. Research Principles and Practice in the Social Sciences.
Seminar, Half Course.

536. Special Research Seminar.
Seminar, Half Course.

537. Research Principles and Practice in Science and Technology.
Seminar, Half Course.

538. Guided Research I.
Seminar, Half Course.

539. Guided Research II.
Seminar, Half Course.

540. Special Topics in Librarianship.
Seminar, Half Course.

541. Comparative Librarianship.
Seminar, Half Course.

542. Periodical Literature.
Seminar, Half Course.

543. Historical Development of Children's Literature.
Seminar, Half Course.

544. Canadiana.
Seminar, Half Course.

545. Slavic Libraries and Librarianship.
Seminar, Half Course.

547. History of Science.
Seminar, Half Course.

551. Systems of Language and Systems for Communication.
Seminar, Half Course.

552. Introduction to Information Science.
Seminar, Half Course.

553. Problems in the Computer Control of Information.
Seminar, Half Course.

556. Introduction to Information, Communication, and Coding Theory.
Seminar, Half Course.

557. Mathematical Models in Library and Information Science.
Seminar, Half Course.

558. Special Topics in the Computer Control of Information.
Seminar, Half Course.

559. Audiovisual Theory and Practice.
Lab and Seminar, Half Course.

561. Art Libraries and Information.
Seminar, Half Course.

562. Business Libraries and Information.
Seminar, Half Course.

566. Law Libraries and Information.
Seminar, Half Course.

567. Medical Libraries and Information.
Seminar, Half Course.

569. Music Libraries and Information.
Seminar, Half Course.

571. Archives Theory and Practice.
Seminar, Half Course.

580. Master's Seminar.
Seminar, Half Course.

The University Library System

The University of Western Ontario Library System consists of a general library, housed in The D. B. Weldon Library, and seven Divisional/Professional libraries. Over two million items of monographic, periodical, various kinds of microform, and other library materials, make up the collection which is available to all members of the university community.

THE D. B. WELDON LIBRARY - Opened in June, 1972, The D. B. Weldon Library houses the general collections which were in the Lawson Memorial Building and the College Reading Rooms. With 2,119 seats located on six levels, the new building accommodates twice the number of users as the former library and the Reading Rooms, and makes possible improved service to users. Entrances are located at the end of the tunnel from Somerville House and on the North face of the building, opposite the University Community Centre.

The Ground Level of the building holds the periodicals collection—both bound and current. The General Library subscribes at present to approximately 2,800 newspapers and periodicals, with 11,000 titles received in the University Library System as a whole. Bound periodicals are arranged by Library of Congress classification number and are located in Room B of the Ground Level. Newspapers and current, unbound, periodicals are arranged alphabetically by title and are shelved in Room A along with the Periodicals Catalogue, and the periodical index services. Assistance for users is provided at an Information Desk in this room.

On the First Floor the Reference, Interlibrary Loan, and Circulation Departments, and the Spencer Room for the Heavy Demand Collection are located. The public catalogue and national bibliographies, such as those of the British Museum, the Library of Congress, and the Bibliotheque Nationale, together with publishing trade bibliographies, are also located on this floor. Assistance in using the Author/Title and Subject card catalogues, and the national bibliographies, is offered at the Catalogue Assistance Desk facing the Catalogue.

On the Mezzanine overlooking the first floor are located the administrative offices for the Library System and the Order/Receiving Unit of the Processing Division.

The Second Floor is devoted to Special Collections. These include Rare Books, Regional History and County Records, Art exhibition catalogues, and Government Publications. Microforms and microform readers are also located on this floor. It should be noted that Government Publications holdings are not listed in the main Card Catalogue. Access to the holdings is through computer printouts in the Government Publications section.

Floors 3, 4 and 5 hold the general collection for Arts and Social Sciences which is arranged by the Library of Congress classification system:

Third Floor: A-D—General Works, Philosophy, Psychology, Religion and History.

Fourth Floor: E-N—History, Geography, Anthropology, Physical Education, Economics, Sociology, Political Science and Art.

Fifth Floor: P-Z—Languages and Literature, Agriculture, Technology, Military and Naval Sciences, and Bibliography and Library Science. Much of this latter class ("Z") is in the Reference Collection on the First Floor.

The bookstacks are open to all library users—undergraduate and graduate students, faculty and staff. Materials which circulate may only be charged out by individuals holding a University identification card (student, faculty, or staff). For further details, the Lending Code for the General Library is available at the circulation desk on the First Floor.

Coin-operated photocopiers for public use are located on all floors. There is also an over-the-counter service where extensive copying service is provided by Library staff. Copies can be made from all types of microforms at this service point—microfilm, microfiche, microprint and microcard—as well as from print materials.

An Information Desk providing general directional information is located at the First Floor entrance. Reference librarians located on the First Floor, and subject and form specialists servicing the collections on each floor, are sources of more specialized assistance. Look for the four-colour Libraries badge when you need assistance, or head for the nearest orange desk with the question mark on it.

Divisional/Professional Libraries

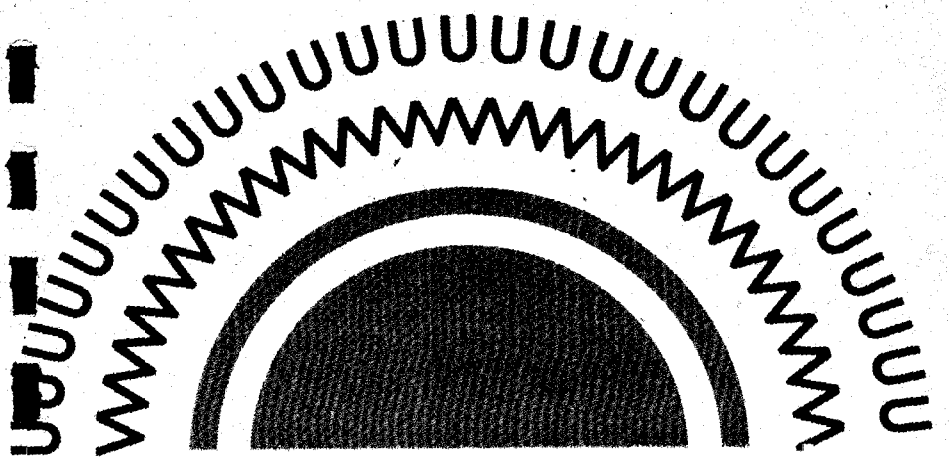
In addition to The D. B. Weldon Library, there are seven libraries in the University Library System which offer specialized materials and reference service to students and faculty working in particular subject fields. Each has its own card catalogue. Their holdings are also listed in the main catalogue, with the exception of the Health Sciences Centre Library, for which there is a separate card catalogue beside the main catalogue, and the Law Library.

A list of these Divisional/Professional Libraries, with their locations, follows:

1) **BUSINESS LIBRARY,** Richard Ivey School of Business Administration, Room 129.
2) **EDUCATION LIBRARY,** Althouse College of Education, Room 303.
3) **ENGINEERING LIBRARY,** Alexander Charles Spencer Faculty of Engineering Science Building, Room 1001.
4) **HEALTH SCIENCES CENTRE LIBRARY,** Medical Sciences Building, Room 139.
5) **LAW LIBRARY,** Josephine Spencer Niblett Faculty of Law Building, 2nd floor.
6) **MUSIC LIBRARY,** Talbot College, Room 234.
7) **NATURAL SCIENCES LIBRARY,** Natural Sciences Centre, Room 106.

Libraries in the affiliated colleges are located in Brescia College, Huron College and King's College. The School of Library and Information Science has its own library.

Althouse College
of Education



ADMINISTRATIVE STAFF

DEAN OF THE COLLEGE:
Stabler, E., BA Queen's; MA McGill; EdD Harvard
ASSISTANT TO THE DEAN:
Casaubon, T. J., BA Laval (Study Leave 1972-73)
ACTING ASSISTANT TO THE DEAN:
Beatty, H. W., BPHE Toronto
ACTING ASSOCIATE REGISTRAR:
Hartsell, G. L., BA UWO
ASSISTANT REGISTRARS:
Chapman, C. G., BA McMaster
Galpin, D. E., BA UWO
PRACTICE TEACHING:
DIRECTOR:
Bass, R. W., BA Western
ASSISTANT DIRECTOR:
Stevenson, N. H., BA, MEd Toronto
LIBRARIAN OF THE COLLEGE:
Holman, Anna L. (Mrs.), BA Carleton, BLS McGill
CO-ORDINATOR OF GRADUATE STUDIES:
Nicholson, N. J., BA, MSc, PhD
NURSES:
Ryckman, Elizabeth E. (Mrs.), Reg. N.
DIRECTOR OF TEACHING AIDS CENTRE:
Heddington, C. M.
DIRECTOR OF COMPUTER SERVICES CENTRE:
Lott, A. E.

Althouse College of Education

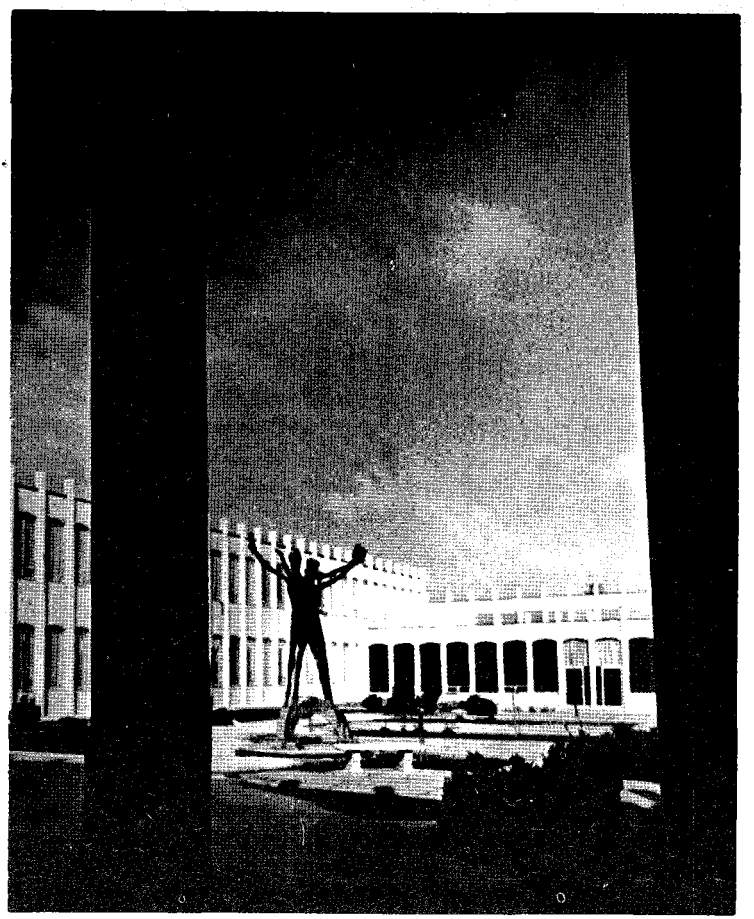
1137 Western Rd., London N6G 1G9 Phone 679-3182

ALTHOUSE COLLEGE OF EDUCATION

Althouse College of Education of The University of Western Ontario, London, was first opened in September, 1965. The college is located on the University Campus at 1137 Western Road. It is equipped to allow for the implementation of new concepts in teacher training. The basis of the program offered in the college is a lecture-seminar-tutorial method placing emphasis on small-group instruction.

The college facilities provide special instructional areas in keeping with new developments in secondary and elementary school education including a language laboratory, a computer services centre, a business machines laboratory, a teaching aids centre, three modern science laboratories, four technical shops, an occupational training area, a steno-training laboratory, gymnasium facilities, educational media laboratory, provision for instruction by close-circuit television, a professional library, audio visual resource area, and reading room.

In order that each part of the program in education theory will be a challenging and a useful experience, the courses are offered at different levels which take into account the differences in academic specialization of the students.



ALTHOUSE

The college is an integral part of The University of Western Ontario and offers a one-year program of post-graduate teacher education leading to a Diploma in Education granted by the Senate, The University of Western Ontario and to certification to teach in the secondary and elementary schools of Ontario.

Students in the College are full students of The University of Western Ontario and have all the rights and responsibilities that this implies.

Communications regarding admission to the Althouse College of Education should be addressed to:

The Acting Associate Registrar
Althouse College of Education
The University of Western Ontario
1137 Western Road
London, Ontario
N6G 1G9

MEMBERS OF THE FACULTY OF ALTHOUSE COLLEGE OF EDUCATION

ART

Associate Professor Logan, A. D., BFA, AOCA, OIP Toronto

BUSINESS AND COMMERCE

Associate Professor And Head Of The Department Kaluza, H. J., BA McMaster
Assistant Professors Bailey, R. H., BA Toronto Westgate, D. G., BA Western

CLASSICAL STUDIES

Professor Lambert, G. R., BA, MA Toronto

COMPUTER STUDIES

Associate Professor Walsh, J. E., BA Western; BEd Toronto

EDUCATIONAL MEDIA

Associate Professor and Head of the Department McKeon, P. J. BA Western
Assistant Professor Crisp, E. V., BSc Sir George Williams

ELEMENTARY TEACHING

Professor and Head of the Department Kenney, K. W., BA Western; MEd Toronto
Professor Hardy, Madeline, BSc Columbia; MEd, EdD Toronto Assistant Professors Park, P. B., BA Western Sorrill, P. W., BA Western; MEd Toronto

ENGLISH

Professor and Head of the Department Smallbridge, J. E., BA, MA Toronto
Professor Dow, Marguerite R., BA, BEd, MA Toronto Associate Professors Linden, P. J., BA, MA Western Procunier, E. R., BA Western; MA Queen's Assistant Professor Gutteridge, D. G., BA Western

GEOGRAPHY

Professor and Head of the Department Langman, R. C., BA, MA Toronto Associate Professor Inch, R. S., BA Mt. Allison

GUIDANCE

Associate Professor Schmidt, P. K., BA Western; BEd, MEd Toronto Hallberg, E. T., BA Idaho; MA DEd Arizona State Hassard, J. H., BA Western; MEd Ottawa Sessional Lecturers Clute, F. J., BA Western Young, R. A., BA Loyola; BEd Montreal; MEd McGill

HISTORY

Professor and Head of the Department Milburn, G., BA Durham; BEd Toronto; MA Durham Associate Professor Gray, D. M., BA, MA Queen's Assistant Professor Clark, R. J., BA McMaster; MA Western

HISTORY OF EDUCATION

Associate Professor and Head of the Department. Hamilton, W. B., BA, BEd, MA Acadia; PhD Western Associate Professor Purdy, J. D., MA New Brunswick; PhD Toronto Assistant Professors Gidney, R. D., BA McMaster; BEd Toronto; MA McMaster; MPhil London Lawr, D. A., BA, MA Western; PhD Toronto Radcliffe, D. J., BA Cambridge; MA, PhD Wisconsin Ray, D. W., BA, MEd Alberta; PhD London Simpson, D. G., BA, MA, PhD Western - Associate Professor (On Extended Leave) Stevenson, H. A., BA, DipEd, MA Western

HOME ECONOMICS

Associate Professor Porterfield, Grace, BHSc Guelph

MATHEMATICS

Professor and Head of the Department Harris, A. W., BA Western Professors Campbell, D. R., BA Western Lawson, G. B., BA Queen's; BEd Toronto

MODERN LANGUAGES

Professor and Head of the Department Kieser, W. E., BA Leeds and London Professors Boyd, J. A., BA Toronto Baldwin, Margaret M., BA, MA Western

MUSIC

Associate Professor White, J. H., BA, MusG.Paed Western; MM Eastman; ARCT Toronto

PHILOSOPHY

Associate Professor and Head of the Department Howard, V. A., BA Maine; PhD Indiana (Leave of Absence 1972-73) ASSOCIATE PROFESSOR AND ACTING HEAD OF THE DEPARTMENT (1972-73) Burke, D. R., BA, MA New Mexico, Albuquerque; PhD Michigan State Assistant Professors Houston, Barbara E., BA, MA Western Koutsouvilis, A. P., BA, MA, PhD London O'Leary, P. T., AB Boston; MA Toronto Lecturer McPeck, J. E., BA, MA Western

PHYSICAL AND HEALTH EDUCATION

Professor and Head of the Department West, N. W., BA, BEd, BPHE Toronto, MRSH Associate Professor and Head of Women's Physical Education Department Wigston, Frances A., BA Western Associate Professor Paterson, W., BPHE Toronto Assistant Professor Bliss, Iris, BSc, BEd New Brunswick (On Loan to London School Board 1972-73) Lecturer Zimmer, Isobel (Mrs.), BA Toronto; BPE McMaster

PROFESSIONAL PRACTICE AND ADMINISTRATION

Professor Allison, G. F., BA Queen's; MA, MEd Toronto Assistant Professors Hay, G. C., BA, BEd, MEd Toronto McLeish, E. A., BA Western; MEd Toronto Menear, D. W., BA, BEd Toronto; MEd Alberta, FCCT

PSYCHOLOGY

Professor and Head of the Department McMurray, J. G., BA, MA Western; PhD Toronto Professors Harper, F. B., MA Glasgow; PhD California Slemon, A. G., BA Manitoba; MA Western; PhD Toronto Associate Professor Saunders, J. T., AB Harvard; MA, PhD Ohio State Assistant Professors Anderson, Nadine R., BA, PhD Washington Bergering, A. J., BA, MA Western Lecturers Andresino, M. J., AB Canisius College; MA Columbia Teachers' College; MA Ohio State Crealock, Carol (Mrs.), MA UWO

SCHOOL LIBRARIANSHIP

Associate Professor and Head of the Department Gordon, Elsie R. M., BA Western; BLSc Columbia

SCIENCE

Professor and Head of the Department Wright, J. S., BA Toronto (Sabbatical Leave 1972-73) PROFESSOR AND ACTING HEAD OF THE DEPARTMENT (1972-73) Webber, H. D., BSc, MSc Western Assistant Professors Cunningham, D. N., BA Queen's; MSc Cornell Ogletree, J. F., BSc Western Lecturer Konrad, W. W., BSA Toronto

VOCATIONAL EDUCATION

Professor and Head of the Department Beatty, H. W., BPHE Toronto Assistant Professors Hall, E. J. (Leave of Absence 1972-74) Harland, R. Hey, M. Moro, R. E. Lecturer Rowe, J. S.

MINIMUM REQUIREMENTS

INTERIM HIGH SCHOOL ASSISTANT'S CERTIFICATE COURSE, TYPE B

(a) An acceptable university degree containing at least five undergraduate courses (B average) to support the first teaching option and two undergraduate courses to support the second teaching option.

(b) Canadian Citizenship or Landed Immigrant Status

(c) Twenty years of age as of October 1, 1973

MINIMUM REQUIREMENTS

INTERIM HIGH SCHOOL ASSISTANT'S CERTIFICATE COURSE, TYPE A

(a) An acceptable honors degree with an average of 66% or B standing whichever is the higher in a program that meets the requirements as set forth by the Ministry of Education. Specifics with respect to particular subjects are available from Mr. G. L. Hartsell, Acting Associate Registrar, Althouse College of Education.

(b) Canadian Citizenship or Landed Immigrant Status

(c) Twenty years of age as of October 1, 1973

SPECIFIC REQUIREMENTS

(a) No undergraduate courses are required to elect School Librarianship and Theatre Arts options.

(b) To elect the Elementary Education option one should have at least five courses in the Social Sciences or five courses directly related to a specific area of the elementary school curriculum.

(c) Physical Education courses or related courses should have been taken to support this option, however, a candidate may be permitted to enroll in this option as either his first or second option choice without previous undergraduate courses.

(d) To elect the Guidance option one must have at least five courses in the Social Sciences (B average) of which three must be Psychology, and successfully pass a personal interview with a member of the Guidance Department.

(e) Notwithstanding the necessity to elect two options, a candidate may elect Business & Commerce as his option and have a double timetable in that field.

(f) Students choosing one or more curriculum and instruction options from among the offerings of the Science Department, must consult the Althouse calendar very carefully concerning restrictions placed on the choice of these options.

CERTIFICATION

GENERAL INFORMATION CONCERNING CERTIFICATES VALID IN SECONDARY SCHOOLS IN ONTARIO

NOTE: Any information with respect to certification in Ontario set forth in this calendar is subject to alteration by the Ministry of Education that may supersede any regulation described below.

FOR ACADEMIC AND GENERAL SUBJECTS

(a) The basic Certificate is the Interim High School Assistant's Certificate Type B. This certificate may be obtained by completing the professional course of training at a College of Education during the regular winter session.

This certificate qualifies the holder for five years as an assistant teacher. It may become a Permanent High School Assistant's Certificate upon the completion of two years successful teaching experience in a Secondary School in Ontario.

(b) Endorsement of the High School Assistant's Certificate Type B is possible under the following conditions:

A candidate who has obtained second class standing or better in approved university courses to a total of 15 credits in one secondary school academic subject, or 24 credits (12 credits each) in two acceptable academic subjects, and who completes a year of successful teaching certified by the School Board concerned subsequent to the date of his Type B certificate in such subject(s), is eligible for endorsement of his Type B Certificate. A candidate must apply to the Registrar's Office, Althouse College of Education for approval of his credits and subsequently to the Registrar, Ministry of Education.

(c) The higher Certificate is the Interim High School Assistant's Certificate Type A. This certificate may be obtained by completing the professional course of training for his certificate at a College of Education either through

(i) the regular winter session at the colleges or

(ii) the regular winter session leading to the Interim Type B

Certificate plus attendance in an additional summer course (6 weeks) in a Type A Seminar after having met the academic qualifications as set forth by the Ministry of Education.

CERTIFICATES VALID IN ELEMENTARY SCHOOLS IN ONTARIO

For candidates who hold a degree of Bachelor of Arts or the equivalent from an Ontario University or equivalent degree from another province or country the basic certificate is the Interim Elementary School Teachers' Certificate Standard Four.

This certificate qualifies the holder to teach in an elementary school in Ontario for five years. It may become a Permanent Elementary School Teachers' Certificate during this period upon the completion of two years successful teaching in the elementary schools of Ontario.

These certificates qualify the holder for five years as an assistant teacher. The Type A may become a High School Specialist's Certificate (which is a permanent certificate and qualifies the holder to become the Head of a Department in a Secondary School) upon the completion of two years successful teaching experience in Ontario.

ACADEMIC PROGRAM

The program for each student consists of five and a half courses or sixteen and a half credits. Each candidate must elect a half course in Professional Practice and Administration in either the first or second semester. A full course in Psychology is also compulsory unless the student has at least two acceptable Psychology courses in his undergraduate program. Two courses in Curriculum and Instruction are required of each candidate. The remaining two or three courses necessary to make up the total of five and a half must be selected from the offerings of the college exclusive of Curriculum and Instruction courses with the only restrictions being that no more than three half courses must be taken in total with Professional Practice and Administration being one of the three.

CURRICULUM AND INSTRUCTION

CURRICULUM AND INSTRUCTION OPTION

Art	A,1-1
Biology	A,B
Business & Commerce (Accountancy, Data Processing, Marketing & Merchandising, Secretarial)	S,1
Chemistry	A,B
Computer Studies	A,B
Economics	A,B
Elementary Option	Est 4
English	A,B
Environmental Science (Agriculture)	A,B
French	A,B

General Science	B
Geography	A,B
German	A,B
Greek	A,B.
Guidance	Pt 1
History	A,B
Home Economics	A,1
Latin	A,B
Mathematics	A,B
Music	A,1,1-1,S
Physical Education	A,1,1-1,S
Physics	A,B
Political Science	A,B
School Librarianship	1-1
Spanish	A,B
Theatre Arts	Basic

CODES

Type A Level	A
Type B Level	B
Intermediate Certificate Level	1
Intermediate Certificate Part 1	1-1
Specialist Certificate Level	S
Certificate, Standard 4	Est 4

FOUNDATIONS

COMPULSORY

Professional Practice and Administration

E120a or b

Psychology

E121 Introduction to Educational Psychology

E130 Psychology of Effective Teaching

ELECTIVIES

History of Education

E180 Introduction to Canadian Educational History

E181 Education in the Development of the Canadian Nation

E182 Selected Topics in Canadian Educational History Social and Cultural Development in Ontario, 1791 - 1960

E183 The Classical Heritage in Western Education

E185 History of British Education

E187 History of American Education

E190 Comparative Education

E195 Contemporary Trends in Education

Philosophy

E120 Philosophical Problems of Education

E132 The Philosophy of History

E134 Logic and the Philosophy of Science

E135 Aesthetics

E138 Phenomenology and Existential Philosophy
E142 Ethics
E146 Social and Political Philosophy for the Teacher
E147 Philosophy of Language

Psychology

E120a and b Sociology and Education
E134b Education of Exceptional Children
E135a The Psychology of Early Childhood Education
E136a and b The Adolescent in the Secondary School
E141a Program Instruction
E144a and b Behaviour Theory and Its Application to Classroom Problems

Audio Visual

E120a and b Educational Media and Audio Visual Techniques
E125b Educational Television Production and Utilization

Classical Studies

E135b Classical Humanities in Elementary and Secondary Schools

Computer Studies

E131a and b Introduction to Computers

English

E132a and b Children's Literature

Guidance

E130a and b Tests and Measurements

History

E135b Advanced Curriculum Planning in History and the Social Sciences
E136a and b Canadian Studies

Physical and Health Education

E131a and b An Introduction to the Scientific Principles of Modern Sports Training for Schools

Professional Practice and Administration

E125a and b

OBSERVATION AND PRACTICE TEACHING

It is recommended that prospective candidates spend some time during May or June in a secondary or elementary school observing teaching techniques, daily routine and school organization. The candidate should make his own arrangements with the principal of a convenient school for this period of observation.

During the College year, for periods of a total of nine weeks, student teachers will be assigned to schools in the counties of Brant, Bruce, Elgin, Essex, Grey, Huron, Kent, Lambton, Lincoln, Middlesex, Niagara South, Norfolk, Oxford, Perth, Waterloo and Wellington. During these periods, student teachers observe the operation of the school and teach lessons in their respective options under the guidance of capable Associates of Althouse.

INTERCULTURAL TEACHER EDUCATION COURSES (ITE)

AIMS: The college provides orientation for teachers who, while able to serve well in any school, are prepared to teach in schools in which they would be concerned with pupils from a different culture, or from a variety of differing cultures.

Qualifications: The program is within the framework of the existing winter calendar at Althouse. Students meet the normal admission requirements and, at the end of the year, satisfy the existing regulations for certification.

Intercultural Electives: I. T. E. students should consult the coordinator on selection of courses from the college calendar which relate to the aims of the program, and to their own special interests within the program. All will be expected to take E190 Comparative Education, Section II (Cultural Perspectives), which is designed specifically for those in this program.

Curriculum and Instruction: Students will enroll in the regular courses appropriate to their subjects. Although I. T. E. is not limited to any particular curriculum options, prospective students are advised to discuss their selection of options with the coordinator, and should inform their curriculum departments of their I. T. E. interests when applying.

Teaching Practice: Students will complete the normal teaching practice assignment. Where possible, however, students will be placed in schools where pupils present a variety of cultural backgrounds, and, by virtue of their own origin, are accustomed to languages other than English.

Additional Requirements: From the foregoing outline, it will be evident that an I. T. E. selection of courses is not necessarily distinguished in any way from that which might be made by any student in the college, except by a concentration on specifically relevant courses and a defined sense of purpose. In addition however, I. T. E. orientation will make use of individual and group projects, workshops and other extra-curricular activities, and will introduce external consultants to bring special expertise to bear upon the program. Students will be advised on the availability and selection of various summer courses following the Althouse program (e.g. Department of Indian Affairs, C. U. S. O., etc.), as appropriate to their several intercultural interests. Such courses constitute the specific culture extensions of the general intercultural orientation offered at the college.

Consultation: Students who are interested in Intercultural Teacher Education should contact the coordinator before registration. Consultation can be arranged by the Curriculum and Instruction Departments to coincide with departmental selection interviews; or contact Dr. David Radcliffe, Department of History of Education, (679-3958 or 679-3480), directly.

GENERAL INFORMATION CONCERNING VOCATIONAL TEACHING CERTIFICATES

The following basic certificates may be obtained by candidates who satisfy the appropriate admission requirements and who complete successfully the winter session of professional training, which extends from mid-September to mid-May, at a College of Education.

For Applicants Who Have Appropriate Degrees

Two (2) years of acceptable experience, subsequent to graduation, is required of graduates from approved four-year degree programs in Architecture, Engineering, and Nursing.

(1) INTERIM VOCATIONAL CERTIFICATE, TYPE B (TECHNICAL SUBJECT NAMED)

The holder qualifies to teach the technical subject, which is named on the certificate, in the Colleges of Applied Arts & Technology, the vocational and composite secondary schools and the special vocational schools in Ontario.

(2) INTERIM VOCATIONAL CERTIFICATE, TYPE A (TECHNICAL SUBJECT NAMED)

The holder qualifies to teach the technical subject named on the certificate and may qualify for appointment as a Technical Director. Further information may be obtained by contacting the Registrar's Office.

FEES

Fees for the winter session are due and payable in full on registration day. If necessary, fees may be divided into two instalments payable on the first day of each term. The extra charge for this division of fee is $5.00. The $50.00 deposit required as outlined in the application brochure will be deducted from the first instalment. This deposit will not be refunded if you do not register at Althouse College in September 1973.

WINTER SESSION

Full-Time Students $644.00

This amount includes a Student Activity Fee of $54.00 and Supplies and Materials Fee of $10.00

If paid in two instalments

Registration Day $300.00

First day of second term (includes a $5.00 deferred payment charge) $349.00

Official student tax certificates may be obtained in February from the Cashier, Office of the Comptroller, Stevenson Hall.

Summer Session

All five week courses $103.50

All six week courses $123.50

NOTE: The Board of Governors reserves the right to amend fees after the printing of this calendar.

Brescia College

Principal:
Sister Arleene Walker, BA UWO; MA Catholic University of America
Registrar:
Mrs. E. M. Arnold
Business Administrator:
Mr. N. Crack
Librarian:
Sister Pierina Caverzan, BA UWO; MALS Rosary College
Dean of Students:
Sister Mary Patrick Curry, BA UWO; MEd Toronto
Alumnae Advisor:
Sister Margaret Hanley, BA UWO; MA Detroit

Brescia College

Address for Correspondence:
1285 Western Road, London N6G 1H2
Telephone: 432-8353

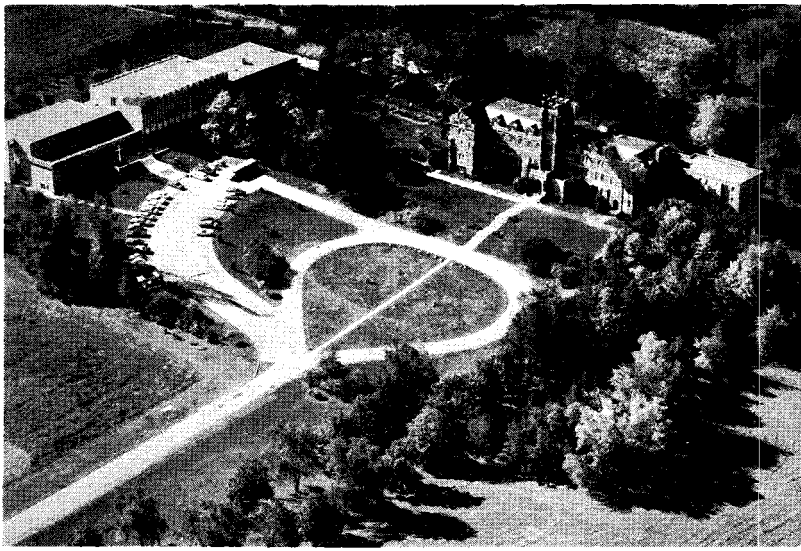
BRESCIA COLLEGE TEACHING STAFF

Adams, S., BA Minnesota; MA Toronto — *English.*
Angelov, A. D., BA UWO — *Geography.*
Bergeron, M., MA UWO — *Economics and Home Economics.*
Byard, Catherine E. (Mrs.), BSc Mount Allison — *Home Economics.*
Cavanaugh, P. E., (Reverend), BA UWO; MA Toronto; PhD Notre Dame — *Philosophy.*
Chaudhary, Krishna (Mrs.), BA, MA Bihar; MA Windsor — *Sociology.*
Chen, Shirley (Mrs.), BA Taiwan Chung Shen; MS, PhD Nebraska — *Home Economics.*
Chevalier, Lucille (Sister), BA Ottawa — *French.*
DiStefano, Lynne (Mrs.), BA Russell Sage; MA Boston; MA Pennsylvania — *Home Economics.*
Feldsman, Teresa (Sister), BA UWO — *German.*
Giovannetti, Patricia, BSc St. FX; MS Minnesota; PhD Manitoba — *Home Economics.*
Guinan, St. Michael (Sister), BA UWO; MA Catholic U. of America; PhD Laval — *Philosophy.*
Howe, Margaret (Mrs.), BA Acadia; MA Toronto — *Psychology.*
Hunter, R. B., (Reverend), BA UWO; STBS — *Religious Studies.*
Kuntz, Dolores (Sister), BA UWO; MA Detroit; Dip. Psych; PhD Queen's — *Psychology.*
Leishman, Patricia (Mrs.), BA New Rochelle — *Spanish.*
McKenzie, Mary Louise (Sister), BA, MA UWO — *English.*
Meloche, Eva (Sister), BA Ottawa; MA Montreal; Dip. Sup. d'Etudes francaises, Grenoble — *French.*
Mercer, Nina (Mrs.), BA Nebraska; MS Cornell; RP Dt — *Home Economics.*
Murphy, R. T. A., (The Very Reverend), OP, STD Angelicum; SSD Biblical Commission; STM Dominican Order — *Religious Studies.*
Murray, Nancy (Mrs.), BSc Mount Allison, RP Dt — *Home Economics.*
Normandeau, Helen (Sister), BA UWO; MSc Wisconsin — *Home Economics.*
Paul, J., BA, MA, PhD Toronto — *Psychology.*
Quenneville, Marie-Anne (Sister), BA, MA Ottawa — *Religious Studies.*
Rickman, Lillian (Mrs.), BA Chicago; RP Dt — *Home Economics.*
Ryan, Frances (Sister), BA, MA UWO — *Sociology.*
Ryan, M. T., (Reverend), BA UWO; MA, PhD Notre Dame — *Philosophy.*
Sather, Jane M., BSc Saskatchewan; MSc Guelph — *Home Economics.*
Sharp, Carola (Sister), BEd Fordham; MA U of New Brunswick — *German.*
Sharp, Corona (Sister), BA UWO; MA PhD Notre Dame — *English.*
Shirley, R., BA UWO — *History.*
Shivers, Janice L. (Mrs.), BSc Kansas — *Home Economics.*
Strube, Sin Phing Moo (Mrs.), BA, MA U of Singapore; PhD U of Michigan — *Mathematics.*
Turner, Mary (Sister), BA UWO; MA Notre Dame — *Latin.*
Walker, Arleene (Sister), BA UWO; MA Catholic U of America — *Sociology.*
Zoll, A. R., BA Michigan; MA New Mexico; PhD Michigan — *English.*

BRESCIA

BRESCIA COLLEGE OFFERS -

In an age of overcrowding and pollution, the College offers a beautiful campus with space for quiet reflection and a comfortable residence. Opportunities for Christian worship and for service to people in need are available. Brescia students share in all University activities; academic, social, athletic and cultural. Certain courses are taken at the University or other affiliated colleges. Some classes in the College are co-educational. Student government is divided into the Brescia College Council, which administers student affairs within the College as a whole and sends representatives to the University Student Council, and the Brescia Residence Council, which concerns itself with residence life. Owing to its exceptional position in Canada, Brescia College offers to women students unique opportunities in leadership and self-government.



BRESCIA COLLEGE IS -

A residential women's college under Catholic auspices affiliated with the University of Western Ontario that has given over half a century of service to the communities of London, of Canada and of the world. Alumnae of the College have distinguished themselves in such fields as education, work with the aged and the handicapped, scientific research, music, business, social work and the foreign and civil services. The University has honoured two of the former Deans of the College with honorary doctor's degrees.

BRESCIA COLLEGE STRIVES -

Because of its student-centred approach to education, the College selects the PERSON from the mass. It strives for better education through personal contacts, professional excellence, academic counselling, small classes and seminars. An academic community of students, professors, counsellors, and librarians is an ideal of the College. Original thinking and independent research are goals of the person-oriented search for knowledge and its use in living. Truth, beauty and goodness are valued as the ends of a liberal education.

ADMISSION REQUIREMENTS TO FIRST YEAR - 1973

The academic requirements are the same as those published by the University of Western Ontario in its General Information Booklet. The following is a brief summary of these requirements (1973):

(a) Completion of secondary school studies, including a full year of successful study at the Grade 13 (or fifth year) level;

(b) A recommendation made by the principal (or designate) of the school in which the student completes his education at the secondary level, attesting to his-her ability;

(c) A complete academic record for the work traditionally recognized as at the level of Grades 11, 12 and 13;

(d) Results of the tests appropriate to the student's program offered by The Service for Admission to College and University (SACU) or the appropriate tests of The College Entrance Examination Board (CEEB).

Students from Provinces other than Ontario, or from other countries, may apply for admission to First Year if their academic records in subject matter and standing obtained meet both the requirements for admission to this University and the requirements for admission to a recognized university in their own province or country.

Requirements of Specific University Programs are as follows:

FIRST YEAR PROGRAM

Arts - None

Home Economics - Chemistry and Biology

(English and Mathematics strongly recommended)

Secretarial Science - English

Social Science - none, although students are strongly urged to complete Mathematics A and/or B.

PRELIMINARY YEAR

(QUALIFYING YEAR FOR FIRST YEAR UNIVERSITY-CO-EDUCATIONAL)

The Preliminary Year offered at Brescia College is designed for students who have completed Grade 12 (Ontario) or who have the equivalent standing. Minimum standards of admission as set by the College are based on percentage, or rank-in-class, and on principals' reports.

MATURE APPLICANTS

An applicant not less than 23 years of age, whose academic qualifications do not meet in full the published admission requirements and who submits evidence of his potential ability to succeed in academic courses at the university level, is eligible to apply for admission to the First Year at this University. It is recommended that Mature Applicants possess standing in at least Grade 13 English. Teachers who are graduates of approved teachers' training courses, and who have two or more years' teaching experience but lack full Grade 13 matriculation (or equivalent), are considered as Mature Applicants without consideration of their age.

REGISTERED NURSES

Registered Nurses holding graduation diplomas from Schools of Nursing may apply for admission to First Year of the General BA Program. Admissibility will be

determined on the basis of standing within the Nursing studies and no advanced standing may be granted. Further information may be obtained from the Registrar.

APPLICATION PROCEDURES

1. Ontario Grade 13 students can obtain an application form directly from the Principal or Guidance Counsellor of their Secondary School. Others may apply to the Registrar.
2. Original certificates or official transcripts should be submitted for all academic work completed to date.
3. Applicants will find a visit to the College and a personal consultation with the Registrar very helpful. They may write for an appointment.

SCHOLARSHIPS AND AWARDS

ENTRANCE SCHOLARSHIPS

Several Brescia College Entrance Scholarships valued at $300 each, payable toward tuition, are available for applicants with at leat 80% average.

Several Brescia College Entrance Scholarships valued at $100 are available for applicants with an average of 75%-79%.

INTER-YEAR SCHOLARSHIPS

The Brescia College Alumnae offer several scholarships for students with the highest average (at least 80%) among upperclassmen. Brescia College offers a prize for the highest average (at least 80%) in each of Home Economics 30 and Home Economics 32.

AWARDS TO THE GRADUATING CLASS

The Brescia College Advisory Board each year awards a Gold Medal to the Graduate with the highest average (at least 80%). Brescia College presents the Home Economics Award to the graduating student with the highest average (at least 80%) in Home Economics.

GOVERNMENT LOANS AND GRANTS

All students residing in Ontario may apply for a Student Loan and Grant if they are in need of assistance.

Application forms may be obtained from the Dean of Students or the Registrar at Brescia. Completed forms, in duplicate, should be sent to the Student Awards Officer at The University of Western Ontario.

RESIDENCE

Brescia College offers residence to 174 women students registered at the College. Facilities include double rooms for First Year students, and single rooms for students who have completed First Year; coin-operated laundry equipment; and a cafeteria providing three meals a day for seven days a week.

Since accommodation is limited, application for residence should be made as soon as possible on the form provided by the Registrar. Each application should be accompanied by a deposit of $50.00 which is credited on account, and is refundable if the College is informed of withdrawal by the date specified in the letter of acceptance.

Students should bring their own sheets, pillow cases, towels, and blankets.

FEES

(All fees subject to change from year to year)

TUITION fee is the same as at the Constituent University. For the academic year 1973-74. full time Tuition*) $642.50

(Preliminary Year Tuition*) $692.50

*) Note a $50.00 non-refundable tuition deposit (credit on account) is required of all freshmen students.

Brescia College **STUDENT COUNCIL FEE** $16.00

RESIDENCE*) $1,050.00

*) Fees for the academic session do NOT include Christmas vacation period. Students may take up residence twenty-four hours prior to registration and must vacate their rooms within twenty-four hours following the last date of the final examinations.

Fees are payable in full on registration day. If necessary, special arrangements may be made for payment of fees in two installments, in which case a charge of $5.00 is added to the second installment (this installment is due on or before the first day of the second term). Registration is not considered complete until fees are settled.

WITHDRAWAL

If a student withdraws after registration, but before the end of the first week of classes, $50.00 of the Tuition Fee as well as the $50.00 Residence Deposit is retained by the College. After this date, fee adjustments for tuition will be made according to the schedule in effect at the Constituent University. Residence fees will not ordinarily be refunded unless a student finds a replacement approved by the College. Decisions regarding exceptions to this regulation rest entirely with the College.

HEALTH SERVICES

A physical examination by a practising physician is required of all students registering for the first time. The necessary form for this may be obtained from the Registrar and should be filled out before registration. There is a Health Service clinic on the University campus which may be consulted by Brescia College students during the regular academic sessions.

A counselling service is also available.

Testing for tuberculosis is provided during the school year and must be undergone by students each year. Insurance for Hospital and Medical Services is the responsibility of the student. In Ontario, only the insurance provided by the Provincial Government through the Ontario Health Insurance Plan (OHIP) is permitted. Students who already have hospital insurance in other provinces should ascertain, before coming to Ontario, if their policies will be honoured in Ontario. Students from outside Canada should apply for OHIP immediately on arrival, since coverage does not become effective for three months from time of application.

PRELIMINARY YEAR

The Preliminary Year will consist of the following program:

FOR ADMISSION TO FIRST YEAR GENERAL PROGRAM

(Arts, Music, or Social Science), or to Secretarial Science:

English 10

Four other courses to be chosen from: Geography 10; History 14; Mathematics 10; Religious Studies 10; a second language 2 or 10.*)

(languages available are: French 2 or 10; German 2 or 10; Italian 2; Latin 2 or 10; Russian 2 or 10; Spanish 2).

*) A language at the "2" level is an intensive beginners course, at the "10" level it presupposes Grade 12 or its equivalent.

SPECIAL COURSES

The following courses, equivalent to Grade 13 subjects, are not offered in the College of the University, but may be offered by the affiliated college as part of the Preliminary Year.

10. English - Literature and Composition.
3 hours.

10. French - Intermediate French.
Prerequisite: Grade 12 French.
3 hours.

10. Geography - Geography of Canada.
3 hours.

14. History - History of Canada and the United States.
3 hours.

10. Latin - Intermediate Latin.
Prerequisite: Grade 12 Latin.
3 hours.

DEPARTMENT OF HOME ECONOMICS

ASSOCIATE PROFESSOR AND CHAIRMAN: Giovannnetti ASSISTANT PROFESSORS: Chen, DiStefano, Mercer, Rickman, Sather LECTURERS: Byard, Murray, Normandeau, Shivers INSTRUCTOR: Bergeron

REQUIREMENTS FOR ADMISSION

A full year of successful study at the Grade 13 level with Chemistry and Biology required and English and Mathematics strongly recommended.

This program is offered jointly by the University and Brescia College. All Home Economics courses are given at Brescia College, the Natural Sciences are given at the University, and the Humanities and Social Sciences are given at both the University and Brescia College.

CAREER OPPORTUNITIES

The Home Economics Program is concerned with family and community needs. The graduate from this program should have sufficient knowledge, communicative competency and the necessary confidence to play a specific role in helping people manage their lives effectively, by advising them with regard to food, clothing, shelter and human relationships. This is done through regular channels of employment.

Graduates from the current three-year General Program are admissible to a College of Education in Ontario for training towards a Type B Teaching Certificate. This Certificate enables the graduate to teach at the elementary or secondary school level in Ontario. The three-year Food and Nutrition Program leads to a Nutrition and Administration (Concentration B) dietetic internship approved by the Canadian Dietetic Association. The qualified dietitian may be engaged in the administration of normal or modified diets in schools, hospitals, industry, commercial establishments and the Armed Forces. In addition, she (he) may obtain a position as a nutritionist, interpreting the principles of nutrition for the promotion of public health, usually through government services.

The graduate home economist may also find a satisfying career as a home economist in either the rural or urban community by communicating ideas,

principles, techniques and the latest research findings through written and audio-visual communication media, or in business and government by developing, testing and promoting consumer products or utilities.

In order to help graduates meet requirements for a Type A Teaching Certificate and Nutrition or Administration (Concentrations A and C) dietetic internships approved by the Canadian Dietetic Association, additional Home Economics courses (80a, 81a, 84a, 85b, 86b, 88b, 90a, 91a, 95b, 96b, 97b) are being offered for the 1973-74 academic year.

This Home Economics Program also permits the graduate to continue her (his) studies towards an advanced degree.

Students should be aware that a 70% average in Home Economics courses is desirable for a Type B teaching Certificate and is a requirement for a Type A Teaching Certificate.

An overall average of 70% is recommended for students in the Food and Nutrition Program to assure acceptance into a Canadian Dietetic Association approved dietetic internship.

FIRST YEAR:

Biology 21

Chemistry 23

Sociology 20

OR

Psychology 20

Home Economics 23a

One Of

Home Economics 20b, 24b, 25b

One Arts option at the 20 level

Orientation to Home Economics

(First Term 1 hour No Credit)

At the end of the first year, the student must choose between the General Program and the Food and Nutrition Program.

SECOND YEAR:

Plant Sciences 36y

Chemistry 33

General Program -

Physiology 30*

Home Economics 20a or 20b

(if not taken previously); otherwise

Home Economics 25b

Home Economics 30a or 30b

Two of the following:

Home Economics 31, 32, 34

Food and Nutrition Program -

Physiology 30

Home Economics 31, 32

A senior option in Psychology (preferably 241 - Developmental Psychology) or Sociology (preferably 39 - The Family).

*General Program students will be exempted from laboratory experience; a one hour tutorial will be available weekly.

THIRD YEAR:

General Program -

Biochemistry 36

Home Economics 40, 41b, 42, 45

One approved senior option

Food and Nutrition Program -

Biochemistry 36

Home Economics 41a, 42, 45, 48a, 49a, 58b, 59b

COURSES

20a and 20b. Introductory Clothing. An analysis of basic construction theory applied to a wide range of fabrics and styles.
Half course offered both terms.
(Students will take that which best fits in with their program).
3 lecture/laboratory hours.

23a. Basic Design. Introduction to the elements and principles of design. Through illustrated lectures, group discussion, and individual studio exercises, the student will explore the elements and principles of design. Emphasis will be placed upon theoretical understanding.
Field trips, Half course (First Term); 3 lecture/studio hours.

24b. Advanced Design. Continued study of the elements and principles of design. Through extended studio projects, selected on an individual basis, the student will explore the elements and principles of design in depth. Emphasis will be placed upon creative project solutions.
Field trips.
Prerequisite: Home Economics 23a.
Half course (Second Term); 3 lecture/studio hours.

25b. Housing Design and Planning. An investigation of historic and contemporary house design with emphasis on technological, sociological, functional, economic and aesthetic aspects of contemporary housing.
Half course (Second Term); 3 lecture hours.

30a and 30b. Advanced Clothing. A survey of couturier methods and intricate design details of construction.
Prerequisite: Home Economics 20.
Half course (offered both terms).
(Students will take that which best fits in with their program).
3 lecture/laboratory hours.

31. Fundamentals of Human Nutrition. A study of the chemical, physical and functional properties of the nutrients with special emphasis on the metabolism and factors affecting human dietary requirements.
Corequisite: Chemistry 33 or 203, Physiology 30
3 lecture hours, 1 laboratory/tutorial hour.

32. Principles of Food Science. A study of the physical structure, chemical composition and nutritive value of foods with emphasis on the effect of the physical and chemical environment on a finished product. An experimental approach will demonstrate the principles and methods of food preparation.
Corequisite: Chemistry 33 or 203
3 lecture hours, 3 laboratory hours.

34. Introductory Textile Science. A study of fibre properties, and generic fibre classes, with emphasis on the relationship between properties and end use performance; an introduction to textile finishing. Laboratory study of yarn and fabric structure, fibre and fabric properties.
Prerequisite: Chemistry 20, 23 or 25.
3 lecture hours, 2 laboratory hours.

40. Textile Science. Fibre fabric, and yarn structure; chemical and physical properties of fibres; mechanical finishes; textile processing. Identification and testing of textile materials. Costume design through flat pattern methods.
Prerequisite: Home Economics 30, Chemistry 33.
2 lecture hours, 3 laboratory hours.

41. Advanced Nutrition. Nutritional needs during infancy; the adolescent. Diet therapy.
Seminars.
Prerequisite: Home Economics 31, Biochemistry 36 concurrently.
3 hours.

41a. For students interested in Food Service Management, Nutrition and Therapeutics.

41b. For students interested in teaching and related fields.

42. Principles of Food Science.
Prerequisite: Home Economics 32.
2 lecture hours, 2 laboratory hours.

45. Consumer Economics and Communications. Marketing and consumer problems. Demonstration techniques.
1 lecture hour, 2 laboratory hours.

48a. Food Production Management. The application of scientific principles to the procurement, production and service of institutional food. Work organization, menu-planning, recipe development and food trends are studies. Field trips and field work are required. Limited to Food and Nutrition majors.
Half course (First Term); 3 lecture hours, 4 laboratory/field trip hours.

49a. Principles of Management. A study of management by consideration of the evolution of managerial theory and the influence of the behavioural sciences. To initiate development of managerial skill, emphasis is placed on objectives, policies, authority relationships and methods of work improvement. Case studies are used to develop skill and decision-making.
Half course (First Term); 3 lecture hours.

58b. Equipment Selection and Food Facility Layout. A study of the principles of selection and maintenance of large and small equipment for institutional use, and the determination of area and space relationships in the planning of physical facilities.
Prerequisite: Home Economics 48a.
Half course (Second Term); 3 lecture hours.

59b. Managerial Control. A study of the nature and purpose of staffing, motivation, grievance procedures and collective bargaining. Methods of cost control of a food service by a study of basic accounting principles, internal records, financial statements, budgets and the computer as a management tool are considered.
Prerequisite: Home Economics 59a.
Half course (Second Term); 3 lecture hours.

The following courses are available for students who have already obtained a BA degree in Home Economics but wish to up-date in one or more areas of the program

80a. Advanced Topics in Clothing.
Prerequisite: Home Economics 40 or by permission.
Half course (First Term); 3 hours.

81a. Advanced Topics in Nutrition.
Prerequisite: Home Economics 41 or by permission.
Half course (First Term); 3 hours.

84a. Advanced Topics in Textiles.
Prerequisite: Home Economics 40 or by permission.
Half course (First Term); 3 hours.

85b. Advanced Topics in Clothing.
Prerequisite: Home Economics 40 or by permission.
Half course (Second Term); 3 hours.

86b. Advanced Topics in Nutrition.
Prerequisite: Home Economics 41 or by permission.
Half course (Second Term); 3 hours.

89b. Advanced Topics in Textiles.
Prerequisite: Home Economics 40 or by permission.
Half course (Second Term); 3 hours.

90a. Seminar in Clothing.
Prerequisite: Home Economics 40 or by permission.
Half course (First Term); 2 hours.

91a. Seminar in Nutrition.
Prerequisite: Home Economics 41 or by permission.
Half course (First Term); 2 hours.

95b. Seminar in Clothing.
Prerequisite: Home Economics 40 or by permission.
Half course (Second Term); 2 hours.

96b. Seminar in Nutrition.
Prerequisite: Home Economics 41 or by permission.
Half course (Second Term); 2 hours.

97b. Seminar in Food.
Prerequisite: Home Economics 42 or by permission.
Half course (Second Term); 2 hours.

SECRETARIAL SCIENCE

The Department of Education of Ontario accepts a degree in this program as the academic qualification for entry into a college of education. Upon successful completion of a one-year program at a college of education the student receives the High School Assistant's Certificate, Type B, for teaching in the Secondary Schools of Ontario.

FIRST YEAR

Secretarial Science 25

Business 20

English 20, 24 or 26

Two Options*

* The Department suggests Computer Science 21 as a possible choice for one of these options provided the student has the appropriate background in Mathematics.

SECOND YEAR

Secretarial Science 35, 37

Economics 20

A Senior English

Two Options

THIRD YEAR

Secretarial Science 30

Secretarial Science 45, 47

A Senior English

Two Senior Options

GENERAL ARTS

The First Year offers a year of basic general education and an opportunity to do university work in subjects not available in the Secondary School. Successful completion of five courses in the First Year makes the student eligible to register in the Second Year of the three-year General program, or of a four-year Honors program.

The General Arts Program consists of fifteen courses taken over a three-year period. An area of concentration, or major, may be chosen. This will consist of at

least five courses in a subject, four of which must be at the senior level. For further details consult the General Information Booklet of the University of Western Ontario.

HONORS

Programs are four-year programs after Grade 13, and a student is admitted to the Second Year only after successful completion of a First Year General Program. The following Honors Programs are offered at Brescia College: English, French, History, Philosophy, and any combination of Honors containing one of these subjects. Details of these Honors Programs may be found in the General Information Booklet of the University, or in the Calendar of the Faculty of Arts and Social Science.

COURSES

(Course descriptions are here provided only for those courses taught at Brescia College. If some of these are not offered in a given year at Brescia, they are always offered at the Constituent University and, in some instances, at the other Affiliated Colleges also. Other courses in Arts and Social Science are available for Brescia College students at the University or the other Affiliates. All laboratory courses in the Natural Sciences are taught entirely in the Faculty of Science).

CLASSICS

ASSISTANT PROFESSOR: Turner

10. Latin - Intermediate Latin. Selections from prose and poetry; composition and sight translation.
Prerequisite: Grade 12 Latin or Latin 2.
3 hours.

20. Latin - Advanced Latin. Vergil, "Aeneid" IV; Pliny, Selected Letters; composition and sight translation.
Prerequisite: Grade 13 Latin or Latin 10, or Latin 2 with permission of the Department.
3 hours.

ECONOMICS

INSTRUCTOR: Bergeron

20. Economics - Introduction to Economics. The nature of economics, economics organization, national income, money and banking, economic fluctuations, public finance and fiscal policy, price determination, international trade, and Canadian economic problems.
3 hours.

ENGLISH

PROFESSOR: Sharp

ASSISTANT PROFESSORS: McKenzie, Zoll

INSTRUCTOR: Adams

10. English - Literature and Composition.
3 hours.

20. English - General Literature and Composition. An introduction to the romance, ironic (or satiric), tragic and comic modes of literature.
3 hours.

24. English - Forms of Fiction. An introduction to the study of a) a selection of fiction ranging from the Greek epic to the modern novel, including both short and longer forms; b) a variety of fictional modes and narrative techniques.
3 hours.

26. English - Forms of Drama. An introduction to the study of a) the main principles of dramatic art; b) selected aspects of dramatic and theatrical history; c) the major dramatic genres.
3 hours.

30. English - Comparative Literature. A course of reading in English or in English translations of some of the great books of Western civilization from Homer to Joyce with particular emphasis on the growth of epic, drama, and fiction. (Formerly English 45).
3 hours.

31. English - Contemporary Literature. An introduction to the poetry and prose of the contemporary scene. (Formerly English 47).
3 hours.

300. English - The Novel. (Formerly English 444).
3 hours.

330. English - Literature of the Sixteenth Century, Excluding Drama. (Formerly English 280).
3 hours.
To be offered 1973-74.

331. English - Literature of the Seventeenth Century, Excluding Drama. (Formerly English 380).
3 hours.
To be offered 1974-75.

332. English - Shakespeare. (Formerly English 256).
3 hours.

360. English - Literature of the Victorian Period (1832-1900).
3 hours.

370. English - Modern Literature (1890-1945). (Formerly English 459).
3 hours.

371. English - Modern Drama. (Formerly English 436).
3 hours.
Not offered 1973-74.

FRENCH

ASSISTANT PROFESSOR: Meloche

INSTRUCTOR: Chevalier

2. French - Intensive French for Beginners. Grammar, composition, *oral practice.* This course is designed for students beginning French at University. Prepares the student directly for French 20.
5 hours.

10. French - Intermediate French. Grammar review, composition, *translation, oral practice.* (One hour per week in the language laboratory may be required).
Prerequisite: Grade 12 French.
3 or 4 hours.

20. French - French Language and Literature. This is the basic freshmen course in French, providing training in language and literary studies, and an introduction to French institution. In the initial stages, English will be used; thereafter the course will be given in French.
Lectures, tutorials, and language laboratory.
Prerequisite: French 2, 10 or Grade 13 French.
4 hours.

30. French - The French Novel. A *study of typical examples of the novel* taken from French literature of the seventeenth through the twentieth centuries.
Prerequisite: French 20 or by permission of the Department.
3 hours.

31. French - Language. Grammar, composition, translation, oral practice. (One hour per week in the language laboratory may be required).
Prerequisite: French 20 or by permission of the Department.
3 or 4 hours.

34. French - French Drama. A study of typical examples of French dramatic literature of the seventeenth through twentieth centuries.
Prerequisite: French 20 or by permission of the Department.
3 hours.

232. French - French Civilization and Conversation. A study of modern France, her historical background and political, economic, social and cultural development.
Prerequisite: French 20 or by permission of the Department.
3 hours.

271. French - Language. Grammar, composition, oral practice, phonetics, introduction to Linguistics. (One hour per week in the language laboratory may be required). This course is required for concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 or 4 hours.

290. French - Introduction to French Literature. A study in depth of the texts from the 19th and 20th centuries designed to provide intensive training in the skills of literary analysis. This course is required for concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 hours.

GEOGRAPHY

INSTRUCTOR: Angelov

10. Geography - Geography of Canada.
3 hours.

GERMAN

LECTURERS: Feldsman, Sharp

2. German - Intensive German for Beginners. A more intensive course than German 1. Designed for students who begin German at the University and who contemplate making German their subject of concentration or desire to enter the German honors courses.
3 lecture hours, 2 laboratory hours.

10. German - Intermediate German. Further study of the structure and idiom of the language. Reading in modern prose and poetry. Oral and written practice.
Prerequisite: German 1 or by permission of the Department.
3 hours.

20. German - Language and Literature. Survey of German literature, given in German.
Prerequisite: Grade 13 German or German 1 (with A standing) or 2 or 10 or by permission of the Department.
3 hours.

***20. German - German Language and Literature.** Survey of German literature, conducted largely in German, with further work on the language.
Prerequisite: Grade 13 German or German 2 or 10 or by permission of the Department.
3 hours, (plus optional laboratory hours).
Proposed 1973-74.

HISTORY

INSTRUCTOR: Shirley

14. History - History of Canada and the United States.
3 hours.

20. History - Modern Europe. 1715 to the Present.
3 hours.

MATHEMATICS

INSTRUCTOR: Strube

10. Mathematics - Calculus with Analytic Geometry. Topics in algebra, trigonometry and analytic geometry followed by an introduction to differential and integral calculus. May not be taken for credit by students with Grade 13 Mathematics A.
Prerequisite: Grade 12 Mathematics
3 lecture hours, 1 tutorial hour.

PHILOSOPHY

PROFESSORS: Guinan, Ryan

ASSOCIATE PROFESSOR: Cavanaugh

20. Philosophy - Introduction to Philosophy. This course deals with fundamental problems in Philosophy, Moral Philosophy, especially in Natural Philosophy, Moral Philosophy, and Metaphysics, and the solutions offered by great thinkers in these respective fields.
3 hours.

35. Philosophy - Aesthetics: Conceptual Problems Relating to the Production and Appreciation of the Fine Arts. Specimen topics include the nature of the work of art and of artistic expression, artistic criticism, fiction, metaphor, appreciation and the logic of value judgements.
2 hours.

38. Philosophy - Phenomenology and Existential Philosophy. A course designed to acquaint the student with the fundamentals of the existentialist movement. Among philosophers considered will be: Kierkegaard, Nietzsche, Husserl, Marcel, Heidegger, Sartre, Merleau-Ponty.
2 hours.

42. Philosophy - Ethics. Critical discussion of moral issues and theories.
2 hours.

43. Philosophy - Philosophy of Religion. Conceptual problems relating to personal and institutionalized religion. Specimen topics include: the nature of religious experience and knowledge, analysis of the concept of God, analysis and comparison of important types of religious philosophy.
2 hours.

45. Philosophy - Political Philosophy. Critical readings from selected original sources of the political thought of ancient, modern, and contemporary thinkers.
3 hours.

PSYCHOLOGY

PROFESSORS: Kuntz, Paul

ASSISTANT PROFESSOR: Howe

20. Psychology - Introduction to Psychology. An introductory survey of the methods and findings of modern scientific psychology. The following topics will be covered: history and methodology, biological psychology, sensation and perception, learning and motivation, verbal and cognitive processes, developmental psychology, social psychology, individual differences (intelligence and personality), and clinical psychology.
Although there is no laboratory requirement, voluntary participation in approved research projects will be encouraged.
3 hours.

241. Psychology - Developmental Psychology: Basic Principles. A general survey of theory and research in developmental psychology including learning, cognition, perception, personality, and social development in infancy and early childhood. (Formerly Psychology 236).
Cannot be taken for credit if Psychology 36, 56, or 236 has been successfully completed.
2 lecture, 2 seminar, 4 hours total.

59. Psychology - The Exceptional Child. A comprehensive study of the etiology, identification, training and/or treatment of the exceptional child. Special emphasis will be given to the gifted, creative, mentally retarded, physically disabled, neurologically impaired and emotionally and socially disturbed. Assignments will include outside readings, essays and visits to community facilities.
Cannot be taken for credit if Psychology 39 or Psychology 242 has been successfully completed.
Prerequisite: Psychology 20.
3 hours.

253. Psychology - Theories of Personality. A critical analysis of representative personality theories.
Cannot be taken for credit if Psychology 31, 77b, 94, 251, 331 or 450 has been successfully completed.
Prerequisite: Psychology 20.
2 lecture hours and 2 hours to be assigned by the instructor, 4 hours total.

72. Psychology - Social Psychology. An introduction to the theories, methods, findings, and problems encountered in the study of man as a social being. Emphasis will be placed on field research. Substantive areas to be

covered include the following: socialization; social factors in perceptual-cognitive processes; attitudes, prejudice and propaganda; social influence; group dynamics; leadership; intergroup relations.
Cannot be taken for credit if Psychology 49, 64, 97, 275, 271, or 349 has been successfully completed.
Prerequisite: Psychology 20 or permission of instructor.
3 hours.

RELIGIOUS STUDIES

PROFESSOR: Murphy

LECTURERS: Hunter, Quenneville

10. Religious Studies. An introduction to Old Testament Theology through the men and messages of the Old Testament.
2 hours.

25. Religious Studies. Foundations of the Religious Response. An examination of the development of the religious phenomenon from primitive man up to the major world religious experiences.
2 hours.

35. Religious Studies - Comparative Religion. Ecumenism - a study of contemporary religions under various aspects.
2 hours.

37. Religious Studies - Contemporary Theology. A study of the principles of Christian Theology. A systematic consideration of basics, with special attention to present-day controversial and divisive theological issues.
2 hours.

SOCIOLOGY

PROFESSOR: Walker

ASSISTANT PROFESSOR: Ryan

LECTURER: Chaudhary

20. Sociology - Introduction to Sociology. An examination of the major theoretical perspectives in the field of Sociology, methods of empirical investigation of social phenomena, socialization, group structure, principles of social organization; community structure, population and social change.
3 hours.

39. Sociology - The Family. Sociological, psychological, and other research perspectives on family structure and functioning.
Prerequisite: Sociology 20 or permission of the Department.
3 hours.

40. Sociology - Social Problems. Study of theories of deviant behavior and of social disorganization, with particular attention to certain specific problems of the contemporary period.
Prerequisite: Sociology 20 or permission of the Department.
3 hours.

SPANISH

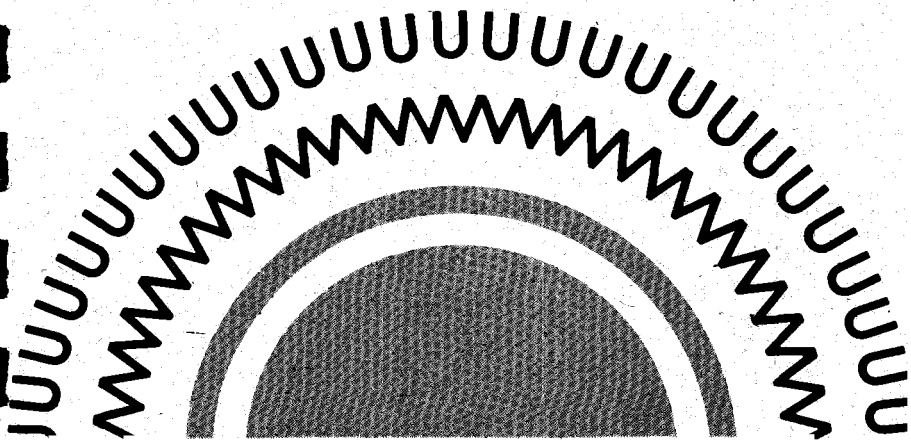
INSTRUCTOR: Leishman

2. Spanish - Intensive Spanish for Beginners. Introduction to understanding, speaking, reading and writing Spanish. Audio-lingual techniques are combined with practice in the language laboratory. Prepares student directly for Spanish 20 or 21.
5 hours.

10. Spanish - Intermediate Spanish. Reading in Spanish literature with grammar review and oral practice.

20. Spanish - Advanced Spanish. Readings in twentieth century Spanish literature with grammar review and oral practice. (One hour per week in the language laboratory is required).
Spanish 20 offers more extensive readings than Spanish 21 and covers the grammar in 18 class plus 18 laboratory hours.
Students who intend to concentrate or do Honors work in Spanish are urged to elect this course.
Prerequisite: Spanish 2, 10, Grade 13 Spanish or permission of the Department.
4 hours.

Huron College



Principal:
The Venerable J. Grant Morden, BA Toronto; LTh. DD Wycliffe; STM. Union Theological Seminary; DTh General Theological Seminary, New York
Dean:
Frederick W. Burd, BA, MA Toronto
Librarian:
John L. H. Henderson, BA, BD, DD Western Ontario
Registrar:
J. Catharine Ridley
Departmental Chairman:
Department of English:
Edward D. McVey, BA, MA Queen's, PhD Princeton
Department of French:
George A. Black, BA, MA Toronto, PhD Western Ontario
Department of Hebrew:
Geoffrey H. Parke-Taylor, BA, MA Toronto, LTh, BD, DD Wycliffe
Department of History:
Gary L. Owens, BA, MA Nebraska, PhD Wisconsin
Department of Philosophy:
Reese Miller, BA Cornell, BPhil Oxon, MA Michigan
Department of Psychology:
Moira S. Sansom, BA Mount Allison, BA New Brunswick, BLS Toronto, PhD London
Department of Religious Studies:
J. Grant Morden, BA Toronto, LTh, BD, DD Wycliffe, STM Union Theological Seminary, DTh General Theological Seminary, N.Y.

Huron College

Telephone Number - 519-438-7224

Members of the Faculty of Huron College

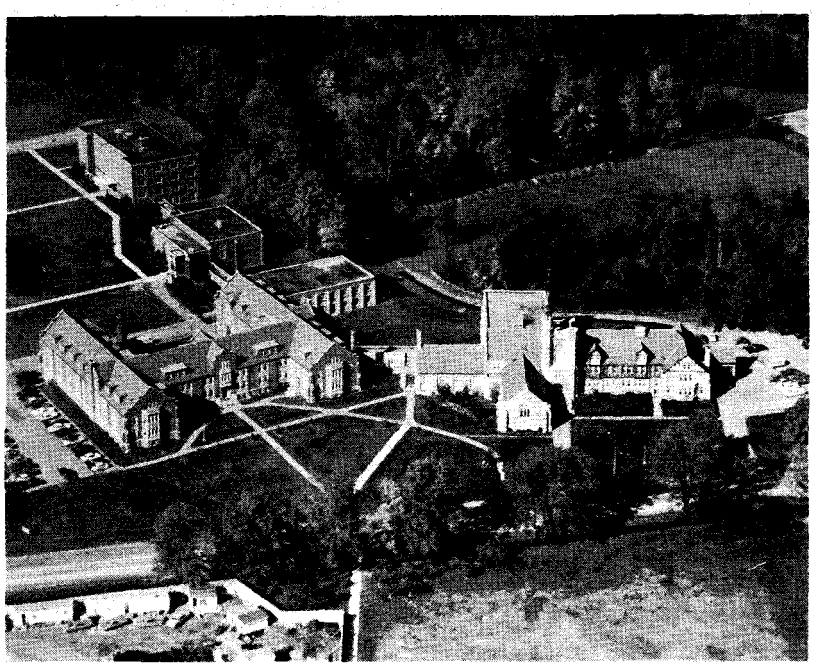
Allen, F. H., MA, BD Oxon.
Black, G. A., BA, MA Toronto; PhD Western Ontario.
Blocker, J. S., BA Florida; MA, PhD Wisconsin.
Burd, F. W., BA, MA Toronto.
Carruthers, B., BSc McMaster; MA, PhD. Western Ontario.
Cole, M. R., BA, MA, PhD Western Ontario.
Csapo, K., BA Waterloo Lutheran; MA, PhD Western Ontario.
Dalrymple, S. D., BSc Queen's Belfast; MSc, PhD Alberta.
Ford, T. T., BA, MA Alberta.
Harris, T., BA Toronto; LTh Wycliffe; MA Columbia; BD Union Theological Seminary.
Henderson, J. L., BA, BD, DD Western Ontario.
Irvine, D. F., BA Western Ontario; BTh Huron, MA Waterloo.
Jared, E. C., BA Western Ontario; MA Toronto; PhD Radcliffe.
Johnson, E. C., BA Mills College; MA Indiana; PhD Oregon.
Kay, H., BA Dalhousie; LTh King's, BD Trinity; MA Temple.
Lancaster, O., BA, MA Western Ontario.
McVey, E. D., BA, MA Queen's; PhD Princeton.
Marion, A. J. R., BA Montreal; MA Trinity College, Hartford.
Metford, D. A., BA, MA British Columbia; D. de l'u de Paris.
Miller, R., BA Cornell; B.Phil. Oxon; MA Michigan.
Miller, V., BA, MA, B.Litt. Oxon.
Morden, J. G., BA Toronto; L.Th, BD, DD Wycliffe; STM Union Theological Seminary; DTh General Theological Seminary, N.Y..
Owens, G. L., BA, MA Nebraska; PhD Wisconsin.
Parke-Taylor, G. H., BA, MA British Columbia; PhD Washington.
Poisson, R., BA, MA British Columbia; PhD Washington.
Revell, M. E., BA Toronto; MA, B.Litt. Oxon.
Roper, H., BA Dalhousie; BA, MA Cantab.
Rousom, B. E., BA Western Ontario; MA Toronto; BD Emmanuel.
Sansom, M. S., BA Mount Allison; BA New Brunswick; BLS Toronto; PhD London.
Schachter, J. P., BA City College of New York; MA City University of New York; PhD Syracuse.
Smet, E. F. M., BA, MA Western Ontario.
Speer, R. S., BA Yale; MA University of Pennsylvania.
Thomas, N. W., BA Mount Allison; MA Toronto; PhD Western Ontario.
Tucker, J. A., BA, BMus McGill; MA Toronto.
Van der Wel, C. M., BA London; MA Western Ontario.
Whittingham, W., BA York, England; MA Western Ontario.
Williamson, D. R., BA Liverpool; MA Western Ontario.
Willing, A., BA Northwestern College; MA Minnesota.

Huron College is an undergraduate, co-educational, residential liberal arts college affiliated with the University of Western Ontario, and situated immediately adjacent to the main University campus. With approximately five hundred students, half of whom live in residence, the College's relatively small size fosters a sense of community, ensures that classes are generally small, and makes

possible close working relationships between students and faculty. The College's academic affiliation with the University of Western Ontario means that its students obtain a University of Western Ontario degree through Huron College, and that all the academic and social resources of the University are fully open to them. Thus they not only take courses taught within the College but also can select courses within their program from those taught at the University itself; they can participate in extra-curricular activities within both the College and the University.

The aim of Huron College is to provide its own distinctive pattern of education for the student who seeks relevant basic preparation to meet a world of increasing change. In a society characterized by shifting values, technological innovation and an explosion of factual knowledge, the mere accumulation of knowledge is an increasingly uncertain and inadequate guide. Rather, the necessary qualities to be cultivated in a truly relevant education are intellectual curiosity and discrimination, independence of thought, and an awareness of the values implicit in our cultural heritage. Thus a broad liberal education uses the deep exploration of selected bodies of knowledge in a way designed to train the person to seek out fundamental and relevant questions and to evaluate the answers he attains, to learn to look beneath the surface for inner coherence or hidden inconsistency, to subject his thinking to the scrutiny of his fellows, and to seek in the world of thought and action those enduring values that underlie the best of man's creative endeavour.

In accordance with its aim, the College concentrates in its teaching on the disciplines of English, History, Philosophy and French, offering both honours and general programs. The teaching of the social sciences is strengthened by a major emphasis on Psychology and the offering of core courses in Economics. Courses in Religious Studies and Hebrew are open to students of the University as well as



the College. In general, the nature of the courses and programs offered within the College, coupled with the overlapping interests of its faculty, makes it possible for the student to become better aware of the relationships between the various courses he studies. Most importantly, Huron's own extensive library, whose resources are freely available to all its students, plays a central part in the academic life of the College.

By choosing from the College's own areas of concentration, and by supplementing his program with courses in a wide range of disciplines taught at the University, the student can achieve a basic liberal education which will give him a highly relevant background for going on to specific training in teaching, law, business, the social service professions, government service and other careers, and for progressing in personal growth and development.

PROGRAMS

The General Program in Arts and Social Science, all Honours Programs which include English, French, History or Philosophy, and the first two years of Honours Business Administration are offered by Huron College.

Through its Department of Religious Studies, Huron College offers courses open to all students of the University.

COURSES

The courses listed are those taught within the College. Other courses in a student's program, including those in the Natural Sciences, may be selected from those taught at the Constituent University or the other Affiliated Colleges. A student registered at Huron College will normally take at least two courses within the College each year unless granted special permission by the Dean.

DEPARTMENT OF ECONOMICS

ASSISTANT PROFESSOR: Williamson; LECTURER: Ford.

20. Introduction to Economics. The nature of economics, economic organization, national income, money and banking, economic fluctuations, public finance and fiscal policy, price determination, international trade, and Canadian economic problems.
3 lectures, 1 optional tutorial hour.

30. Intermediate Microeconomic Theory. A survey of microeconomic theory including theories of the firm, consumer behaviour, market organization, distribution and welfare.
Prerequisite: Economics 20 or 21.
3 hours.

31. International Trade and Finance. A discussion of the principles of international economics and their application to contemporary problems in the international economy.
Prerequisite: Economics 20 or 21.
3 hours.

33. Money and Income. A course in intermediate macroeconomic theory and policy. Topics will include national accounts, income determination, banking theory and practice, monetary theory, stabilization policies in closed and open economies.
Prerequisite: Economics 20 or 21.
3 hours.

DEPARTMENT OF ENGLISH:

Chairman: E. D. McVey, BA, MA *Queen's*; PhD *Princeton* PROFESSOR EMERITUS: Eleanor C. Jared, BA Western Ontario, MA Toronto, PhD Radcliffe PROFESSOR: Poisson; ASSOCIATE PROFESSOR: McVey; ASSISTANT PROFESSORS: Johnson, Revell; LECTURERS: Lancaster, Speer, Tucker.

20. An introduction to modes, to genres, and to the writing of expository prose.
3 hours.

24. Forms Of Fiction. An introduction to the study of (1) a selection of fiction ranging from the Greek epic to the modern novel, including both short and longer forms; (2) a variety of fictional modes and narrative techniques.
3 hours.

26. Forms Of Drama. An introduction to the study of (1) the main principles of dramatic art; (2) selected aspects of dramatic and theatrical history; (3) the major dramatic genres.

30. Comparative Literature. A course of reading in English or in English translations of some of the great books of Western civilization from Homer to Joyce, with particular emphasis on the growth of epic, drama and fiction.
3 hours.

31. Contemporary Literature. An examination of the human condition and the role of art in today's world. The course includes work in all genres: two plays, eight works of fiction, one film, six prose works, three poets, and an anthology of poetry. By "contemporary" is meant primarily writing since 1950.
3 hours.

HONORS COURSES

The following courses are available to any student regardless of program who has at least a C standing in English 20, or English 24 or English 26, or permission of the Department.

300. The Novel. An historical survey of the novel as a genre from Cervantes to the present. Thirteen masterpieces will be studied in detail.
3 hours.

330. Literature Of The 16th Century Excluding Drama. This course is intended to be conducted as a seminar. It is essentially an honours course and is concerned to read widely in the 16th Century. It will cover translations from the Latin of Erasmus and More and selected readings from the early Humanists who wrote in English. Approximately a third of the course is devoted to Spenser. The course provides a background for an understanding of the world which produced Spenser, Shakespeare and Milton.
3 hours.

301. Criticism. A survey of the major critics, as well as problems in terminology and practical criticism.
3 hours.

331. Literature Of The 17th Century Excluding Drama. The first term of this course deals with the poetry and prose of John Donne, Ben Jonson, and those writers influenced by Donne and Jonson. The second term focuses on John Milton (Paradise Lost, Paradise Regained, and Areopagitica). Should enrollment be small enough to permit, then the course will consist primarily of discussion sessions led by students.
3 hours.

332. Shakespeare. This course is devoted essentially to the text of Shakespeare's plays of which 14 are appointed to be read. Although the course is an honours course, it is recommended to the pass student

with an interest in Shakespeare and especially to the student who intends to enter teaching.
3 hours.

333. Medieval To Jacobean Drama (1300-1642). A study of the non-Shakespearian drama between the rise of the miracle-play cycles and the order of Parliament in 1642 that "publike Stage-plays shall cease and be forborne". The course emphasizes the development of English drama and consequently considers the influences of writers upon one another and stage history. The course provides a useful background for the study of Shakespeare or of non-dramatic Renaissance literature.
3 hours.

341. A study of the poetry and prose of the 18th Century with particular emphasis on Pope, Fielding, Richardson, Gray, Johnson, Goldsmith, and Sterne.
3 hours.

350. The Romantic Period (1798-1832). The primary matter of this course is the work of six great poets: Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. Secondary matter consists of three works of prose and fiction. Emphasis will be placed on the historical context of Romanticism.
3 hours.

360. Literature Of The Victorian Period. The course is intended to give a broad cross-section of the 19th century literary events, examining the work of major writers in three genres. The course moves toward a re-assessment of the Victorian mind and its dilemma.
3 hours.

370. Modern Literature (1890-1945). This course examines the major poets and novelists of the modern era. Prosody and style will be emphasized as the main critical concern of the course. But individual works will also be considered as they reflect modern problems, with the intention of discovering those habits of mind peculiar to the early 20th century.
3 hours.

400. Thesis. Individual instruction on the selection of a topic, the research for, and the writing of, a thesis. The thesis course is excellent for a student interested in some particular literary question or problem, for it enables him to pursue this interest in depth. The student and his instructor will arrange to meet a minimum of 25 hours to discuss the student's progress. The final thesis is to be approximately 50 pages long. English 400 is restricted to fourth year honours English students. Those interested must confer with the Chairman of the Huron College Department of English.

DEPARTMENT OF FRENCH

Chairman: - G. A. Black, BA, MA Toronto, PhD Western Ontario
ASSOCIATE PROFESSORS: Black, Metford; ASSISTANT PROFESSOR: Miller; LECTURERS: Marion, Van der Wel.

20. French Language And Literature. This is the basic Freshman course in French, providing training in Language and Literary studies and an introduction to French institutions. In the initial stages, English will be used; thereafter the course will be given in French.
Prerequisite: French 2, 10 or Grade 13 French.
4 hours per week, tutorials and language laboratory.

HONOURS COURSES

232. French Civilization. A study of modern France, her historical background and political, economic, social and cultural development.
3 hours.
Prerequisite: French 20 or by permission of the Department.

271. Language. Grammar, composition, oral practice, phonetics, introduction to Linguistics. (One hour per week in the language laboratory may be required). This course is required for concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 or 4 hours.

290. Introduction To French Literature. A study in depth of texts from the 19th and 20th centuries designed to provide intensive training in the skills of literary analysis. This course is required for concentration in French.
Prerequisite: French 20 or by permission of the Department.
3 hours.

378. Literature Of The 17th And 18th Centuries.
Prerequisite: French 290.
3 hours.

381. Language. Grammar, composition, translation and oral practice. (One hour a week in the language laboratory may be required). This course is recommended for concentration in French.
Prerequisite: French 271.
3 or 4 hours.

398. Literature Of The 19th And 20th Centuries And Of French Canada. Selected authors and texts, one of which must be in French Canadian Literature.
Prerequisite: French 290.
3 hours.

450. Literature To 1600. Selected authors and texts.
Prerequisite: French 396.
3 hours.

DEPARTMENT OF HEBREW

Chairman: - G. H. Parke-Taylor, BA, MA Toronto; LTh, BD, DD Wycliffe
PROFESSOR: Parke-Taylor; LECTURER; Kay

These courses are given in Huron College on behalf of the Faculty of Arts of the Constituent University, and Huron College.

1-10. Grammar. Text of Genesis 1-3; 22; Jonah.
5 hours, Language Laboratory - Israeli Hebrew.

20. Introduction To Hebrew Narrative And Poetry. Text of II Samuel 9-20; I Kings 1-2. Selected Psalms.
Prerequisite: Hebrew 1-10.
3 hours.

30. Hebrew Prophetic Literature. Selections from Amos, Isaiah of Jerusalem, Jeremiah, and Deutero-Isaiah. Introduction to Gunkel's **Formgeschichte** and **Gattungskritik.**
(Offered in alternate years - not offered 1973-74).
Prerequisite: Hebrew 20.
2 hours.

40. Hebrew Text Of The Psalms. Principles and forms of Hebrew poetry. Studies of representative Psalms. Gunkel's **Gattungen** and Mowinckel's cultic **Psalmenstudien.**
Prerequisite: Hebrew 20.
2 hours.
(Offered in alternate years - offered 1973-4).

DEPARTMENT OF HISTORY

Chairman: G. L. Owens, BA, MA Nebraska; PhD Wisconsin.
PROFESSOR: Henderson; ASSISTANT PROFESSORS: Blocker, Owens, Roper.

20. Modern Europe. 1715 to the Present. Analysis of the evolutionary and revolutionary development of Modern Europe, with intensive treatment of the great landmarks in the formation of Western society and culture.
3 hours.

22. Studies In American History. Intensive study of specific incidents in U.S. history aimed at learning the critical use of historical sources. Topics vary but may include such as: the Salem witchcraft controversy; the Brook Farm community; the Sacco-Vanzetti trial; the People's party national convention of 1896.
3 hours.

25. Canada. A survey from the beginning of the French Régime to the present. Not open to students holding credit for History 31 or 231.
3 hours.
(Limited enrollment).

32. England To 1688. A survey of English History from the Anglo-Saxons.
3 hours.

Honours Courses

232. Canada. From the beginning of the French Régime to Confederation.
3 hours.

233. Canada. From Confederation to the Present.
3 hours.

234. The United States, Colonial Period To The Present. Emphasis first term upon the mergence of the American nation, the equalitarian impulse, national expansion and sectional conflict; second term, upon the great transformations of the modern era; the growth of industrialism, big government, a pluralistic society, and international predominance.
3 hours.

236. Europe And England In The 16th And 17th Centuries.
3 hours.

335. England, 1715-1914. A study of English history in the 18th and 19th centuries, stressing as a central theme the development of the modern state. The course will be based mainly on the writings of the following contemporary authors: Locke, Bolingbroke, Burke, Adam Smith, Paine, Bentham, James Mill, Engels, Robert Owen, Newman, and the Fabian Essaysists.
3 hours.

432. England, 1399-1642. A political, social and constitutional study of England from the 15th century to the mid-17th century.
3 hours.

434. The United States, 1841-1901. The Prelude To Modern America. Emphasis on economic, social and constitutional developments against the general background of the period.
Prerequisite: History 234 or 34, or permission of the instructor.
3 hours.

MATHEMATICS

LECTURER: Smet

20. Introductory Calculus And Algebra. An introduction to calculus; a study of logic, set theory, probability theory, and the algebra of vectors and matrices.
Prerequisites: Mathematics 10; or Grade 13 Mathematics A; or Grade 13 "Calculus" plus either Grade 13 "Algebra" or Grade 13 "Relations and Functions".
3 hours.

DEPARTMENT OF PHILOSOPHY

Chairman: R. P. Miller, BA Cornell, BPhil Oxon., MA Michigan
ASSISTANT PROFESSORS: Miller, Schacter LECTURERS: Willing, Irvine

20. A course based on the theme of "reasoning" which begins with a study of some basic tools of reason, moves into the philosophical foundations of experimental reasoning, and concludes with a discussion of the possibility of reasoning in moral matters. The course is specifically directed at training the student in the techniques of rational thought.
3 hours.

30. A survey of the history of philosophy, this course begins with the reading of several Platonic dialogues, proceeds to classic works out of the seventeenth and eighteenth centuries, and concludes with some readings representative of the twentieth century.
3 hours.
(Offered according to demand).

31. Logic. This course concerns the two main modes of reasoning: deductive and inductive logic. The first half will be devoted to modern truth-functional logic and the foundations of symbolization, logical translation, and validity. The second half will cover the foundations of probability and induction.
2 hours.

32. A course applying the tools of philosophical analysis to selected significant works of fiction. Broken up into three parts, the course will cover: (1) Man in relation to the cosmos: Stendahl, Kafka, Camus; (2) Man in relation to the State: Dostoievsky, Koestler, Malraux; (3) Man in relation to others: Celine, Kosinsky, Golding.
2 hours.
(Offered alternately with Philosophy 38 - not offered 1973-4).

36. Ancient Philosophy. This introductory survey is designed to (a) acquaint the student with some of the major philosophical problems to which the Ancients addressed themselves, and (b) to develop an appreciation of some of the key classical writings on these problems. Pre-Socratics, Socrates, Plato, Aristotle and post-Aristotelian philosophers will be studied.
2 hours.

37. Social and Political Philosophy. An introduction to some main topics in social/political philosophy - e.g. political authority and obligation, law and morality, punishment. Readings are drawn from classical and contemporary sources with a view to developing both an appreciation of historical perspective and familiarty with current political thought.
2 hours.

38. This course deals with the writings of four selected representatives of the Existentialist movement, Kierkegaard, Nietzsche, Sartre, and Camus. The course stresses the thematic continuity not only between the above philosophers, but also with other writers belonging to the same tradition.
2 hours.
(Offered alternately with Philosophy 32. Offered 1973-4).

42. Ethics. A critical study of the fundamental issues of morality, with reference to classic and contemporary writers. The aim of the course is to provide an understanding of the nature of ethical systems and theories and the extent to which ethics can be rationally justified and evaluated.
2 hours.

43. Philosophy of Religion. Students of Philosophy 20 who found themselves interested in the confrontation between reason and religion should take Philosophy 43, a basic course in the application of reason to important religious questions: e.g. Does God

exist? Is there life after death? Are religious claims verifiable? Emphasis will be placed on the methods of contemporary philosophical analysts in the examination of these problems.
2 hours.

44. Philosophy of Psychology. This course will be devoted to an examination of the fundamental principles of scientific method and the application of these principles in psychology. Several major figures in psychology, Freud and Pavlov for example, will be studied from this point of view. Designed for psychology majors.
Prerequisite: Psychology 22 or permission of the instructor.
2 hours.

47. Early Modern Philosophy. This course covers the philosophy of the 17th and 18th centuries, and concentrates on the issues between Rationalism and Empiricism. The division between these two views is probably the most important and certainly the most pervasive issue in intellectual history. Authors studied include Descartes, Spinoza, Locke, and Hume.
2 hours.

49. Philosophy and Literature. The aim of this course is to provide students with an understanding of certain philosophical themes which are important, not only in their own right, but also for their influence on literature. Each term philosophy will receive particular emphasis; literature will then be examined in the light of philosophy.
3 hours.

251. Logic. An introduction to symbolic logic and meta-logic. Topics will include the propositional calculus, quantification, the nature of deductive systems, probability, and inductive logic. Time will also be spent on questions of the justification, usefulness, and applicability of deductive and inductive reasoning.
2 hours.

254. Theory of Knowledge. The purpose of this course is two-fold. First, the course is designed to acquaint the student with several important concepts and issues in epistemology. Such topics as the analytic-synthetic distinction, the problem of perception, synthetic a priori truth, induction and probability, and systems of knowledge will be covered.
2 hours.

256. Ancient Philosophy. This course is designed to acquaint the student with some of the major philosophical problems to which the Ancients addressed themselves, and to develop an appreciation of some of the key classical writings on these problems. Pre-Socratics, Socrates, Plato, Aristotle and post-Aristotelian philosophers will be studied. This course will involve an intensive study of some of the metaphysical and epistemological problems discussed by the Ancients. Emphasis will be on Plato and Aristotle.
2 hours.

257. Early Modern Philosophy. This course covers the philosophy of the 17th and 18th centuries, and concentrates on the issues between Rationalism and Empiricism. The division between these two views is probably the most important and certainly the most pervasive issue in intellectual history. Authors studied include Descartes, Spinoza, Locke, and Hume.
2 hours.

362. Ethics. In addition to the critical examination of major ethical theories, attention will be paid to important meta-ethical issues such as free will, cultural relativism, and egoism. The aim of the course is to provide an understanding of various ethical theories and of the extent to which they can be compared and evaluated.
2 hours.

474. Problems of Philosophy. Phenomenology and Meta-politics. This course will concern itself not with social-political theories per se, but

rather with the concept of a political theory in general. The approach will be continental and phenomenological rather than Anglo-American and analytical. The course will be broken in three parts, (1) readings of Hellenic history, phenomenology, and Marxism, (2) Hannah Arendt's **The Human Condition**, and (3) the application of the conceptual vocabulary developed by Arendt to selected political writers of recent times.
2 hours.

POLITICS

LECTURER: Whittingham

20. Introduction to Political Science. A study of the principal concepts, ideas and analytical methods of modern political science, with emphasis on the political systems of Canada, the United States and Britain.
3 hours.

DEPARTMENT OF PSYCHOLOGY

CHAIRMAN: M. S. Sansom, BA Mount Allison, BA New Brunswick, BLS Toronto, PhD London

PROFESSOR: Burd ASSOCIATE PROFESSOR: Sansom ASSISTANT PROFESSOR: Cole LECTURERS: Carruthers, Csapo, Dalrymple, Harris, Thomas

Students in the fifteen-course general program wishing to graduate with an approved area of concentration in Psychology at Huron College must receive the permission of the Huron College Department of Psychology and earn credit in at least four honours Psychology courses or their equivalent in half courses. The student must include Psychology 283a (half-course); two of Psychology 208, 265, 275; one and one-half other senior honours courses in Psychology. A minimum mark of 60% is required for credit in each of the courses counting towards an area of concentration.

22. Method in General Psychology. An introduction to scientific method applied to psychological questions. Emphasis is placed on the development of skills in first-hand observations, experimentation, and the treatment of data, leading into the design of original studies and the critical analysis of work reported in the professional literature. Supporting content areas, which are an integral part of the course, include: learning, motivation, perception, physiological processes, developmental processes, psychological measurement applied to intelligence and personality.
2 lecture hours, one laboratory hour.
Students taking Psychology 22 may not take Psychology 20 for credit. Psychology 22 is normally a prerequisite for all other senior courses in Psychology offered at Huron College..

The following courses, Psychology 71 and 98, are general courses. They are meant as optional courses for students whose major interests lie in disciplines other than Psychology. They may be taken by students with an area of concentration in Psychology but they cannot be counted towards the area of concentration

71. Human Adjustment. Theories of adjustment and conflict, research findings, and applications. Discussion of variables that affect the behavioural adaptation of humans to their environment. Milder forms of adjustive problems emphasized in terms of their acquisition, maintenance and change.
3 hours.
Offered in alternate years - offered 1973-4.

Cannot be taken for credit if Psychology 48, 79, 252, or 448 has been successfully completed

98. Methods and Theory in Psychology. The historical origins of psychological theories, concepts, and methods, a survey of the growth and sources of psychological thinking. Emphasis will be given to a philosophically oriented examination of the structure and methodology of the social sciences in general and psychology in particular.
Prerequisite: Psychology 22 or permission of the instructor.
2 hours.
This course is taught as an interdisciplinary course with the Department of Philosophy at Huron College. Students may receive credit for either Psychology 98, or Philosophy 44 but not both.

HONOURS COURSES

The following courses are offered by Huron College. For the additional honours courses offered by the University, please see the Department of Psychology section in the Faculty of Social Science.

204b. Human Learning. Behaviour Modification. This course will deal with the application of psychological principles, mainly those of classical and operant conditioning and of social learning, to bring about behaviour change in various contexts, especially clinical and educational. Topics will include the major techniques in current use, such as systematic desensitization, and token economies, and related practical, theoretical, and ethical issues.
Prerequisite: Psychology 22 and 208. May be taken concurrently with Psychology 208.
2 lecture hours, 2 seminar hours.
Psychology 204b cannot be taken for credit if Psychology 54b has been successfully completed

208. Method and Theory in Learning and Motivation. A critical examination of the basic facts and theories of learning and motivation with emphasis on experimental designs and research methods.
Prerequisite: Psychology 22. Psychology 283a must be taken either before or concurrently with this course.
2 lecture hours, 2 laboratory hours.
Psychology 208 cannot be taken for credit if Psychology 32, 35, 51a, 53b, 95, 201a, 203b, or 235 has been successfully completed

241. Developmental Psychology: Basic Principles. A general examination of theory and research in developmental psychology from the prenatal period to early adolescence. The course considers child growth in terms of learning, perception, cognition, emotional and social development, and attempts to integrate these in relation to personality theory. Students will be responsible for a summary examination, a major research paper and at least one seminar.
Prerequisite: Psychology 22.
2 lecture hours, 2 hours to be assigned by the instructor.
Psychology 241 cannot be taken for credit if Psychology 36, 56, or 236 has been successfully completed

243b. Mental Retardation: Research and Theory. A detailed examination of the definition, diagnosis, classification and etiology of mental retardation. The many subtypes of mental retardation will be examined from biomedical, genetic and sociocultural viewpoints. At the level of behavioral analysis, emphasis will be placed upon recent psychological research and theory along with their implications for remedial education and treatment.
Prerequisites: Psychology 22 and 241 or the permission of the instructor. Psychology 241 and 243b may be taken concurrently.
4 hours.

253. Theories of Personality. An examination of the systematic problems of personality theory. A major part of the first term consists of intensive study of the historical development of Freudian psychoanalysis based on a detailed examination of fifteen major works and essays. The second term is devoted to extended class seminars on nine other representative personality theorists.
Prerequisite: Psychology 22 or Psychology 20 (University).
2 lecture hours, 2 hours to be assigned by the instructor. Offered in alternate years with Psychology 254b. Not offered 1973-4.
Psychology 253 cannot be taken for credit if Psychology 31, 94, 77b, 251, 331 or 450 has been successfully completed

254b. Psychoanalysis and Psychology. A detailed examination and evaluation of Freudian psychoanalytic theory with especial attention to its relation to child development and its influence in general psychology.
Prerequisites: Psychology 22 or Psychology 20 (University), or permission of the instructor.
4 hours.
Psychology 254b cannot be taken for credit if Psychology 31, 94, or 253 has been successfully completed

255b. Psychological Tests in Applied Research. A detailed examination and evaluation of the commonly used objective and projective measures of psychological variables in educational, industrial and applied social research. Consideration of the ethical implications of such research for prediction and selection.
Prerequisites: Psychology 281 or 283a.
4 hours.

265. The Individual in Education and Work. The uses of Psychology in the problems of individuals engaged in formal education and modern industry, with attention to the historical context of these problems. Three original research studies demonstrating competence in scientific method and familiarity with the literature are required.
Prerequisite: Psychology 22. Students taking the course must take Psychology 283a either before or concurrently.
2 lecture hours.
Offered in alternate years. Not offered 1973-4.
2 hours to be assigned by the instructor.
Psychology 265 cannot be taken for credit if Psychology 46, 81, 95, 264, 354 or 446 has been successfully completed

275. Selected Basic Problems in Social Psychology. A research oriented course in social psychology offering concentration in the methods and content of two major areas of social psychology, small group structure and functioning, and the measurement, change, and development of social attitudes.
Prerequisite: Psychology 22. Students taking this course must take Psychology 283a either before or concurrently.
2 lecture hours, 2 hours to be assigned by the instructor. Offered in alternate years. To be offered 1973-4.
Psychology 275 cannot be taken for credit if Psychology 32, 49, 72, 97, 271 or 349 has been successfully completed

283a. Research in Psychology. An advanced treatment of the collection, analysis and interpretation of behavioural data, reviewing and extending the topics covered in Psychology 22; problems in the design and conduct of studies and experiments, operational definitions, experimental control and recording of behaviour; statistical treatment of data, including descriptive and inferential statistics.
Prerequisite: Psychology 22.
2 lecture hours, two laboratory hours.
Psychology 283a cannot be taken for credit if Psychology 63, 255, or 281 has been successfully completed

342. The Exceptional Child. This course will be an in-depth study of the exceptional child. The format will be seminar and in the seminars the area will be considered in four sections: (a) intellectual endowment (retardation and giftedness), (b) physical disability including aural and oral handicaps, (c) neurological impairment, and (d) emotional and social disturbances. Each student will be required to do a project, a major essay, and a summary examination besides giving at least one seminar. The course will consider the aetiology, diagnosis, management and education of the exceptional child.
Prerequisites: Psychology 22 and 241.
2 lecture hours, 2 hours to be assigned by the instructor.
Psychology 342 cannot be taken for credit if Psychology 39, 59, or 242 has been successfully completed.

DEPARTMENT OF RELIGIOUS STUDIES

Chairman: J. G. Morden, BA, Toronto; LTh, BD, DD Wycliffe; STM Union Theological Seminary, DTh General Theological Seminary, N. Y.
PROFESSOR: Morden ASSOCIATE PROFESSOR: Allen LECTURERS: Irvine, Kay, Rousom

20. A study of great personalities in the Judaeo-Christian tradition, and modern religious leaders by the biographical method. An examination of their effect on social, political and religious action.
2 hours.

29. An Introduction to New Testament Greek.
2 hours.

30. An Introduction to the Living Religions of the World. A study of the history, faith, and practices of the major living religions - Hinduism, Jainism, Buddhism, Confucianism, Taoism, Shintoism, Zoroastrianism, Judaism, Christianity, and Communism.
2 hours.

31. Religion, Society, and Morality. An approach to some contemporary social and moral issues as these relate to certain religious beliefs in the Judaeo-Christian tradition. Social and moral themes selected for discussion include justice and the "just" society, grounds for civil disobedience, equality, the institution of marriage and human sexuality.
2 hours.

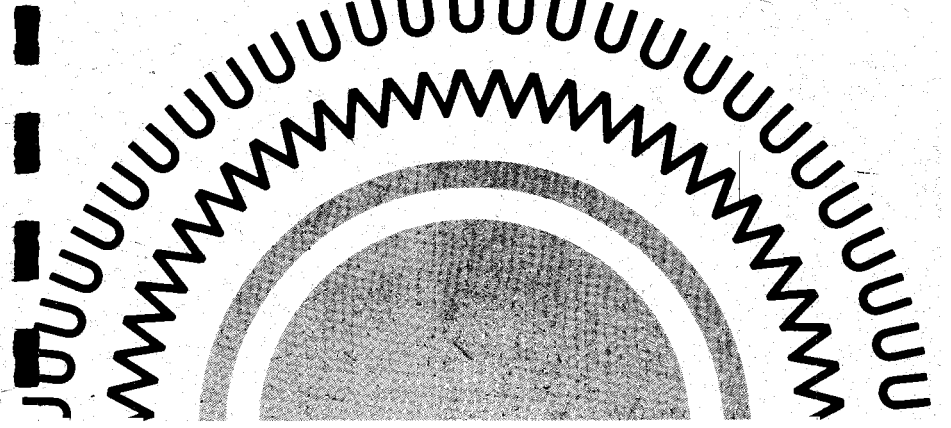
36. The Jewish Experience. The Jews, their Jewishness and their Judaism. The Biblical, mediaeval and modern period will be studied with particular reference to the relationship of the Jewish society to some of the peoples and societies among whom they have lived.
2 hours.

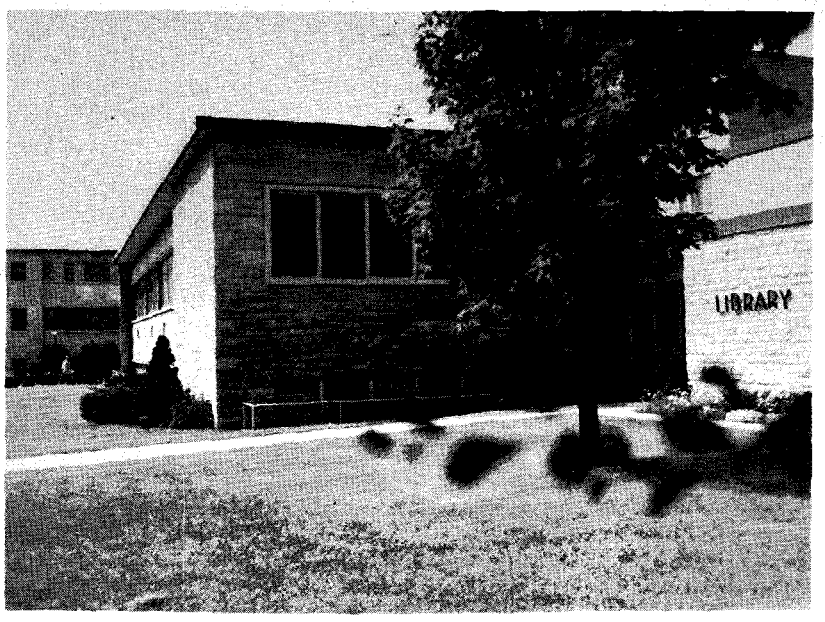
38. An Introduction to Biblical Process Thought. Is God fact or fiction? How is he related to this world? A lecture and discussion course designed to examine objectively the biblical world outlook, the distinctively Hebrew experience that produced it. A discussion of key biblical concepts in terms of the thought of Whitehead, Teilhard de Chardin, Bultmann, Tillich, and others.
2 hours.

39. The Principles of Christian Theology. A survey of Christian beliefs, with an emphasis on Anglican and Protestant theologians of the 20th Century. The course will include an introduction to the theological method and authorities followed by a survey of the doctrines of the Church as they appear in the ecumenical creeds.
2 hours.

44. 20th Century Theological and Philosophical Problems. A seminar designed to exhibit clearly the rational basis of the radical transformation of theology in the 20th Century. The literature of contemporary analysis will be examined as it bears on specific topics, e.g., the existence of God, Order and Design, Meaning and Mortality, Religious Experience and Authority. The latter part of the course will be a critical scrutiny of some contemporary responses to the problems posed.
2 hours.

King's College





Principal and Dean:
A. F. McKee, BA, MA New Zealand: DUP Paris; MSc (Ec.) London
Assistant Dean (Academic):
J. R. Goutor, BA Allegheny; MA, PhD Illinois
Assistant Dean (Student Affairs):
G. J. MacWillie, BA Sir George Williams; BD Presbyterian College; MA, PhD Alberta
Registrar:
J. H. Campbell, BA St F X; BEd, MA UNB
Assistant Registrar:
C. D. Dutrizac, BA, MA UWO
Librarian:
P. D. Mitchell, BA, BLS McGill
Controller:
H. E. Leeks, R.I.A

Address for Correspondence:
266 Epworth Avenue, LONDON, Ontario
N6A 2M3
Phone: 433-3491

King's College

MEMBERS OF THE FACULTY OF KING'S COLLEGE

Dean

McKee, A. F., BA, MA New Zealand; DUP Paris; MSc Ec. London.

Professors

Goutor, J. R., BA Allegheny; MA, PhD Illinois — *History.*

Havelka, J., BA, MA Masaryk; PhD Milan; MSc McGill — *Psychology.*

Lenardon, D., BA, BEd Alberta; MA, PhD Toronto — *Romance Languages.*

Murphy, R. T. A., (The Very Reverend) OP, STD Angelicum; SSD Biblical Commission; STM Dominican Order — *Religious Studies.*

Ring, W., (Reverend), BA UWO; PhL Laval — *Philisophy.*

Associate Professors

Cavanagh, P. E. (Reverend), BA UWO; MA Toronto; PhD Notre Dame — *Philosophy.*

Crunican, P. E., (Reverend), BA UWO; MA, PhD Toronto — *History.*

Graveline, R. A., (Reverend), BA UWO; PhL, STL Laval — *Philosophy and Religious Studies.*

Plum, G. E., BS Wayne State; PhD Chicago — *Social Welfare.*

Ryan, M., (Reverend), BA UWO; MA, PhD Notre Dame — *Philosophy and Religious Studies.*

Smith, T., BA St. Mary's; MSSW Maritime School of Social Work and St. Mary's — *Social Welfare.*

Snyder, J. J., BA Notre Dame; MA, PhD Toronto — *Philosophy.*

Toop, R., BA, MA, PhD Toronto — *English.*

Assistant Professors

Bahcheli, T. S., BA, MA UWO; PhD London — *Political Science.*

Brown, Trudy (Mrs.), BA Ottawa; MSW Carleton — *Social Welfare.*

Canzona, L., BA, BSW, MSW, DSW Toronto — *Social Welfare.*

Donohue, J. J., (Reverend), BA UWO; STL Gregorianum — *Religious Studies.*

De Fabry, Anne Srabian, BA Houston; MA, PhD Rice — *French.*

Denys, Jozef, (Reverend) BA, BTh UWO, MA Windsor; PhD Waterloo — *Sociology.*

Herrick, J. M., BA St. John's; MA, PhD Minnesota — *Social Welfare.*

Hill, Mary B. R., BA McMaster; MA McGill; PhD New York; ARCT Toronto; LTCL Trinity College, London — *Sociology.*

Koop, P. A., BComm Manitoba; MBA Toronto; PhD Southern California — *Economics.*

MacWillie, G. J., BA Sir George Williams; BD Presbyterian College; MA, PhD Alberta — *Psychology.*

Miner, E., BA Toronto; BAHons London; PhD Notre Dame — *English.*

Mueller, P., PhB, STB, STL Gregorianum; PhD Fordham — *Religious Studies.*

Mulcahy, Gloria, BA San Jose State; MS Washington State; PhD Univ. of Maryland — *Psychology.*

Orange, J. C., BA, MA, PhilM Toronto — *English.*

Paterson, G. H., BA, MA, PhilM, PhD Toronto — *English.*

Prieur, M. R., (Reverend), BA UWO; STD San Anselmo — *Religious Studies.*

Schmeiser, J. A., BA Saskatchewan; MA, MTH, STL Ottawa; Dipl. Liturg. Trier; PhD (D.Th.) Ottawa — *Religious Studies.*

Seebaran, R. B., BA, BSW, MSW British Columbia — *Social Welfare.*

Skinner, N., BA, BSc, MSc, PhD Alberta — *Psychology.*

Webb, P. L. C., BA, MA UWO; M.Litt Cambridge — *History.*

KING'S

Lecturer

Fric, L., BA, MA Manitoba — *Economics.*

Part-Time Faculty

Casper, J., (Reverend), BA, BPh, MTh, STL Ottawa; MA Windsor — *Religious Studies.*
Cudmore, G., BA Hons. UWO — *Business.*
Dunn, S., (Reverend), BA, MT, STL Ottawa; STD Lateran — *Religious Studies.*
Hanna, E., DSW Smith College — *Social Welfare.*
Jaco, Rose Marie, BSW St. Patrick's, Carleton — *Social Welfare.*
Kirby, D. M., BA, MA UWO — *Psychology.*
Rodensky, R. L., BA Pennsylvania; MA Rhode Island — *Psychology.*
Scapinello, K., BA, MA Guelph — *Psychology.*
Smith, M., (Reverend), STB, BTh, MTh Ottawa — *Religious Studies.*
Watson, B., BA MA UWO — *Mathematics.*
Zentner, E., MSW Rutgers — *Social Welfare.*

GENERAL INFORMATION

King's College is a co-educational undergraduate college of liberal arts and social sciences sponsored by the Roman Catholic Diocese of London and open to students of all beliefs.

The college is situated on Epworth Avenue at Waterloo Street, two blocks from the main entrance to the University. An inter-lecture bus service operates between the College and the main campus. This service permits a valuable integration of courses given in various parts of the University.

The principal building houses faculty, student, and administration offices; classrooms; chapel; cafeteria; lounges; and the women's residence. Three separate buildings provide residence accommodation for 200 men. The College library houses some 35,000 volumes. As members of The University of Western Ontario community, King's students have full privileges at Western's libraries. The Theology Department of St. Peter's Seminary, located within short walking distance, provides further course and library facilities available with some restrictions to King's College students. Students at King's College also share the services offered students of The University of Western Ontario: athletic facilities, teams, clubs, employment services, voluntary military training, and many others.

ACADEMIC INFORMATION

The General Program in Arts and Social Sciences and some Honors Programs are offered at King's College. The courses which make up these programs follow the same prescriptions as the courses taught at the Constituent University.

The University of Western Ontario four-year Social Welfare Program leading to a BSW degree is offered at King's College exclusively.

Upon successful completion of the first two years at King's College, students transfer into Year III of the Western School of Business Administration Program.

Degrees are granted by The University of Western Ontario.

COURSES

Besides the courses listed below, which are offered on the King's Campus, a student may take any course or courses at the Constituent University to complete his desired program. It should be noted that one tuition fee covers all courses the King's student may wish to take. A student registered at King's must take at least two courses within the College each year unless special permission is granted by the Dean.

If a course is listed by title and number only, it is also taught at the Constituent University, and its full description will be found in the pertinent section of this Calendar under the general University listings. If a course is followed by a complete description, it is taught at King's College only, has full academic credit at The University of Western Ontario, and is open to all Western students.

20. Business - Introduction to Business.

20. Economics - Introduction to Economics.

30. Economics - Intermediate Microeconomic Theory.

33. Economics - Money and Income.

36. Economics - Labour Economics.

37. Economics - Economic History of Canada.

38. Economics - Economic Development.

20. English - General Literature and Composition.

24. English - Forms of Fiction.

26. English - Forms of Drama.

30. English - Comparative Literature.

31. English - Contemporary Literature.

38. English - Canadian Literature and Culture.

300. English - The Novel.

332. English - Shakespeare.

360. English - Literature of the Victorian Period.

370. English - Modern Literature (1890-1945).

371. English - Modern Drama.

381. English - Canadian Literature.

20. French - French Language and Literature.

232. French - French Civilization.

271. French - Language.

290. French - Introduction to French Literature.

378. French - Literature of the 17th and 18th Centuries.

20. History - Modern Europe, 1715 to the Present.

21. History - Totalitarianism in the 20th Century
(Not offered in 1973-74).

25. History - Survey Course in Canadian History.

26. History - The Two World Wars.

34. History - The United States, Colonial Period to the Present.

35. History - England since 1688
(Not offered in 1973-74).

36. History - Modern Europe, 1500-1700
(Not offered in 1973-74).

60. History - Selected Problems in American History
(Not offered in 1973-74).

70. History - Selected Problems in European History, 1914 to the Present.

231. History - Canada.

232. History - Canada to 1864
(Not offered in 1973-74).

233. History - Canada since 1864
(Not offered in 1973-74).

234. History - The United States, Colonial Period to the Present.

335. History - England, 1715-1914.

346. History - Modern France from 1715 to the Present.

444. History - The United States in the Twentieth Century
(Not offered in 1973-74).

36. Italian - Italian Literature in Translation.

20. Mathematics - Introductory Calculus and Algebra.

20. Philosophy - Introduction to Philosophy.

33. Philosophy - Thomistic Philosophy. An introduction to the philosophy of Thomas Aquinas through a study of several of his basic philosophical writings. The course will concern principally his philosophy of nature, philosophical psychology, moral philosophy, metaphysics and philosophical theology. Brief consideration will also be given to some later forms of Thomism.

38. Philosophy - Existentialism.

41. Philosophy - Aristotelian Logic. A study of Aristotelian Logic with special emphasis on the various uses of words, along with a thorough examination of the nature of definition, proposition, and the different types of argumentation, both deductive and inductive. An intensive study of fallacies in argumentation is also made. Likewise included is an evaluation of the methodology of the sciences, both nonexperimental and experimental.

42. Philosophy - Ethics.

43. Philosophy - Philosophy of Religion.

45. Philosophy - Political Philosophy. Critical readings from selected original sources of the political thought of ancient, modern, and contemporary thinkers.

20. Politics - Introduction to Political Science.

30. Politics - Canadian Government and Politics.

31. Politics - International Politics.

20. Psychology - Introduction to Psychology.

56. Psychology - Child Development.

81. Psychology - Humanistic Psychology and Its Applications.

241. Developmental Psychology: Basic Principles. Cannot be taken for credit if Psychology 36, 56 or 236 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

251. Psychology - Personality Theory and Research. Cannot be taken for credit if Psychology 31, 77b, 78a, 331, or 450 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

252. Psychology - Abnormal Psychology. Cannot be taken for credit if Psychology 48, 71, 79, or 488 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.
Prerequisite: Psychology 251 or its equivalent.

261b. Psychology - Education Psychology. Cannot be taken for credit if Psychology 82b has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

266. Psychology - Therapeutic Counselling. Professional counselling and psychotherapy; various processes and techniques of therapeutic counselling; special relationship problems; transference, resistance; interpretation techniques and group counselling; special areas of application of psychotherapeutic counselling: marriage, family, human relations in education and in industry, counselling and problems of values.
3 hour Lecture, 1 hour Tutorial.
Prerequisite: Psychology 251 (formerly Psychology 31 or 78a, 77b) or Psychology 252 (formerly Psychology 79 or 48) or permission of the instructor.

271. Psychology - Social Psychology. Cannot be taken for credit if Psychology 32, 49, 64, 72 or 349 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

272a. Psychology - The Psychology of Prosocial and Antisocial Behaviour. Cannot be taken for credit if Psychology 73a has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

281. Psychology - Research Methods and Statistics. Cannot be taken for credit if Psychology 63 or 255 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

333. Psychology - Psychology of Creativity. Origins of imaginative thinking; perceptions, emotions, memory, language and symbolic expressions in creative processes; child's intellectual functions and creative potential; psychopathology and creativity; theories of psychology of art; assessing the creative thinking; criterion and prediction studies; creativity in special fields and settings; scientific and artistic creativity.
3 hour Lecture, 1 hour Tutorial.
Prerequisite: Psychology 251 (formerly Psychology 31 or 78a, 77b) or permission of the instructor.

344a. Psychology - Developmental: Social and Emotional. Cannot be taken for credit if Psychology 57a has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

345b. Psychology - Developmental: Language and Cognition. Cannot be taken for credit if Psychology 58b has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

353. Psychology - Tests and Measurements. Cannot be taken for credit if Psychology 37, 62, or 337 has been successfully completed.
3 hour Lecture, 1 hour Tutorial.

378a. Psychology - Special Topics in Social Psychology: Social Behaviour and Personality.
3 hour Lecture, 1 hour Tutorial.

379b. Psychology - Special Topics in Social Psychology: The Psychology of Meaning and Values in Interpersonal Relations.
3 hour Lecture, 1 hour Tutorial.

21. Religious Studies - The Bible and Belief Today. An investigation of the problems encountered by the modern mind in accepting the Bible. The approach combines history, literary analysis, archaeology and biblical theology.

32. Religious Studies - Contemporary Moral Problems. A critical examination of contemporary moral attitudes and standards. An attempt to present a Christian approach to some recent moral issues, such as sex, drugs, mass-media, money, politics, war, segregation, etc.

33. Religious Studies - Catholic Belief Today. A study of the dogmatic teachings and liturgical practices of the Catholic Church, with an examination of current developments in the light of their biblical, patristic and mediaeval backgrounds.

35. Religious Studies - Comparative Christian Religions. A study of the theological issues at stake in the division of Christendom; approaches to Christian unity; Ecumenism.

40. Religious Studies - The Theology of Marriage. A study of marriage considered from the psychological, moral, social and theological points of view.

41. Religious Studies - Man in Religious Experience and Celebration. An examination of the importance of celebration, festival, fantasy and wonder for contemporary man. A study of the relationship of Christianity and other world religions to this dimension of man's awareness and activity.
PREREQUISITE: Permission of the instructor.

46. Religious Studies - Christian Social Theory. The modern and contemporary teachings of the Christian Church on social justice, wages, property, work, poverty, social reconstruction, etc. The course will examine the thought of leading theorists and its application to contemporary society.

48. Religous Studies - Systematic Moral Theology. Introduction to general moral theology; nature and task of moral theology, Biblical moral theology, historical over-view of moral theology, natural law, virtue of prudence, sin, human act.

20. Sociology - Introduction to Sociology.

30. *Sociology - Sociological Theory
Proposed, 1973-74.

31. Sociology - Research Methods and Statistics.

37. Sociology - Sociological Survey of Religious Institutions. An analysis of the function of religion, the relationships between religion and other social institutions and organized religious bodies.

39. *Sociology - The Family.
Proposed 1973-74

40. Sociology - Social Problems.

43. Sociology - Minority Groups.

SOCIAL WELFARE

Courses offered by the Social Welfare Department are part of an integrated liberal arts curriculum leading to a first professional degree. The program is designed to provide knowledge relevant to rational, autonomous and socially competent behavior as well as knowledge relevant to social work practice and the broad field of social welfare; it seeks to help students to become responsive to the humanistic values shared by all of the helping professions; it is oriented to developing the intellectual skills and analytic ability required to engage in fundamental social work practice and to introduce students to a variety of practice skills which are applicable to what is generally known as "social work methods". Students are therefore prepared for professional careers in Social Work. The educational aims of the curriculum go beyond the rendering of service to a concern with the social conditions of service and the societal implications of the organizational forms of service.

Requirements for Admission

Admission requirements from Grade 13 are those of The University of Western Ontario. Prospective Social Welfare students should meet the requirements for admission to the first year of the General Arts or Social Science Program. The five-course first year program should include Social Welfare 20 and at least one other Social Science course, preferably Psychology 20 or Sociology 20. In order to give students ample time to consider a social service career and to become acquainted with social work and other university courses, students do not register in the Social Welfare Program until the second year of university. A University of Western Ontario student will be eligible to apply for admission to Year II of the four-year Social Welfare Program if he meets the following standard: A grade of 70% in Social Welfare 20 and an average of 70% in other subjects; or an over-all average of 70% if he has not taken Social Welfare 20 in the first year. Consideration may be given to students with an average of 70% in three courses who also possess unusual personal qualifications. Such students must have a passing grade in all other courses. A student wishing to transfer into the Program from another university must have successfully completed his first year having achieved grades at least equivalent to those outlined above.

Enrolment in the Social Welfare Program is limited.

All students seeking admission to the second and subsequent years of the Program are interviewed by the Department. Social Welfare students must register at King's College.

CURRICULUM

FIRST YEAR

Five courses in a General Arts or Social Science Program, which should include Social Welfare 20 and at least one other Social Science course.

SECOND YEAR

Principal Courses

Two Social Welfare Courses from the 200 series

Subsidiary Courses

Three options

THIRD YEAR

Principal Courses

Three Social Welfare Courses from the 300 series

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Three Social Welfare Courses from the 400 series. (Considerable emphasis will be placed on field practice in Fourth Year).

Subsidiary Courses

Two options

The curriculum is designed to give the student a degree of flexibility in his program. It is possible to transfer into the third year of the General BA Program should a student decide not to continue in the Social Welfare Program. In such a case, credit would be retained for all work done in the first two years. It is also possible to enter the Social Welfare Program in Year III providing at least two Social Welfare Courses were taken in the first two years. However, admission to either Year II or III of the Program can only be approved after consultation with the Department.

SOCIAL WELFARE COURSES

20. Introduction to Social Welfare. First Half: contemporary social issues and problems will be examined in relation to existing and proposed legislation, administrative programs and organized services. Within the context of welfare planning and social services, consideration will be given to such problems as rural-urban integration and labour policy; cultural pluralism and social planning, deviant behaviours and the legal system relationships among service organizations and user groups. Second Half: an examination of present-day welfare policy and programs in North America in the light of intellectual, political and legislative antecedents in Europe and North America. Canadian policy and programs will receive special emphasis. A first required course for potential Social Welfare students and for other students wishing to explore the field of Social Welfare.

220. Social Work Methods I. A survey of the ethics and values of the social work profession and their congruence and conflict with general societal values. Social work principles and concepts will be articulated in relation to the knowledge base from which they derive. Settings and sanctions for social work practice will be reviewed and basic processes of problem-solving explored.

230. Contemporary Social Welfare Problems. An examination of contemporary social welfare problems such as "mental health", "juvenile delinquency", "drug addiction", "race conflict", and "homosexuality", in the light of social welfare planning, policy, legislation, and programs of service (not required for students enrolled in the Social Welfare Program).

236. Human Behaviour and Social Environment. A seminar in analysing social functioning in relation to social systems.
General System Theory is employed as a framework for applying information and documents from diverse sources to the understanding of human behaviour in social systems. The objective of the course is to enable social work students to organize diverse material for the purpose of assessing problems and formulating plans for treatment or action.

330. Social Work Methods II. A study of methods and techniques employed by the social work profession in identifying and formulating individual and collective problems and designing and implementing solutions to such problems. Observation of practice in social agencies with the guidance of practitioners and an interdisciplinary team of teachers. Critical examination of observed and recorded social work practice with individuals, families, small groups and community organizations.
(Prerequisites: 20, 220, 236)

334. Comparative Welfare Systems. An analytic comparison of welfare systems. An international survey and analysis of policy, legislation and programs with emphasis on countries with highly developed or rapidly developing industrial capacity. The adaptability of non-Canadian institutions to the objectives of Canadian policy will be explored.
(Prerequisites: 20, 220, 236).

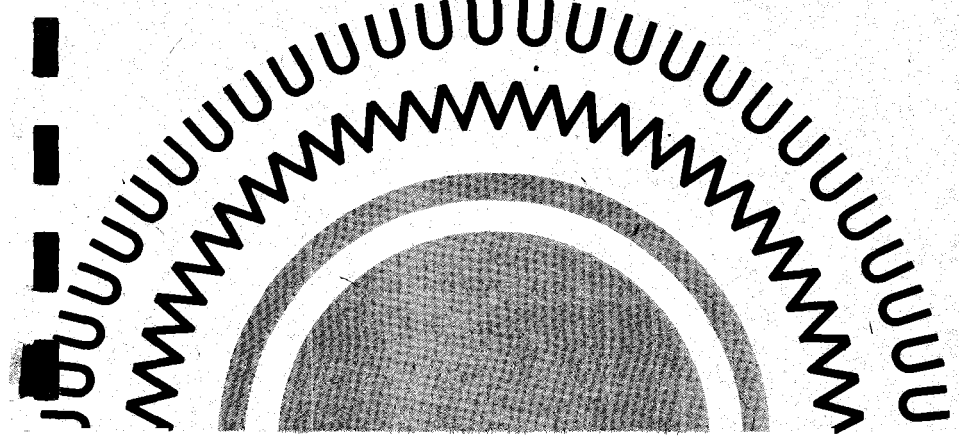
336. Seminar in Theories Applied to Social Work and Social Welfare. Individual and small group tutorials, seminars on special topics and approved research projects entailing the application of social science to social welfare and social work practice.
(Prerequisites: 20, 220, 236).

440. Practicum in Social Work Methods. Sustained rendering of social services in an affiliated social agency or other selected setting with the joint guidance of agency practitioners and department faculty. The course provides students majoring in social welfare with an opportunity to become acquainted, through the rendering of services, with current patterns of practice within existing social agencies.
Skills and techniques for responding to the needs of users of service are developed in twenty-four hours per week of combined preparation and practice.
(Prerequisites: 330, 334, 336).

444. Seminar in Social Work Practice. The seminar is oriented to the further integration of the substance of the Practicum in Social Work Methods and knowledge for practice. Consideration will be given to the conditions of service and the role of the social work profession in affecting the conditions of service.
(Concurrent with 440; same prerequisites).

446. Quantitative Methods in Social Inquiry. Following course 220, students are introduced to the quantitative assessment of social work practice. Research studies and information derived from documents containing material relevant to social welfare are critically examined from the research consumer's point of view. Individual students may elect to concentrate on those studies which are most relevant to one practice modality.
(Prerequisites: 330, 334, 336).

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Faculty of Medicine
Faculty of Music

C) Faculty of Graduate Studies

VII GRANTS

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I Admission Scholarships

An admission scholarship is an award made for academic excellence to a first year student.

1. All students with high academic standing are eligible.
2. Applicants to whom Scholarships are awarded must register for a full year's work in 1973-74. Admission Scholarships may not be deferred and, to retain the privilege of continuing scholarships, the winners must maintain a required degree of proficiency in each year of their academic program.
3. The Admission Scholarships listed below are not tenable in the affiliated colleges (Huron, Brescia and King's College). Students registered in affiliated colleges are eligible for the Queen Elizabeth Scholarships.
4. Applications not required unless otherwise stated.

Association of Professional Engineers Entrance Scholarship

Awarded by the Ontario Professional Engineers Foundation for Education, on the recommendation of the Faculty Council, to the Grade 13 pupil entering the Faculty of Engineering Science with the highest admission average. An award will be made only in cases where a first class honors average has been attained and where the high school course has been completed in five years.

$500

The General Motors Canadian Scholarship

For Canadian citizens on the basis of academic record and all-round ability.

$4,000 ($1,000 a year for a max. of four years)

Harriet M. Giddens Scholarship

For highest ranking student from the City of London, who has not qualified for a more valuable award. The capital fund for his scholarship was bequeathed to the University by the Late Harriet H. Giddens of London.

$400 payable the first year

The London Life Actuarial Scholarship

For a student entering the Honors Mathematics Program, Actuarial Option, based on highest standing in Grade 13 credits with highest standing in Mathematics. If he withdraws from the Actuarial Option he will forfeit the award permanently. **Application required.**

$2,400 ($1,000 a year for a max. of four years)

Queen Elizabeth Scholarships of the City of London (2)*

For the man and woman with outstanding excellence in Grade 13, who have lived in the City of London for at least three years and who have attended secondary schools in the City of London for their three final years, or who have attended a secondary school outside of the city limits, provided that the London Board of Education or the Middlesex County Roman Catholic Separate School board paid for attendance of the pupil at such school outside of the City limits.

$1,000 each payable the first year

The Alexander Charles Spencer Scholarships (5)

$1000 Each Payble The First Year.

Thomas M. Staunton Memorial Awards (3)*

These scholarships were bequeathed to the University by the late Mr. Thomas M. Staunton.
$500 value

The University Women's Club of London Entrance Scholarships

Payable in the first year to a woman candidate.
$500

* Numbers appearing in brackets refer to the number of scholarships, awards etc. available (if more than one is offered)

University of Western Ontario Scholarships

40 at $1,250 each

Sir George Williamson Young Memorial Scholarships (6)

The capital fund for this scholarship was bequeathed to the University by the late George Williamson Young of Port Stanley.
$500 (1st Year $200; 2nd Year $300)

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

II Medals, Scholarships, Awards and Prizes

A) FACULTIES OF ARTS, SCIENCE, SOCIAL SCIENCE AND PHYSICAL EDUCATION SCHOLARSHIPS AWARDED BY THE UNIVERSITY OF WESTERN ONTARIO SHALL BE TENABLE ONLY AT THE UNIVERSITY OR ITS AFFILIATED COLLEGES, UNLESS THE PROVISIONS OF A PARTICULAR SCHOLARSHIP STATE OTHERWISE

The Helen M.B. Allison Gold Medal (c)*

Awarded to a student graduating in the Honors English Language and Literature Program. (Endowed by the Undergraduate Women's Organization.)
Gold Medal

The Alumni Gold Medal (c)

To students graduating in the following Programs: Honors Chemistry, Honors English and French, Honors Music, and the degree Program in Nursing. (These medals were endowed by the Alumni Association of the University.)
Gold Medal

The Angela Armitt Medal

Awarded to a Summer School student with the highest graduating average in a fifteen course program. (Endowed by the Summer School Students' Association)

Gold Medal and $50

The Earl Arscott Memorial Scholarships (4)

For students entering the final year of a three year program in any of the Faculties of Arts, Music, Science and Social Science. (These scholarships were endowed by the Frances Georgina Chadwick Estate.)

$100 each

The Helen I. Battle Scholarship

For highest ranking student in the third year of the B.Sc. in Biology Program who is registered in the fourth year of The Honors Zoology Program. (Endowed by Biology graduates and colleagues.)

$200

The J.P. Bickell Foundation Scholarship

For a student entering the second year of the Honors Geology Program, or the Chemical option of Engineering Science, if he maintains scholarship standing from year to year (The scholarship will alternate between the Faculty of Engineering Science and the Department of Geology.)

$1,500 ($500 a year for 3 years)

The Hon. Edward Blake Scholarship, No. 1

For Honors Economics, second year. Offered in 1973.

$100

Edward Blake Scholarship, No. 2

For Honors Economics, third year. Offered in 1973. The two scholarships above were endowed by the late Major Hume Cronyn, KC, MP, in memory of his uncle, the Hon. Edward Blake, sometime Premier of Ontario and, later, member of the British House of Commons.

$100

The B'Nai Brith Scholarship

For the highest ranking student in Arts or Social Sciences of the General Program, first year, who enters one of the following Programs: English, Ancient or Modern Languages and Literature, or Philosophy. (Given each year by the London Branch of the Order.)

$50

Science Borealis Limited Award

For the student registered in the 3rd year of the B.Sc. in Biology Program who ranked highest in courses offered by The Dept. of Zoology during the 2nd. year of the B.Sc. in Biology Program.

Preference will be given to a student planning to enter the teaching profession. (Endowed by the Science Borealis Ltd. Mississauga, Ont.)

* (c) Indicates that the scholarship, award, etc. is received at Convocation.

Brescia College Advisory Board Gold Medal (c)

For Brescia College students awarded on the basis of the highest A average in the graduating class.

Gold Medal

Brescia College of Arts Award (c)

To a student graduating in the Home Economics Program.

Gold Medal

Brescia College Home Economics Prize, No. 1

For Second Year Clothing (Home Economics 30X).

$25

Brescia College Home Economics Prize, No. 2

For Second Year Foods (Home Economics 32X)

$25

Bruce County Scholarships (2)

One for the man and one for the woman from Bruce County, who stands highest in any year of any regular program in the University. (These scholarships were voted by the Council of Bruce County in June, 1945.)

$100 each

The Richard and Julia Butler Scholarship

For the student registered in the 3rd. year of The Biology B.Sc. Program who ranked highest in the Biology Core Courses and one or more courses offered by The Plant Sciences Dept. taken in the 2nd. year of The Biology B.Sc. Program.

$100

Archibald A. Campbell Scholarship

An undergraduate scholarship in Canadian Literature awarded annually to the student with the highest standing in a course in Canadian Literature offered by the Department of English.

$200

The Canadian Association of Geographers (c)

To the graduating student who has demonstrated the greatest proficiency in this subject.

Book

The Chemical Institute of Canada Prize

To be awarded to the student with the highest standing in the Honors Chemistry Program of the third year.

$25 in books

The Raymond Compton Dearle Gold Medal (c)

To a student graduating in the Honors Physics Program. (Endowed by former students and friends of Dr. Dearle, MBE, FRSC, Head of the Department of Physics, 1919-1949; Research Professor of Physics, 1949-1957.)

Gold Medal

The Dillon Gold Medal (c)

To a student graduating in the Honors Applied Mathematics Program.

Gold Medal

The Gordon Dixon Memorial

Presented by the Geology Class of 1957 to a senior student who has demonstrated interest and proficiency in Pleistocere Geology.

A book

The Robert LaVerne Eagleson Gold Medal (c)

To a student graduating in the Honors History Program. (Endowed by Miss Lula Eagleson of Toronto, in memory of her brother who graduated from the University with the University Gold Medal in History in 1925.

Gold Medal

The Economics Council (Erie Region) Award

To be awarded annually to the student in the Department of Geography who has prepared the best thesis in each year.

$125

Elgin County Scholarships (2)

One for the man and one for the woman from Elgin County (excluding the City of St. Thomas), who stands highest in any year of any regular program in the University. (These scholarships were voted by the Council of Elgin County in June, 1945).

$100 each

Faculty Association Scholarships

For academic excellence tenable in the Faculties of Arts, Music, Social Science, Science, and Professional Faculties. (These Scholarships were established by The University of Western Ontario Faculty Association).

$100 each

The Howard Ferguson Award

Available to a senior student in any Faculty of the University who is considered to have attained the highest achievement during his university career in athletics, scholarship and college life.

The Harriet Beatrice Freele Scholarship

To an outstanding student entering the Third Year of an Honors Program in Modern Languages, or the Third Year of a General Program with an area of concentration in any of the following: French, German, Russian Studies, Spanish and Italian. (Endowed by the Lloyd C.A. Hodgins Estate).

$300

Gamma Phi Beta Alumnae Jubilee Prize

Second Year Secretarial Science (Secretarial Science 30, 37, 38, 39).

$10

The S.F. Glass Gold Medals (2) (c)

To a graduating student in the Honors Economics Program and in the Honors Political Science Program. (Endowed by the estate of the late S.F. Glass of London).

Gold Medal

Governor General's Medal (c)

Awarded to a graduating student standing highest in the General Program.

Gold Medal

The Andrew Grant Scholarship, No. 1

For Honors Economics, second year.

$200

The Andrew Grant Scholarship, No. 2

For Honors Economics, third year.

$200

The Andrew Grant Scholarship, No. 3

For Honors Political Science, second year.

$200

The Andrew Grant Scholarship, No. 4

For Honors Political Science, third year.

$200

(The four scholarships above were bequeathed to the University by Mrs. Grant as a memorial to her husband, Mr. Andrew Grant, St. Thomas.)

Huron County Scholarships (2)

One for the man and one for the woman from Huron County, who stands highest in any year of any regular Program in the University. (These scholarships were voted by the Council of Huron County in 1949).

$100 each

The International Nickel Company Award in Journalism (c)

For the student completing the Graduate Diploma Program in Journalism with the highest average, provided the average is at least 70%. The award shall be made by the Scholarship Committee on recommendation of the Head of the Department of Journalism.

A plaque and a portable typewriter

The Albert O. Jeffery Scholarship, in Plant Sciences

For the highest ranking student in the 2nd. year of the Biology B.Sc. Program registering in the 3rd. year of that program and electing a majority of senior option's from among the courses offered by Plant Sciences.

$100

The Albert O. Jeffery Scholarship in Honors Plant Sciences

For the highest ranking student in the third year of the B.Sc. in Biology Program who is registered for the Honors Degree in the Dept. of Plant Sciences.

$150

The Albert O. Jeffery Scholarship, No. 3

For Honors Mathematics, third year.

$150

The Albert O. Jeffery Scholarship, No. 4

For Honors Applied Mathematics, third year.

$150

The Albert O. Jeffery Scholarship, in Zoology

For the highest ranking student in the 2nd. year of the Biology B.Sc. Program registering for 2 or more courses offered by the Dept. of Zoology in the 3rd. year of the Program.

$150

The Albert O. Jeffery Scholarship, in Honors Zoology

For the student registered in the 4th. year of the Honors Zoology Program who ranked highest in the courses offered by the Dept. of Zoology during the 3rd. year of the B.Sc. in Biology Program.

$150

(The six scholarships above were bequeathed to the University by the late Mrs. Jeffery as a memorial to her husband, Mr. Albert O. Jeffery, KC, DCL, LLD, former president of the London Life Insurance Company).

Edna Jeffery Scholarships (5)

For the highest standing in second year in each of the following Honors Programs: Modern Language and Literature, Psychology, Computer Science, Philosophy, and Physical and Health Education. (These awards were bequeathed to the University by the late Mrs. Edna Jeffery).

$100 each

Herbert K. Kalbfleisch Scholarship

To be awarded to an outstanding third or fourth year Honors student in German, to be designated by the Department of German. (This scholarship was endowed by former students, colleagues and friends).

$100

The Joseph J. and Annie R. Kingston Gold Medal (c)

Awarded to a graduating student in Honors Mathematics (Program 1). (Endowed by the late Dr. H.R. Kingston in memory of his parents).

Gold Medal

The Maude Holt Kingston Gold Medal (c)

Awarded to a graduating student in the Honors Astronomy Program. (Endowed by the late Dr. H.R. Kingston in memory of his wife).

Gold Medal

The Kitchener Waterloo Record and Kitchener Waterloo Press Club Award in Journalism

To be awarded in January to the student with the highest standing in the Diploma Program in Journalism at the end of the first term.

$200

Sir Wilfred Laurier Memorial Prizes (2)

Awarded annually for proficiency in French conversation, open only to Canadian-born, English speaking students, or sons or daughters of naturalized British subjects not of French parentage. (The Capital fund of these prizes was the gift of the Women's Liberal Association.

$50 and $75

The R.B. Liddy Gold Medal (c)

Awarded to a graduating student in the Honors Psychology Program. (Endowed in memory of the late Professor R.B. Liddy, Head of the Department of Psychology at this University, 1931-1954, by his children Catherine and James, both graduates of this University).

Gold Medal

The London Life Insurance Company Gold Medal (c)

Awarded to a graduating student in the Honors Mathematics Program, Actuarial Option.
Gold Medal

The John McEachern Scholarship

In memory of Dr. Thomas E. Carr, a graduate of this University, for the student with the highest standing in third year Honors English and History who enrolls in the fourth year.
$150

The J.B. McGeachy Memorial Award in Journalism

Award for merchandise or services, to be used before August 31st of the year it is awarded. Awarded annually to a student with high standing in the Diploma Program in Journalism at the end of the first term. (This scholarship has been established in perpetuity by Dr. Barbara A. McGeachy of England in memory of her brother, a distinguished Canadian journalist).
$250

The John Gordon McIntosh Scholarship, No. 1

For Honors Physics, second year.
$100

The John Gordon McIntosh Scholarship, No. 2

For Honors Physics, Third Year.
(The two scholarships above were endowed by the late Mrs. John Gordon McIntosh, of Winnipeg, in memory of her husband.)
$100

The Wilhelmina and J. Gordon McIntosh Prize, No. 4

For second year of the Honors Geography program year, tenable in the third year of Honors Geography.
$60

The Wilhelmina and J. Gordon McIntosh Prize, No. 5

For Honors Geography, third year.
$60

The Wilhelmina and J. Gordon McIntosh Public Speaking Prizes

Awards are made to students taking Speech 39 in the Department of English.
(The 3 awards above were bequeathed to the University by the late Wilhelmina Morris McIntosh, of Winnipeg and London).
Amounts Vary

The Joseph Henry Marshall Prize

For the highest standing in one of the following Canadian History courses: History 231, History 331 or History 431. Open only to Canadian-born students. Bequeathed to the University by Mrs. Amy Marshall as a memorial to her late husband, Joseph Henry Marshall, MP, to commemorate his interest in all phases of Canadian History.
$60

The Mathematics Class of 1949 Prize

For the highest standing in first year Calculus.
$25

The Midland Osler Securities Scholarship

Awarded to the student entering the second year of the Honors Journalism program, who has the highest average in five courses in the first year providing that that average is at least an "A".

$100

The K.P.R. Neville Memorial Scholarship

For a student entering second year of the Honors program in English and French, English and German, or English and History. Offered in 1971-72 and alternate years thereafter.

$100

The Benjamin Noble Scholarship

For the second year of Honors Fine Art program, tenable in the third year. (This scholarship was endowed by the late Mrs. Annie Noble in memory of her husband).

$150

The Northern Life Gold Medal (c)

Awarded to a graduating student in Honors Statistical Mathematics.

Gold Medal

The Thomas B. Richardson Gold Medal (c)

Awarded to a student graduating in the Honors Geography Program. Endowed by Leverne and Ronald Richardson in honor of their father.

Gold Medal

Royal Canadian Engineers Memorial Scholarships

Scholarships are offered to students, both male and female, who are attending any educational course of study or practical training course beyond secondary school level. Scholarships are awarded on the basis of merit and need to the most suitable candidates from among those students who apply for the scholarship. A candidate to be eligible for the Royal Canadian Engineers Memorial Scholarship, must be the child or grandchild of a person who served in any rank in any of the following components of the Canadian Armed Forces:

a) A Royal Canadian Engineer component of the Canadian Army during World War I, World War II, or under the United Nations in Korea; or
b) The Royal Canadian Engineers in the Canadian Army Regular or Permanent Force or Militia or Non-Permanent Active Militia, for not less than three continuous years; or
c) The Military Engineers Branch of the unified Canadian Armed Forces for not less than three continuous years after the first day of February, 1966.

(NOTE: Application forms are available from the general office of the Faculty of Engineering Science).

Up to $500 each

The Dean Russell (Limited) Award (2) (c)

For two students (preferably one woman and one man) highest in fourth year Zoology. Preference will be given to students planning to enter the teaching profession.

$100 each

The Society of Chemical Industry Merit Award

For the highest standing in the final year of Honors Chemistry provided that First Class Honors are obtained and the course has been completed in four years.

A gold key and a year's subscription to the Journal of the Society (Chemistry and Industry)

The Rhoda Ann Rim Scholarship in English Literature

Awarded on the basis of academic standing in Arts or Social Sciences of the General Program, first year, to a student who enrolls in the second year of Honors English Language and Literature.
The winner will be selected by the Scholarship Committee, on recommendation of the Department of English, from **applications to be received by the Registrar before May 1st.** The student selected must maintain first or second class honors and remain in the Honors Program in English Language and Literature. (The scholarship was established as a memorial to his mother by the late Lionel Harris Rinn, Honors English graduate of this University).
$1,000 ($500 2nd. Year, $300 3rd. Year, $200 final Year)

The W.J. Roche Scholarship

Awarded for the highest ranking student in Arts or Social Sciences of the General Program, first year, who enters one of the Social Science Programs: Honors Economics, Politics, Geography, History or Psychology. (Given in honor of the late Hon. W.J. Roche, MD, LLD, CMG, former Chancellor of the University).
$50

Sons of Italy (c)

For proficiency in the study of the Italian Language and Culture at an undergraduate level.
$100

The Charles A. Southworth Memorial in Paleontology

Awarded to an undergraduate or graduate student at the discretion of the Geology Department, provided by Mrs. Harriet G. Woolfengen, Sedona, Arizona.
Book(s)

The J.A.F. Stevenson Medal

Awarded annually to the top graduating student in Physiology.
Medal

Stollery Smallman Scholarship

Awarded to a Zoology major student in his third or fourth year.
$300

Legation of Switzerland (c)

To students in modern languages, on recommendation of the Departments concerned.
Book prizes

W.W. Tamblyn Prize

For the highest standing in the use of language. (English Composition and Public Speaking) at the first year level. The capital fund for this prize was bequeathed to the University by the late W.W. Tamblyn of Bowmanville and by his son, the late Professor W.F. Tamblyn of London, formerly Head of the Department of English at this University.
$50

The Timken International Fund Scholarships (4)

For students entering the Second Year in the Faculty of Engineering Science, students entering the Third Year in the Faculty of Engineering Science, students entering either the Second or Third Year of Honors Mathematics and students entering the Second or Third Year of Applied Mathematics.
$250 each

The A. Dorothy Turville Gold Medal (c)

Honors French and Spanish. (Endowed by the Undergraduate Women's Organization).
Gold Medal

The Veeco Prizes (2) (c)

Awarded annually for overall program excellence in the final year of the following programs—four year Honors Program in Physics or Physics Major/Minor, three year Bachelor of Science Program in Physics. (These prizes are to be underwritten by the Vacuum Electronics Corporation—Veeco).
$50 each

University of Western Ontario Medals (c)

For all Honors Programs when no other medal is awarded.
Medals

University of Western Ontario Scholarships

For the highest standing in the second and third Year of Honors Programs when no other scholarship is awarded.
$100 each

The Frances Weir Gold Medal and Scholarship (c)

In Honors English and History. The gift of Dr. Samuel E. Weir, QC, through the Weir Foundation, in memory of his sister Miss Frances M. Weir who died in 1959 and, who was, at the time of her graduation in 1916, the winner of the Governor General's Gold Medal, which was then awarded to the best student in the Honors English and History Program.
$100 & Gold Medal

The Frances Weir Scholarship (c)

When the winner of the Governor General's Medal is a woman, she will receive a scholarship, a gift of Mr. Samuel E. Weir, QC, through the Weir Foundation, in memory of Miss Frances H. Weir who won the Governor General's Medal when she graduated from this University in 1916.
$100

Albert E. Wells

For second year of Honors Chemistry Program.
$150

The William Wyatt Scholarship, No. 1

For second year of Honors English Language and Literature Program.
$200

The William Wyatt Scholarship, No. 2

For second year of Honors History Program.
$200

The William Wyatt Scholarship, No. 3 (4)

For the highest ranking student (first year General Program) in Arts, Sciences, Social Sciences and Music, who enters an honors program, when no other scholarship is awarded. (The capital fund for the three scholarships above was bequeathed to the University by the late William Wyatt of London).
$200

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

B) PROFESSIONAL FACULTIES AND SCHOOLS

1. SCHOOL OF BUSINESS ADMINISTRATION

The William C. Benson Prize

The gift of William C. Benson, awarded to the highest ranking student in the Business 250 Course in the second year, who is entering the third year in the School of Business Administration. The award will be made at the beginning of the third year.

$50

The Clarkson, Gordon & Co. Prize

The gift of Clarkson, Gordon & Co., Chartered Accountants, awarded to the student who completes the third year of Business Administration with the highest standing in accounting.

$100

Faculty of Business Administration Gold Medal

To be awarded by the faculty upon graduation to the undergraduate student with the highest first class standing.

Gold Medal

The GSW Centennial Medal

Awarded upon graduation to the undergraduate student with the highest first class standing in the Faculty of Business Administration.

Medal

The Johnson's Wax Scholarship

To an outstanding student in the first year of Pre-Business, tenable in the second year if he maintains scholarship standing from year to year. Must apply to the Office of the Registrar by October 1st, 1972.

$2,400 (800 / yr. for three years)

The Wilhelmina and J. Gordon McIntosh Scholarship No. 1

Awarded for general proficiency in the second year of the School of Business Administration, payable during the third year at the school.

$100

The Wilhelmina and J. Gordon McIntosh Scholarship No. 2

Awarded for general proficiency in the third year of the School of Business Administration, payable during the fourth year at the School.
(The two awards above were bequeathed to the University by the late Wilhelmina Morris McIntosh, of Winnipeg and London.)

$150

Price, Waterhouse & Co. Scholarship

Awarded to a student completing the third year of the course in Business Administration, whose academic record in the first three years and whose ability and other qualifications are considered to be outstanding. Preference will be given to those who plan to continue their studies after graduation with a practising firm of chartered accountants.

$250

Touche and Ross Award

To the student entering the fourth year of Honors Business Administration with the best marks in the Arts and Social Sciences. He should have at least a second class standing in the Business subjects taken in his junior year, and should possess other qualifications which, in the opinion of the Faculty, indicate that he could, if he so desires, have a successful and happy career in the accounting profession.

$300

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2. FACULTY OF DENTISTRY

All scholarships and awards are recommended annually to the Council of the Faculty. If in the judgment of the recommending body it is felt that there is no appropriate recipient in any given year, the Council reserves the right not to approve the granting of the scholarship or award.

The American Academy of Dental Radiology Award

Awarded annually to the Fourth Year student who, on the recommendation of the Division of Radiology, Department of Oral Medicine, is most proficient in Dental Radiology. An application is not required

A Certificate and a one-year membership which includes a year's subscription to the Journal of Oral Surgery, Oral Medicine, Oral Pathology.

The American Academy of Oral Medicine Award

Awarded annually to the Fourth Year student who, on the recommendation of the Department of Oral Medicine, displays the greatest proficiency in Oral Medicine. An application is not required.

Certificate and a copy of the Journal of the American Academy of Oral Medicine in which the student's name will appear.

The American Academy of Periodontology Award

Awarded annually to the Fourth Year student who, on the recommendation of the Division of Periodontics, Department of Oral Medicine, has excelled in the area of Periodontics. An application is not required.

Certificate and a one-year subscription to the Journal of Periodontology-Periodontics

American Association of Endodontists Award

Awarded annually on the recommendation of the Division of Endodontics, Department of Restorative Dentistry, to the Fourth Year student who has shown the greatest interest and proficiency in the field of Endodontics. An application is not required.

A one-year membership in the American Association of Endodontists which includes a subscription to the Journal of Oral Surgery, Oral Medicine, Oral Pathology

The American Association of Orthodontists Award in Oral-Facial Growth

Awarded annually to the Fourth Year student who, on the recommendation of the Division of Orthodontics, Department of Paediatric Dentistry, demonstrates the most outstanding qualities and interest in the development of the oral-facial complex. An application is not required.

Certificate

** American Dental Society of Anaesthesiology Award

Awarded annually on the recommendation of the Department of Oral Surgery to the Third Year student who is judged to be most proficient in anaesthesiology. An application is not required.

Certificate

The Canadian Academy of Periodontology Award

Awarded annually to the Fourth Year student who, on the recommendation of the Division of Periodontics, Department of Oral Medicine, attains the highest standing in the final year in Periodontics. No application is required.

A text book to the value of $25.

The Canadian Society of Dentistry for Children Award

Awarded annually to the Fourth Year student who, on recommendation of the Department of Paediatric Dentistry, is proficient in subjects relating to Dentistry for Children. No application is required.

A textbook with application to Dentistry for children and a one-year subscription to the Journal of Dentistry for Children

The Canadian Society of Oral Surgeons Award

Awarded annually on the recommendation of the Department of Oral Surgery to the Fourth Year student who achieves the highest standing in the subject of Oral Surgery. Not tenable with any other award in Oral Surgery. An application is not required.

A textbook in Oral Surgery or the equivalent in cash

The Centennial Paediatric Dentistry Award

Established in the Faculty of Dentistry by the Ladies' Auxiliary to the London and District Dental Society. Awarded annually to the Third Year student who, on the recommendation of the Department of Paediatric Dentistry, is the most proficient in Paediatric Dentistry and who, by scholarship and attitude towards his responsibilities, has met the requirements for the Award. An application is not required.

$100 and Plaque

Clinical Paedodontic Award

Established in the Faculty of Dentistry by the Canadian Society of Dentistry for Children in honor of Dr. S.A. MacGregor. Awarded annually to the Fourth Year student who, on the recommendation of the Division of Paedodontics, Department of Paediatric Dentistry, has shown the greatest proficiency in Clinical Paedontics. No application is required.

A Medal

Dental Sciences Research Award

Donated by the Department of Restorative Dentistry on behalf of Dean W. Scott Hamilton, and awarded annually to the Fourth Year student who has demonstrated outstanding interest and activities in research related to the dental sciences throughout his undergraduate program. No application is required.

Plaque and a one-year subscription to the Journal of Dental Research

The Fixed Prosthodontics Award

Established in the Faculty of Dentistry by Dr. W.R. Teteruck. Awarded annually on the recommendation of the Division of Fixed Prosthodontics, Department of Restorative Dentistry, to the Fourth Year student who has shown the greatest proficiency in Fixed Prosthodontics throughout his undergraduate dental program. An application is not required.

A Plaque

Hamilton Academy of Dentistry Award in Oral Medicine

Established in the Faculty of Dentistry by the Hamilton Academy of Dentistry. Awarded annually to the Second Year student who, on the recommendation of the Department of Oral Medicine, displays the highest degree of academic excellence in Oral Medicine. An application is not required.

A Plaque

International College of Dentists Award

Established in the Faculty of Dentistry by the International College of Dentists (Canadian Section). Awarded annually on the recommendation of the Promotions Committee to the Third Year student who exhibits the highest degree of both academic proficiency and participation in extra-curricular activities. An application is not required.

$100 and a certificate

** Johnson & Johnson Award

Awarded annually on the recommendation of the Department of Restorative Dentistry to the Second Year student who displays the highest degree of competence in Operative Dentistry. An application is not required.

$150 and a Plaque

** Johnson & Johnson Award

Awarded annually on the recommendation of the Department of Restorative Dentistry to the Fourth Year student who displays the highest degree of competence in Operative Dentistry. An application is not required.

$150 and a Plaque

** - Awaiting Senate approval

London and District Dental Scociety Award

Awarded annually to the Fourth Year student for general proficiency in the fourth dental year. No application is required.

A gift and certificate

Mosby Book Awards

Established in the Faculty of Dentistry by the C.V. Mosby Company. Awarded annually by the Council of the Faculty to the members of the First Year selected by the Committee on Examinations in the subjects of Anatomy, Occlusion and Physiology. Applications are not required.

Books to the value of $30 each

Mosby Book Awards

Established in the Faculty of Dentistry by the C.V. Mosby Company. Awarded annually by the Council of the Faculty to the members of the Second Year selected by the Committee on Examinations in the subjects of Oral Pathology and Restorative Dentistry. Applications are not required.

Books to the value of $30 each

The Ontario Dental Association Honorary Members Prize

Awarded annually, when applicable, to a student who, on the recommendation of the Executive Council of the Ontario Dental Association on advice from the Publications Committee, has written the best article of a cultural nature (non dental) published in the undergraduate journals of the Ontario Faculties of Dentistry during the previous year. An application is not required.

$40

The Elgin Dental Association Award in Oral Surgery

Established in the Faculty of Dentistry by the Elgin Dental Association. Awarded annually to the Third Year student who, on the recommendation of the Department of Oral Surgery, displays the greatest proficiency in Oral Surgery. No application is required.

$50 and a Plaque

Pro Liberis Prize

Established in the Faculty of Dentistry by the Dental Public Health Committee of the Ontario Dental Association. Awarded annually to the Fourth Year student who, on the recommendation of the Division of Paedodontics, Department of Paediatric Dentistry, shows the greatest proficiency in Paedodontics. An application is not required.

$50 and a Key

The Removable Prosthodontics Award

Established in the Faculty of Dentistry by Dr. J.E. Ryan. Awarded annually on the recommendation of the Division of Removable Prosthodontics, Department of Restorative Dentistry, to the Fourth Year student who has shown the greatest proficiency in Removable Prosthodontics throughout his undergraduate dental program. An application is not required.

A Plaque

The Restorative Dentistry Award

Established in the Faculty of Dentistry by Dr. D.B. Gilboe in memory of Dr. Erik T. Anderson. Awarded annually to the Third Year student who, on the recommendation of the Department of Restorative Dentistry, shows the greatest proficiency in Restorative Dentistry. An application is not required.

$100 and a Plaque

Royal College of Dental Surgeons of Ontario Scholarship

Established in the Faculty of Dentistry by the Royal College of Dental Surgeons of Ontario. Awarded to the First Year student ranking highest in Honors (an average of at least 80%) at the annual examinations of the first year. Applications are not required.

$150

Royal College of Dental Surgeons of Ontario Scholarship

Established in the Faculty of Dentistry by the Royal College of Dental Surgeons of Ontario. Awarded to the Second Year student ranking highest in Honors (an average of at least 80%) at the annual examinations of the second year. Applications are not required.

$150

Royal College of Dental Surgeons of Ontario Award in Oral Biology

Awarded annually to the Second Year student who achieves the highest standing in the combined First Year course of neuroanatomy and the Second Year course of neurophysiology. An application is not required.

$100 and a Plaque

W.B. Saunders Book Award

Awarded annually on the recommendation of the Department of Social Dentistry to the Third Year student who displays the greatest proficiency in Social Dentistry. An application is not required.

one-year subscription to "Dental Clinics of North America"

The Senior Award in Oral Surgery

Established in the Faculty of Dentistry by Dr. A.G. Parnell. Awarded annually on the recommendation of the Department of Oral Surgery to the Fourth Year student who achieves the greatest proficiency both academically and clinically in Oral Surgery. An application is not required.

A Plaque

The Senior Award in Oral Biology

Established in the Faculty of Dentistry by Dr. K. Hoshino. Awarded annually on the recommendation of the Interdepartmental Teaching Sub-committee of the Committee on Undergraduate Dental Curriculum to a Fourth Year student who achieves a high degree of excellence in the subject of Oral Biology. An application is not required.

$100 and certificate

University of Western Ontario Medal

Awarded to a Fourth year student for general proficiency throughout the entire four years of the Dental Program.

Gold Medal

** - Awaiting Senate approval

3. FACULTY OF ENGINEERING SCIENCE

Association of Professional Engineers Scholarships (2)

Awarded by the Ontario Professional Engineers Foundation for Education, on the recommendation of the Faculty Council, to a deserving undergraduate who has obtained first class honors in the course prescribed for the year preceding the award.

$250

Dr. E.V. Buchanan Prize

Awarded annually to the undergraduate student in the Faculty of Engineering Science who, in the opinion of the Faculty Council, has made the most significant social and cultural contribution to the life of the Faculty as well as achieving academic standing. (Underwritten anonymously).

$50

Canadian Construction Association Thesis Prize

Awarded to the fourth year student in Engineering Science with the best thesis on the subject of construction. Thesis to be reviewed by the Division of Building Research of the National Research Council and the Canadian Construction Association Research and Education Committee, with an additional $100 prize for an outstanding thesis.

$50 and an Engineer's Handbook

The Chemical Institute of Canada Prize

To the student with the highest academic standing in the penultimate year of Chemical Engineering.

$25

Chemical Rubber Company - Engineering Science Achievement Award

Recognizes competence and professionalism at the first-level of engineering. Students are nominated for this award.

The Harry Cross Medal

This medal is the gift of Mr. J.R. Cross in memory of his father, the late Harry Cross, and is awarded to the fourth year student, enrolled in the Electrical option of Engineering Science, with the highest aggregate percentage for the final examination of the third and fourth years, provided that the student obtains first class honors standing in the work of the final year.

Silver Medal

M.M. Dillon Ltd. Award

Awarded to the student obtaining the highest standing in design in Civil Engineering leading to Degree of Master of Engineering, the recipient to be determined by the scholarship committee of the Faculty of Engineering Science.

Book Prize valued at $25

The Electrochemical Society, Inc. - F.M. Becket Memorial Award

This award is given by the Electrochemical Society to commemorate F.M. Becket, a former president. Awarded to a member of the graduating class.

Engineering Institute of Canada (London Branch) Best Paper Award (c)

Presented to the engineering student in his fourth year whose project, presentation and thesis has been judged to have the greatest merit with regard to originality, scope, technical content, and written and verbal presentation.

Membership

Engineering Institute of Canada Prize

Conferred on the student who, in his third year, has made the greatest contribution to student engineering society affairs and at the same time has maintained a good academic record.

$50

The Faculty Association Scholarship

For students enrolled in second third or fourth year in this university on the basis of academic excellence during the previous year's work.

Professional Engineers Gold Medal (c)

Awarded annually by the Association of Professional Engineers of the Province of Ontario to the fourth year student, enrolled in any Engineering Science option, with the highest aggregate percentage for the final examinations of the four years of his undergraduate course, provided that the student obtains first class honors standing in the work of his final year.

Gold Medal

Student Road Safety Competition

The Engineering Institute of Canada, supported by the North American Life Assurance Company, sponsors a Student Road Safety Competition. This is a competition for all undergraduate engineering students in Canada on ideas and methods to reduce motor vehicle accidents and thereby increase road safety. New or novel ideas are particularly desired. The only stipulation is that such ideas should be within reasonable economic reach and possible within the next 10 to 15 years. Contestants are encouraged to select their own subject but may coordinate the subjects or form of presentation to suit thesis requirements. Presentations may be made by groups of students, providing all are eligible; any awards would then be made to the group.

1st Prize of $1000
2nd Prize of $600
3rd Prize of $400
4th Prize of $200

The Timken International Fund Scholarships (4)

For students entering the Second Year in the Faculty of Engineering Science, students entering the Third Year in the Faculty of Engineering Science, students entering the Second or Third Year of Honors Mathematics and students entering the Second or Third Year of Applied Mathematics.

$250 each

The Dr. James A. Vance Prize

Awarded annually to the undergraduate student in the Faculty of Engineering Science who, in the opinion of the Faculty Council, has exhibited superiority in engineering design. (Underwritten anonymously).

$50

The Dr. James A. Vance Silver Medal (c)

This is the gift of Dr. James A. Vance, a past President of the Engineering Institute of Canada and a former Chairman of the Ontario Water Resources Commission. It is awarded annually to a fourth year student enrolled in the Civil Engineering option of the Faculty of Engineering Science having the highest aggregate percentage for the final examinations of the third and fourth years, provided that the student has attained first class honors standing in the work of the final year.

Silver Medal

University of Western Ontario Medal (c)

May be awarded to fourth year engineering students obtaining the highest standing in the Chemical Option and the Mechanical Option of the Engineering Science Program. The regulations governing awards shall be similar to those applying to the Harry Cross Medal.

Silver Medals

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

4. FACULTY OF LAW:

The Hon. Edward Blake Prize

To the student achieving the highest standing in company Law 1.
(Endowed by the late Major Hume Cronyn, KC, MP, in memory of his uncle, the Hon. Edward Blake, sometime Premier of Ontario and, later, member of the British House of Commons).

$100

The Borden, Elliot, Kelly and Palmer Prize

To the student achieving the highest standing in second year law.

$200

The Campbell, Godfrey & Lewtas Prize

To the student achieving the highest standing in first year law.

$250

The Canada Law Book Company Prizes (c) (3)

To the student achieving (a) the highest standing in Torts, first year; (b) the highest standing in Evidence, second year; and (c) the highest standing in a course in the third year to be selected by the Faculty of Law.

Books valued at $50 each

Canada Permanent Trust Company Law Prizes (c) (2)

One to the student achieving the highest standing in Wills, and another to the student achieving the highest standing in Trusts.

$100

The Carswell Company Limited Prizes (c) (3)

To the third-year student achieving the highest standing in Conflict of Laws, the second-year student achieving the highest standing in Commercial Law and the first-year student achieving the highest standing in a course to be designated by the Dean.

Books of the value of $35 each

Special Prize in Commercial Law Subjects

Donated by Zimmerman, Winters, Warley, Grant, Hugo, Paddon, and Bennett, Toronto, to be awarded to a student who demonstrates exceptional ability in a group of third year Commercial Law subjects to be designated by the Faculty.

$100

The Davies, Ward and Beck Prizes in Commercial Law Subjects (3)

To three students who have shown exceptional promise in their second year and who have made the Dean's List of Honor Students in that year.

$150 each

Faculty Prize for Legal Writing (c)

To be awarded at the discretion of the Faculty of Law, for contributions to the University of Western Ontario Law Journal.

$100

Harold G. Fox Education Fund Award.

To be awarded to a student in first or second year who shows exceptional promise.

the sum of $100 for five years, 1971-72 to 1975-76

The Arthur T. Little Scholarship (c)

To the student achieving the highest standing in the final year of Law.

Gold Medal and $200

The London Life Insurance Company Prize (c)

To the Law student achieving the highest standing in Insurance.

$100

The Margaret H. McNulty Awards (2)

To two students who, in their first year, have shown great promise.
$100 each

The Petch and Associates Prize.

To the second-year student achieving the highest standing in a corporate or commercial course to be designated by the Dean.
$100

Prize in Taxation

Donated by Shibley, Righton & McCutcheon, Toronto, to the student achieving the highest standing in Taxation in the Faculty of Law.
$50

Dean Ivan C. Rand Award

Endowed by bequest of the late Ivan C. Rand. The annual income from the bequest shall be divided equally in such manner as the Selection Committee for the Dean Ivan C. Rand Honor Society sees fit, amongst those students in their graduating year in the Faculty of Law who are honored by membership in the Honor Society.

The A.B. Siskind Scholarship (c)

The income of a trust fund established under the will of the late A.B. Siskind QC, a former sessional lecturer at, and enthusiastic supporter of, the Faculty of Law, to be given to the student achieving the highest standing in Civil Procedure.

Stevenson & Evans Prize

For Constitutional Law, first year.
$100

The Thomson, Rogers' Prize in Company and Commercial Law

Awarded annually to the second-year student in the Faculty of Law who achieves the highest aggregate standing in two of the following three courses: Company Law, Commercial Law and Income Taxation (the two courses to be designated by the Faculty)
$150

The Thomson, Rogers' Prize in Trial Process (c)

Awarded annually to the second year student with the highest standing in Trial Process.
$150

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of this publication.

5. SCHOOL OF LIBRARY AND INFORMATION SCIENCE:

Canadian Library Association Scholarships

The CLA has a number of scholarships for students in accredited library schools. Applications should be made before March 1st to the Chairman, CLA Scholarships and Awards Committee, 63 Sparks Street, Ottawa, Ontario KiP 5E3.

National Research Council of Canada

N.R.C. awards a number of graduate scholarships in the field of science librarianship and documentation. They are awarded to candidates who are graduates or final-year students of science or engineering courses. Applications should be in by the end of December. Further information may be obtained from the Scholarships Officer, Office of Grants and Scholarships, National Research Council, Ottawa, Ontario K1A 0R6.

$3,800 plus a travel grant

The Canadian Federation of University Women

This Fellowship is open to any woman holding a degree from a Canadian university, whose domicile is in Canada a) who wishes to spend a year at an *accredited library school,* school of social work, college of education or similar professional school; or b) who wishes, after some years of experience in a chosen field or after a lapse of time away from formal study, to embark on a program leading to an advanced degree. One or two professional Fellowships are awarded. Information and Application forms from: Canadian Federation of University Women, Mount Allison University, Box 69, Sackville, New Brunswick.

Professional Fellowship $2,500

Medical Library Association

Each year, at least one scholarship is offered to individuals showing promise for medical librarianship, who will enter graduate library school. Applications must be completed and returned by March 1. Applications are available from the Medical Library Association, Suite 1601, 919 N. Mich. Ave., Chicago, Ill. 60611.

NOTE: Financial Assistance for Library Education, a publication of the American Library Association, is revised each summer. Copies are available from the Association, 50 E. Huron Street, Chicago, Illinois 60611 without charge.

$1,500

NOTE: In addition to the scholarships listed above, the Canadian Library Association issues a pamphlet entitled *Financial Aid for Study in the Field of Library Science.* A copy of this pamphlet is available from the School on request. Further information on financial aid may be obtained from the Awards Officer, the University of Western Ontario and by referring to the Calendar of the School of Library and Information Science.

FACULTY OF MEDICINE:

The Abbott Prize in Anaesthesia (c)

Awarded by the Abbott Laboratories Limited, to the fourth year student who has shown outstanding interest in the Specialty of Anaesthesia. For the prize, the marks in the third year examination and the performance during the fourth year clerkship, as judged by the Clinical Instructors shall be taken into consideration.

$150

The Alpha Kappa Kappa Gold Medal (c)

Awarded to the medical student taking the highest standing in the final year. (Provided for in Alpha Kappa Kappa's contribution to the University Endowment Fund).

Gold Medal

The B'Nai Brith Scholarship in Pathology

To be awarded by the London Lodge of the B'Nai Brith Society to the second year medical student with the highest standing in Pathology.

$50

The Borden Award in Paediatrics

Granted by the Borden Company Limited to the medical student showing the greatest merit in Paediatrics in the third year.

$100

The Bristol Prize in Medicine

Awarded annually by Bristol Laboratories to the third year student selected on the basis of meritorious performance in Clinical Medicine.

Medical texts in Therapy and/or Pharmacology to the value of $125

The Dr. Lawrence A. Burk Memorial Prize in Paediatrics

Established by Mrs. Barbara Burk in memory of her late husband, Dr. Lawrence A. Burk, class of 1959, is awarded to the final year student showing the greatest merit in Paediatrics.

$50

The J.B. Campbell Memorial Scholarship in Medicine (c)

To the student obtaining the highest marks in the combined examinations in Medicine and Clinical Medicine in the final year.

$100

The J.B. Campbell Memorial Scholarship in Physiology

To the medical student obtaining the highest marks in the examinations in Physiology.

$100

The Ciba Prize

Awarded to a student in the second year, at the discretion of the Council of the Faculty of Medicine.

A set of the Ciba Collection of Medical Illustrations

The Ciba Prize in Medicine

To be awarded to the third year student in the Faculty of Medicine who shows the greatest proficiency in Medicine.

$75

The Class of 1917 Prize (c)

To the medical student in the final year keeping the best case records on patients on the wards and in the out-patient departments.

$50

The Class of '55 Prize (c)

To be awarded at the discretion of the Dean and Faculty of Medicine to a student in the final year showing outstanding promise in the practice of Clinical Medicine.

$200

The Dr. T.H. Coffey Memorial Prize in Physical Medicine and Rehabilitation

Established by Dr. M.G.P. Cameron in memory of the late Dr. T.H. Coffey. Awarded to a third or fourth year medical student for the best essay in the field of clinical investigation or research related to Physical Medicine and Rehabilitation. Essays are to be submitted to the Dean of Medicine on or before March 31st of each year.

$50 and a book

The Pearl Devenow Fox Memorial Prize in Obstetrics and Gynaecology (c)

Awarded by the London Section of the National Council of Jewish Women of Canada, to the final year medical student showing the greatest merit in Obstetrics and Gynaecology during the third and fourth years, as assessed by both marks in written examinations and performance in clinics.

$100

The Dr. F.R. Eccles Scholarship

The late Dr. Eccles established a scholarship fund to enable students of medicine to study abroad following graduation. Awarded annually to the student obtaining the highest standing in the final year of the medical course.

$1,200

Nellie L. Farthing Memorial Fellowship

Available to students engaged in postgraduate work or medical research in the medical sciences. Applications should be submitted to the Dean of Medicine no later than March 15.

$1,500 per academic year.

The Charles E. Frosst Medical Scholarship

Awarded by Charles E. Frosst and Company, at the end of the third year, to a medical student who has shown most promise in the field of Theropeutics.

$500 and a Bronze Medal

The Dr. Fred N. Hagerman Memorial Prize in Surgery (c)

Established by the family and friends of the late Dr. Fred N. Hagerman, Meds '63, and awarded to the final year student showing the greatest merit in Surgery during the third and fourth years, as assessed both by marks in written examinations and performance in clinics.

$100

Hippocratic Society Award in Anatomy

To be awarded annually as a prize to the student doing the best work in Gross Anatomy in the first year.

$50

The Horner Gold Medal Awards in Ophthalmology and Otolaryngology (c)

Awarded by Frank W. Horner Limited to the final year medical students showing the highest proficiency in Ophthalmology and Otolaryngology in all years of the medical course.

Gold Medals

The Rachel Slobasky Kaplan Scholarship

Established by Mrs. Kaplan of Windsor, Ontario and awarded annually to the student achieving the highest standing in the examinations at the conclusion of the second year of the medical course.

$300

The Khaki University and Y.M.C.A. Scholarship (c)

Applications for the Khaki University and Y.M.C.A. Scholarship, will be received by the Dean from the sons or daughters of veterans of the Canadian Armed Forces. In the event that no applications are received from any veteran's dependents, then applications will be accepted from other students. The Scholarship will be awarded at the discretion of the Council of the Faculty of Medicine.

Valued at $200

The R.A.H. Kinch Prize in Community Medicine (c)

Awarded annually to the final year medical student who demonstrates the greatest competence in the community aspects of medicine, as determined by the Department of Epidemiology and Preventive Medicine and the Department of Family Medicine.

$150

The Kingswood Scholarship (c)

Awarded to a student in the graduating year in Medicine, as the authorities of the University consider most proficient. (The fund was established by a bequest of the late Mr. Isaac William Kingswood).

$100

The Lange Awards, First Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The Lange Awards, Second Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

The Lange Awards, Third Year

Prizes of two books published by Lange Medical Publications to each of two outstanding students as selected by the Council of the Faculty.

The Lange Awards, Fourth Year

Prizes of four books published by Lange Medical Publications to each of two outstanding students as selected by Council of the Faculty.

London Academy of Medicine Memorial Scholarship

Awarded annually to the student entering First Year in the Faculty of Medicine from Programs in The University of Western Ontario, who has demonstrated the highest scholarship for admission to the Medical Program. (Endowed by the London Academy of Medicine as a memorial to deceased Academy members).

$150

The Dr. I.W. Man Award

One or more students in the third year of the Medical Program showing superior achievement in studies in Family Medicine, and demonstrating personal monetary need.

$300

The W.H. McGuffin Scholarships in Radiology (c) (2)

Given to medical students of either of the two final years, presenting the best essays on a subject pertaining to Radiology. The essays are to be in the Office of the Dean of Medicine on or before February 15th of each year.

$60 and $40 awards

The Medical Alumni Gold Medal (c)

Awarded to the student graduating in Medicine with the highest aggregate marks during the full course taken exclusively at The University of Western Ontario.

Gold Medal

C.V. Mosby Company Scholarship Awards, First Year

To the student obtaining the highest standing in each of the following first year subjects: Biochemistry and Histology.

A book to the value of $30

C.V. Mosby Company Scholarship Award, Second Year

To the student obtaining the highest standing in each of the following second year subjects: Bacteriology and Immunology, Psychiatry.

A book to the value of $30

C.V. Mosby Company Scholarship Award, Third Year

To the student obtaining the highest standing in Clinical Biochemistry.

A book to the value of $30

The Ontario Medical Association Prize in Preventive Medicine

Awarded by The Ontario Medical Association to the most able student in the Third Year as selected by the Chairman of the Department of Epidemiology and Preventive Medicine.

$100

Poulenc Award (c)

To the student obtaining the highest marks for the two final years in the following clinical subjects: Medicine, Obstetrics and Gynaecology, Paediatrics, Physical Medicine, Psychiatry and Surgery.

$250 and an inscribed gold medal

The Roche Scholarship (c)

Awarded to a graduating student on the work of the two final years in Medicine. It will be based on the general lines of the Rhodes Scholarship, in which proficiency, progress and leadership will be evaluated by a Board of Assessors.

$50

The Rowntree Prizes in Medical History (3)

Given annually in memory of the late Dr. L.G. Rowntree, for essays in Medical History. Essays may be submitted by students in any year, and students in the first year class are particularly encouraged to do so. The students writing the three best essays will be awarded the prizes. These essays will be judged on the basis of historical content, style, accuracy and originality. The essays are to be submitted to the Department of Medical History on or before March 31st of each year.

$150 (3 prizes of $75, $50 and $25)

The Dean Russell Prizes in Neurological Science

Given annually to two second year medical students obtaining the highest mark in Neurological Science.

An opthalmoscopic outfit

The Ivan Hamilton Smith Memorial Prize (c)

Donated by the friends of the late Dr. Ivan Hamilton Smith, awarded to the final year medical student obtaining the highest mark in Therapeutic Radiology.

$25 for books

The Leonard Sutcliffe Memorial Scholarship

Awarded to the medical student with the highest academic standing the third year.
$150

The Verda Taylor Vincent Scholarship

Established by the late Miss Verda Taylor Vincent, a graduate of The University of Western Ontario. It is to be awarded annually to the student achieving the highest standing in the examinations at the conclusion of first year Medicine.
$1,000

The Helen Atfield White Scholarship

For the U.W.O. undergraduate student registering in the first year of the Faculty of Medicine with the highest average in the previous year's work.
$250

The Carleton C. Whittaker Memorial Scholarship in Psychiatry

Established by the late Miss Edith M. Whittaker, and awarded to a student in the third year of Medicine with high standing in Psychiatry and other evidence of interest in the subject.
Valued at $125

Will Pharmaceuticals Prizes

In order to promote interest in Pharmacology, a Fund has been established by Will Pharmaceuticals, which is made available for student competition. The fund is to be used in the following manner:
a) Will Pharmaceuticals First Prize in Pharmacology to be awarded to the student obtaining the highest marks in Pharmacology.
b) Will Pharmaceuticals Second Prize in Pharmacology to be awarded to the student obtaining the second highest marks in Pharmacology.
c) The First Will Pharmaceuticals Prize for an Essay in Pharmacology.
d) The Second Will Pharmaceuticals Prize for an Essay in Pharmacology.
Undergraduate students standing in the upper third of the class will be eligible for the essay competitions. The subjects are to be chosen by the students competing for the prizes. Essays in duplicate are to be submitted to the Office of the Dean of Medicine on or about February 15th of each year. The first and second prize winners (3 and 4) will be decided by a special committee, which shall include the Professor of Pharmacology and the Professor of Medicine. The quality of the essay must be such that they will warrent publication in a recognized journal or review.
Pharmacology:
1st. prize — $100;
2nd prize — $75;
Essay Prize —
1st prize — $75;
2nd prize — $50.

The Glen S. Wither Memorial Award (c)

Established by the family, classmates and friends of the late Dr. Glen S. Wither, and is awarded to the final year medical student who, in the opinion of his peers and associates, demonstrates the highest attributes of the physician—integrity, concern for his patients, compassion, and a devotion to his profession.
$250

Elena B. Wolf Memorial Awards (2)

The sum of $125 is awarded annually in memory of Mrs. Elena B. Wolf for essays in the field of cancer research of treatment submitted by final year medical students. Awards in the amount of $75 and $50 will be presented for the two best essays as judged by a special committee appointed by the Dean of Medicine. Essays are to be submitted to the Office of the Dean of Medicine on or before March 31st of each year.

$75 and $50

Dr. W. ZaHaria Memorial Prize in Endocrinology

Eligibility: A student in the Faculty of Medicine who has shown the greatest competence in the laboratory and/or clinical aspects of Endocrinology, the selection of whom shall be made by the Council of the Faculty of Medicine.

Continuation and value of award to be determined.

NOTE: No one student in any year will be awarded more than one prize of monetary value, excluding competitive essay prizes and certain other prizes awarded by selection. Should a student qualify for more than one prize, he will be awarded the prize of greatest monetary value and any lesser prizes will then revert to the next eligible student.

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

7. FACULTY OF MUSIC

Alumni Gold Medal

For the graduating student with the highest standing in the Bachelor of Arts with Honors Music Program or the Bachelor of Music with Honors Program.

Gold Medal

Board of Governors Scholarships (2)

Awards for the students with the highest standing in the second and third years of the Bachelor of Music Honors program when no other scholarship is awarded.

$60 each

Faculty of Music Award

One award to be awarded to the music student gaining the highest marks on violin, viola, violoncello or double bass and who is not the recipient of any other scholarship.

London Women's Music Club Award

One award annually to a student of voice, piano, organ or string instrument.

St. Paul's Cathedral Choir Prize

To a student of composition for a musical setting of a text specified by the donors.

$50

University Gold Medal (c)

For a graduating student with the highest standing in a Bachelor of Music Honors program, when no other medal is awarded.

Gold Medal

NOTE: The above awards and scholarships are available to full-time students registered in the Faculty of Music. Music students may also be eligible for some of the medals, scholarships, awards and prizes listed under the section heading—Faculties of Arts, Science and Social Science.

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

8. FACULTY OF NURSING:

Alumni Gold Medal

Awarded annually. Selection is made by the Faculty of the Faculty of Nursing from among students with first class standing in the Bachelor of Science in Nursing programs.

Gold Medal

Registered Nurses' Association of Ontario Fellowship

For members of the R.N.A.O. enrolled in full-time graduate study. Enquiries are to be directed to Miss Laura W. Barr, Executive Director, Registered Nurses Association of Ontario, 33 Price Street, Toronto 289, not later than May 15th.

$3,500

St. John Ambulance Association of Canada — The Margaret MacLaren Memorial Fund

For Registered Nurses for study at the Masters level. Enquiries are to be directed to the Chairman of Bursary Funds, St. John Ambulance, 321 Chapel Street, Ottawa 2, not later than May 1st.

$1,000

The W.B. Saunders Company Canada Limited Nursing Fellowship

For a nurse undertaking advanced study in nursing. Availability of this fellowship is subject to the decision of the W.B. Saunders Company from year to year. Enquiries are to be directed to the Secretary Treasurer, Canadian Nurses' Foundation, 50 The Driveway, Ottawa 4.

$1,200

NOTE: Nursing students may also be eligible for some of the medals, scholarships, awards, and prizes listed under the section headings: Faculties of Arts, Science and Social Science.

Note: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

(C(FACULTY OF GRADUATE STUDIES:

For Information pertaining to medals, scholarships, awards, and prizes see the *Graduate Studies section of the composite calandar.*

III Scholarships Tenable at any Ontario University

H.J. Heinz Company of Canada Scholarship

For a student enrolled in the district high school of Essex and Kent Counties, on the basis of academic record or character. Applications are to be submitted to the principal of the school attended by May 1.

$2,000 ($500 for each of four years).

Imperial Leaf Tobacco Scholarship

For the highest standing in required Grade 13 credits; to students enrolled in East Elgin District High School and Delhi District High School. Applications are to be submitted through the appropriate high school principal.

$1,000 ($600 the 1st. year $400 the second year)

National Secretaries' Association Scholarship

For a student from a secondary school in Windsor or Riverside, Ontario, who registers in a Secretarial Science Program. Applications are to be submitted to the Scholarship Chairman, Windsor Chapter of the National Secretaries' Association, 1163 Pierre Avenue, Windsor, Ontario.

$100 payable the first year

IV Ontario Student Awards

The Ontario Student Aid Program is specifically designed to help full-time students of this province who lack adequate financial resources to pursue post-secondary education. Under the Ontario Student Awards Program (OSAP), the students are classified Group A (dependent) or Group B (independent). All applicants are classified Group A unless:

(a) The applicant has been married prior to the first day of the month of registration for the academic year for which he/she is requesting assistance.

(b) He/she is 24 years of age or over prior to the first day of the month of registration for the academic year for which he/she is requesting financial assistance.

(c) He/she was assessed as Group B prior to April 1, 1971.

OSAP is intended to supplement rather than replace family and/or student resources. In the case of a Group A applicant, the family and the student's resources are used in determining the amount of financial assistance required to meet the student's educational costs. A student's assessed resources include: an arbitrary amount for summer savings (e.g. $300 for a high school student proceeding to a post-secondary institution), interest on bonds or bank accounts, monetary gifts, the resale value of any motor vehicle owned or operated by the student (minimum $400) and a computed parental contribution. No parental

contribution is required for the Group B students. If, however, the Group B applicant is married and the spouse is employed then the resources will include the income for both student and the spouse for the twelve-month period (May 1 to April 30 inclusive). After the total of these student's resources has been deducted from the estimated costs of a year at college, university or other public post-secondary institution (see *Horizons* for details of costs), any loan-grant combination that may be awarded is comprised as follows:

a) the first $800 is allotted as loan only.

b) the balance, if any, beyond $800 is awarded as grant.

Therefore in a total award of $1200, for example, $800 is loan and $400 is grant. If residency and other requirements are met, the limit of a loan portion in Ontario for one year is normally $800. The minimum need for which a loan can be made is $50. The maximum award can be $2000 or more, depending upon actual educational costs. The loan portion which must be negotiated through a Canadian bank or other approved lending institution, is guaranteed by the Federal Government and is provided interest free until six months after the student either completes or discontinues full-time studies. The grant portion, which is paid by the Province of Ontario, is nonrepayable, provided the student completes his academic year. Awards over $150 received from other sources are deducted from the Ontario Student Award.

In order to qualify for OSAP assistance, a student must be accepted at an eligible post-secondary institution in a full-time program of studies of at least twenty-six weeks in duration, leading to a certificate, diploma or degree. The student must clearly establish that he and his family are unable (as distinct from unwilling) to provide the necessary funds, and both the student and his parents, guardians or sponsors must normally be permanent residents of Ontario. Further, the student must be a Canadian citizen or must have landed immigrant status with at least twelve consecutive months' residence in Ontario prior to first enrolling in the program for which assistance is required.

OSAP brochures and application forms may be obtained from the Student Financial Aid Office, Room 32, University Community Centre, University of Western Ontario, London. Completed applications must be submitted directly to the Student Financial Aid Office which is available to assist in any inquiries you may have in regard to this program. (Please note that, except for sample forms, OSAP applications are not available through secondary school guidance offices). Completion of the OSAP application form automatically secures consideration for the majority of awards administered by the University.

V Students From Foreign Countries

Students from foreign countries applying for admission to an undergraduate program of study, are advised that it is practically impossible to secure financial assistance through Canadian university sources. Such applicants should make inquiries through official channels in their own countries as to the possibility of aid from the United Nations Technical Assistance Program, the Colombo Plan, the Canadian International Development Agency, etc. American students should inquire about the various federal and state bursaries available to students.

VI Admission Bursaries

To be eligible for an admission bursary an applicant must be a full-time student and show genuine financial need. An average of 70% is generally required. The follwing are applied for before registration:

The Bobby Bauer Memorial Award

Available to students demonstrating outstanding proficiency in Hockey. Apply by August 31st to: The Bobby Bauer Memorial Foundation, 60 Victoria Street North, Kitchener, Ontario.

Up to the total expenses of one academic year depending on need

Brant County Medical Association Award

Brant County residents enrolled in a course leading ultimately to a degree in Medicine are eligible. Apply in writing to Dr. A.E. Croal, Brantford General Hospital, Brantford, Ontario, no later than October 12th.

$500

The Children of the War Dead (Education Association Act)

Provided for children of veterans whose death was attributable to military service. Application should be made to your District Office, Department of Veterans Affairs. The Canadian Legion and the Provincial Chapter of the Imperial Order Daughters of the Empire also offer some scholarships and bursary aid to children of deceased veterans. Apply through your local branch.

Fees and monthly allowances

Leonard Foundation Bursaries

Available to selected students in any year of any course. Preference is given to sons and daughters of clergymen, school teachers, members (active or retired) of Her Majesty's Armed Forces, graduates of the Royal Military College of Canada, members of the Engineering Institute of Canada, and members of the Mining and Metallurgical Institute of Canada. These bursaries are paid from the income of a Trust created by the late Lieutenant Colonel and Mrs. Rueben Wells of St. Catherines, Ontario. Application forms may be obtained from the Director of Financial Aid and must be filed by February 15th of the year preceding the award.

Up to $400 each (for from one to four years)

London Free Press Printing Company Limited Award

Renewable each year for scholarship satisfactory to the Selection Committee. Only students who have attended secondary schools in the 14 counties of Southwestern Ontario for three years or more and have demonstrated interest and ability in journalism are eligible. Submit applications to the London Free Press before June 1st.

$250 each and summer employment worth $1000 or more

Ontario Hockey Association Bursary

Available to students selected by the Awards Officer, in consultation with the Department of Physical Education, on the basis of need; and normally, some contribution made to amateur hockey in Ontario.

$100 payable the 1st year

O-Pee-Chee Company Bursaries

$500 each renewable for two additional years.

The Steel Company of Canada Bursaries

$500 each renewable for three additional years.

VII Restricted and Un-Restricted Bursaries

These bursaries are generally awarded to students who have an average of B or better in their previous year's work. In every case it is absolutely essential that the applicant demonstrate genuine financial need. Completion of an application form for the Ontario Student Awards automatically gains consideration for all the restricted and unrestricted bursaries except where otherwise stated.

A) FACULTIES OF ARTS, SCIENCE, SOCIAL SCIENCE, PHYSICAL EDUCATION

Atkinson Charitable Foundation Student Aid Funds

Students who are residents of Ontario are eligible.

Up to $200 each

A.T.A. Trucking Industry Educational Foundation Fund

Up to $250

The J.P. Bickell Foundation Bursaries

Students registered in the Department of Geology or in the Chemical Engineering Course.

Up to $500 each

Birks Family Foundation Bursaries

Up to $150 each

The Circle "K" Club Award

$100

The Isabel Dingman Memorial Bursary

Female students entering the third or fourth year of the Honors Journalism program are eligible for this bursary, which is a gift of the Canadian Women's Press Club, (London Branch).

$50

The Leslie W. Dunstall Educational Bursary (3)

Offered in competition annually. Open to full-time students registered in Actuarial Mathematics (G.P.2). Further information should be requested directly from: Director of Awards, Association of Canadian Universities and Colleges, 151 Slater Street, Ottawa. Completed applications must arrive at the above address not later than June 1 of each year.

$500 each

Mary Gillespie Memorial Bursary

This bursary is available to a woman in a senior year of the Secretarial program. It is awarded by a committee consisting of the Dean of Women, the Head of the Department of Secretarial Science, the Director of Financial Aid, and a member of the Executive of the London Centennial Chapter of the National Secretaries Association (International).

$100

The Maude Gordon Educational Fund

The purpose of this bursary is to assist deserving students from the counties of Elgin, Essex, Kent, Lambton, Middlesex, Huron, Oxford and Perth. This fund was established by a bequest of the late Miss Maude E. Gordon of Wallaceburg, Ontario.

Up to $500 each

The Greek Ladies' Philoptochus Society Award

This bursary is provided annually to a student of Greek descent.

$100

The Kathleen Gordon Hanna Educational Fund

The purpose of this fund is to assist deserving students from the counties of Elgin, Essex, Kent, Lambton, Middlesex, Huron, Oxford, and Perth. This fund was established by a bequest of the late Mrs. Kathleen Gordon Hanna of Wallaceburg.

Up to $500 each

Huron County Bursaries

These bursaries are available to students who have lived in Huron County for at least three years.

Up to $250 each

H.M.C.S. Prevost Student-Aid Award

$75

Hydro Electric Power Commission of Ontario

Available to students in the second year in Engineering, Business Administration, or Mathematics and Physics.

$500

The I.B.M. Thomas J. Watson Memorial Bursaries

Up to $200 each

I.O.D.E. (Eldon House Chapter) Bursary

$100

I.O.D.E. (Princess Patricia Chapter) Bursary

$100

I.O.D.E. (The Colonel G. Eric Reid Chapter) Bursary

$50

I.O.D.E. (Nicholas Wilson Chapter) Bursary

$100

I.O.D.E. (London Air Force Chapter) Bursary

Third year students in any branch of Honors Physics or any allied program are eligible for this bursary.

$100

I.O.D.E. (Dr. John Dearness Chapter) Bursary

Students in Honors Biology, preferably in a Mycology course, are eligible for this bursary.

$100

I.O.D.E. (Nina Moore Jamieson Chapter) Bursary

Students in the third year of the Honors Program in English and French are eligible for this bursary.

$100

I.O.D.E. (Municipal Chapter) Bursary

Students in any year of a degree program in Honors Science are eligible for this bursary.

$100

I.O.D.E. (Nicholas Wilson Chapter) Bursary

Students entering any degree program are eligible for this continuing bursary.

$100

Leonard Foundation Bursaries

Available to selected students in any year of any course. Preference is given to sons and daughters of clergymen, school teachers, members (active or retired) of Her Majesty's Armed Forces, graduates of the Royal Military College of Canada, members of the Engineering Institute of Canada. These bursaries are paid from the income of a Trust created by the late Lieutenant Colonel and Mrs. Reuben Wells of St. Catherines, Ontario. Application forms may be obtained from the Director of Financial Aid and must be filed by February 15th of the year preceding the award.

Up to $400 each (for from one to four years)

The Local 27 U.A.W. Bursary

$250

The John P. Metras Bursaries (2)

Male and female students will be considered on the basis of academic achievement and athletic ability, in that order.

Up to $150 each

The Olga Alice Miller Bursary

Available to a woman in any year of any program. The Selection Committee shall be the Dean of Women and the Director of Financial Aid. This bursary is a memorial to the late Olga Alice Miller who was a 1928 graduate in Honors English and History, and Assistant Registrar, 1933-51. It was established by her mother, Mrs. A.E. Miller and her sister, Helen.

$100

Oxford County Bursaries

Students from Oxford County, excluding Ingersoll and Woodstock, are eligible.

Up to $250 each

Perth County Bursaries

Students from Perth County, excluding St. Mary's and stratford, are eligible.

Up to $250 each

The Proctor and Gamble Company of Canada Bursaries
Up to $250 each

The James H. Rattray Memorial Trust Fund
Available to students in any year of a Science Program which includes English 20.
Up to $200 each

Royal Canadian Legion (London) Student-Aid Fund
Deserving undergraduates who are veterans or dependents of veterans are eligible.
Up to $200 each

The W.F. Thomas Student-Aid Fund
Preference is given to applicants whose residence is in St. Thomas or Elgin County.
Up to $300 each

The Undergraduate Women's Organization Bursary
Available to a woman in any year of any program selected by a Committee composed of the Dean of Women, the Director of Financial Aid, and the President and Chairman of the Undergraduate Women's Organization.
$100

The U.W.O. Alumni Association Bursary
Up to $400 each

Walter Wright Scholarships
Up to $250 each

The Masonic Foundation of Ontario Special Awards (see "Grants" Section)

The Joy Taylor Memorial Bursary
To be awarded to a woman student entering the third or fourth year of the Physical Education Program
Up to $150 each

B(PROFESSIONAL FACULTIES AND SCHOOLS:

NOTE: Students enrolled in the professional faculties and schools listed below are also eligible for many of the bursaries listed under the section heading—Faculties of Arts, Science, and Social Science.

1) SCHOOL OF BUSINESS ADMINISTRATION

F.J. Blackwell Memorial Bursary
Available to students registered in the School of Business Administration
Up to $150 each

I.O.D.E. (Nicholas Wilson Chapter) Bursary
Students enrolled in the final year of any Honors or Professional course are eligible for this bursary.
$100

2) FACULTY OF DENTISTRY:

Cooper Laboratories Award

May be awarded to dental students in second, third, or fourth year of the Dental Program. Academic Standing must be staisfactory and there must be demonstrated financial need. Applications should be made to the Director of Financial Aid.

$150, $100

Ontario Dental Association

May be awarded to students in any year of the course. Academic standing must be satisfactory and there must be a demonstrated financial need. Applications should be made to the Dean.

$500 provided. Maximum value of any one bursary is $250

I.O.D.E. (Nicolas Wilson Chapter) Bursary

Students entering any Honors or Professional course are eligible for this bursary.

$100

Royal College of Dental Surgeons Bursary

Students in any year of the course are eligible.

Up to $150 each

3) FACULTY OF ENGINEERING SCIENCE:

The J.P. Bickell Foundation Bursary

Students registered in the Department of Geology or in the Chemical and Biochemical Engineering course are eligible.

Up to $500 each

I.O.D.E. (Nicholas Wilson Chapter) Bursary

Students entering any Honors or Professional course are eligible for this bursary.

$500

Candain Bechtel Limited Bursaries

Available to a matriculant student entering the Engineering Science course.

Up to $150 each

The James H. Rattray Memorial Trust Fund

Available to students in any year of Engineering Science or a Science program which includes English 20.

Up to $200 each

4) FACULTY OF LAW:

Fred J. Blackwell Bursary Fund

Available to deserving students in any year of the Faculty of Law on the recommendation of the Faculty.

Up to $150 each

Harold G. Fox Education Fund

The benefactors have requested that a deserving undergraduate in the Law Program be selected for this bursary by the Faculty.

Up to $150.

I.O.D.E. (Nicholas Wilson Chapter) Bursary

Students enrolled in the final year of any Honors or Professional course are eligible for this bursary.

$100

The Law Society Foundation Bursaries

Available to law students in any year of the course, payable out of funds allocated to the University by the Foundation.

Up to $250

5) SCHOOL OF LIBRARY AND INFORMATION SCIENCE:

Ontario Graduate Fellowships

The Government of the Province of Ontario has allocated a number of graduate fellowships for M.L.S. candidates in Ontario universities. Graduates or final-year undergraduates, with at least second-class honors, are eligible to apply. Students who are studying on student visas do not come under the program.

Application forms are distributed by the Office of the Dean of Graduate Studies and must be submitted by the middle of February.

A Fellow receives an amount not to exceed $1500 for one academic session; he may also receive $750 for the summer term. The maximum amount is $3,000.

Ontario Regional Library Boards

A number of bursaries are offered by the Boards of Regional Library Systems in Ontario. Application should be made to the Director of one or other of Regional Library Boards. For information about bursaries and scholarships offered by Regional Library Boards in Ontario, write to:

—Algonquin Regional Library System, Mr. R.A. Smith, Director, 29 Mary Street, Parry Sound, Ontario.

—Eastern Ontario Regional Library System. Director, Ottawa Public Library, 114 Metcalfe Street, Ottawa 4, Ontario.

—Georgian Bay Regional Library System Board. The Secretary, Box 521, Barrie, Ontario.

—Lake Ontario Regional Library System. The Secretary, 88 Wright Crescent, Kingston, Ontario.

—Niagra Regional Library System. 59 Church Street, St. Catharines, Ontario.

—North Central Regional Library System Board. The Secretary, 19 Fir Street, Sudbury, Ontario.

—Southwestern Regional Library System. Mr. Fred Israel, Director, 434 Victoria Avenue, Windsor 12, Ontario.

Canadian Federation of University Women Professional Fellowship

One or two fellowships are available for a period of duration of one year to students of an accredited library school.

This fellowship is open to any woman holding a degree from a Canadian university, whose domicile is in Canada (a) who wishes to spend a year at an accredited Library School, School of Social Work, College of Education or similar professional school; ob (b) who wishes, after some years of experience in a chosen field or after a lapse of time away from formal study, to embark on a program leading to an advanced degree.

APPLY: Miss Christine Irvine, Dean of Women, Shirreff Hall, Dalhousie University, Halifax, Nova Scotia, Miss Irvine is Chairman of the Fellowship Committee.

$2,500

Council on Library Resources Fellowship Program 1972-73

The Council on Library Resources is offering a limited number of fellowships and internships to mid-career librarians of the United States and Canada who have demonstrated a strong potential for leadership in the profession. The purpose of the grants is to enable successful candidates to improve their competence in the substantive, administrative and/or technical aspects of their profession. A few candidates may find an internship experience in a particular institution the most profitable use of the fellowship opportunity.

The awards are intended to cover costs during a period of continuous leave, which may range in time from a minimum of an academic quarter up to nine months. They do not cover salaries but are for such items as travel, per diem for living expenses, supplies and equipment incident to a Fellow's program. It is expected that his salary while on leave of absence will be paid by his parent institution.

In reviewing applications the Committee will place emphasis on the thought and care given to the development of the proposed program of study, investigation, training, or internship as well as on the candidate's professional qualifications. The fellowships are not intended to support work toward an advanced degree in librarianship, although course work which complements a candidate's program and is outside the normal professional curriculum may be considered.

Interested librarians may receive an application form by writing to:

The Fellowship Committee
Council on Library Resources
One Dupont Circle, Suite 620
Washington, D.C. 20036

The Committee will also welcome nominations of candidates for the awards.

Completed applications must be received no later than December 1, 1971. The awards will be announced on or about April 1, 1972. Successful candidates must complete their fellowships prior to October 1, 1973.

NOTE: Financial support is also available in the form of library and computer assistantships which require duties in the School. In addition, there is the possibility of part-time work in other London libraries.
Information about loans may be obtained from the Student Financial Aid Officer,
University Community Centre,
University of Western Ontario, London 72, Ontario.

6) FACULTY OF MEDICINE:

The American Medical Association Education and Research Foundation Bursary

Available to students in any year of Medicine.

Up to $200 each

Dr. James L. Anderson Memorial Bursaries

Available to students in any year in the Faculty of Medicine. The fund for these bursaries was established by a bequest of the late Mrs. Clare Leland Anderson as a memorial to her husband, Dr. James L. Anderson, Meds '09.

Up to $250 each

Bradshaw-Errington Fund

Available to students in any year of Medicine who reside twenty-five miles or more beyond the corporation limits of the City of London.

Up to $250 each

The Dr. Frank M. Cole and Dr. M. Cole Memorial Awards

These bursaries are available to students entering the third year of Medicine.

$200 each

Co-operative Medical Association of Ontario Bursary

Available to students in any year of Medicine who are members, or the sons or daughters of members, of one of the Medical Co-operatives of the Co-operative Medical Services Federation of Ontario. Apply by October 10th.

$500 a year to a maximum of $2000

Essex County Medical Association Bursary

Available to a resident of Essex County who has been accepted in the first year of Medicine at a Canadian University. Apply directly to: Ethics and Credentials Committee, Essex County Medical Association, 1427 Ouellette Avenue, Windsor, Ontario.

$750

Dr. F. Haasz Medical Student-Aid Bursaries

Available to students in any year of medicine.

Up to $250 each

I.O.D.E. Bursaries

Students entering Medicine are eligible for following continuing I.O.D.E. Bursaries.

The Colonel Willian Gartshore Chapter

$100

Bishop Hellmuth Chapter

$100

Nicholas Wilson Chapter

Students entering any Honors or Professional Program are eligible for this bursary.

$100

The London District, Canadian Physiotherapy Association Bursary

Available to any student in the final three years of the Four Year Program in Physical Therapy, at The University of Western Ontario. The bursary will be awarded on the basis of need and scholastic standing. Inquiries should be sent to the president, London District, Canadian Physiotherapy Association, P.O. Box 2011, London, Ontario by September 30th.

$100

The Dr. I.W. Mann Award

Available to a student in family medicine who best exemplifies scholastic achievement and monetary need.

Up to $450

The Bill McKibbon Bursary

A male student, preferably from South-Western Ontario, is to be selected by the Secretary of the Loans and Bursaries Committee and the donor. Academic standing and personality will count equally in the selection. This bursary was endowed by the late Dr. Walton McKibbon of Wingham, a medical graduate of this university, in memory of his son.

$500 each year throughout Pre-Medicine and Medicine

Medical Students Bursary Plan, Ontario Department of Health

A number of bursaries are available to students who have completed their first year in Medicine. Maximum assistance will not exceed three years for any one student. Every recipient of this bursary has an obligation to practise general Medicine in a location acceptable to the Minister of Health, one year for each year of bursary assistance given. Apply at end of first year or later.

$3,000 each

The Meds'50 Bursary Fund

Available to students in any year of medicine.

Up to $300 each

The M.C. Mowry Memorial Bursary

Available to students in the fourth year of medicine.

$75

Ontario Medical Association Bursary and Loan Fund

Available to students in the first and second years of Medicine.

Up to $350 each

Maud H. Smallman Awards (2)

Available to students in any year of Medicine. The fund for these Awards was established by a bequest of the late Mrs. Maud H. Smallman of London, Ontario.

$500 each

7) FACULTY OF MUSIC:

Lady Eaton Bursaries

Students registered in the College of Music or in the General Arts course with Music Options are eligible.

Up to $250 each

I.O.D.E. (Harriet Boomer Chapter) Bursary

Students enrolled in the College of Music are eligible.

$100

Gordon V. Thompson Bursary

$100

Waterloo Music Company Bursary

$500

I.O.D.E. (Nina Moore Jamieson Chapter) Bursary

Students enrolled in the Faculty of Music are eligible.

$100

8) FACULTY OF NURSING:

Alumnae Association Royal Victoria Hospital School of Nursing Bursary

For Graduates of the Royal Victoria Hospital School of Nursing accepted in an approved University program. Application before March 31 to: Alumnae Office, Nurses' Home, Royal Victoria Hospital, Montreal.

$1,000

Faculty Association Award

For the student with the highest academic average in Year 3 of a Bachelor of Science in Nursing program.

I.O.D.E. (Dr. David Crombie Chapter) Bursary

For a student registered in the Faculty of Nursing. Enquiries are to be directed to the Awards Officer, University Community Center, The University of Western Ontario, 1151 Richmond St., London, Ontario, N6A 3K7

$100

Miss Helen Marion Cole RN Memorial Bursary

For students in the penultimate year of a nursing program. Enquiries to be directed to the Awards Officer, University Community Center, The University of Western Ontario 1151 Richmond Street, London, Ontario, N6A 3K7

$100

Ontario Department of Health Bursaries

Bursary assistance to study public health nursing at university will be available to those nurses who meet the following criteria:

1. Registration with the College of Nurses in Ontario
2. Acceptance by a recognized university school of nursing
3. Canadian citizenship or landed immigrant status
4. Satisfactory work references
5. Sponsorship by a local official health agency

Assistance may be granted for the last two years of a post R.N. program. For each academic year of assistance, the student must return twelve months of service to her sponsoring agency.

Assistance may be granted for study at the master's level. For information write to: Senior Consultant, Public Health Nursing, Local Health Services Branch, Department of Health, Hepburn Block, Queen's Park, Toronto 182, Ontario

Tuition fees plus living allowance.

Registered Nurses' Association of Ontario Loan Fund

For members of the R.N.A.O. for a minimum of one year, registered in university study. Enquiries are to be directed to Miss Laura W. Barr, Executive Director, Registered Nurses' Association of Ontario, 33 Price Street, Toronto 289, not later than May 15th.

Up to $1,000 interest free for three years.

The Mildred I. Walker Bursary

For a nursing student in a Bachelor of Science in Nursing program. Enquiries are to be directed to the Awards Officer, University Community Center, The University of Western Ontario, 1151 Richmond Street, London, Ontario, N6A 3K7.

Up to $500

The W.B. Saunders Company Award

For the student in the final year of a Bachelor of Science in Nursing program who has achieved the highest average in the nursing courses of the second and third years.

The W.B. Saunders Company Canada Limited Nursing Fellowship

For a nurse undertaking advanced study in nursing. Availability of this fellowship is subject to the decision of the W.B. Saunders Company from year to year.
Enquiries to be directed to the Secretary Treasurer, Canadian Nurses' Foundation, 50 The Driveway, Ottawa K2P 1E2

$1,200

Victorian Order of Nurses for Canada (National) Bursaries

For students in the final year of a baccalaureate program which includes preparation in public health nursing and for graduate nurses taking post-basic preparation in public health nursing. Enquiries are to be directed to the Director In Chief, Victorian Order of Nurses for Canada, V.O.N. House, 5 Blackburn Avenue, Ottawa K1N 8A2

$1,800

Victorian Order of Nurses, Brantford Branch Bursaries

For students registered in the final year of a Bachelor of Science in Nursing program who intend to serve with the Victorian Order of Nurses, Brantford Branch, if required, and if not for one year at a branch to be designated by the National Victorian Order of Nurses. Enquiries are to directed to Victorian Order of Nurses, Brantford Branch, 194 Terrace Hill, Brantford.

$1,500

Victorian Order of Nurses Hamilton-Dundas Branch Bursaries

For students registered in the final year of a Bachelor of Science in Nursing program who intend to serve with the Victorian Order of Nurses, Hamilton-Dundas Branch. Enquiries are to be directed to Victorian Order of Nurses, Hamilton-Dundas Branch, 29 Augusta Street, Hamilton 20.

$1,500

Victorian Order of Nurses, Metropolitan Toronto Branch Bursaries

For students registered in the final year of a Bachelor of Science in Nursing program who intend to serve with the Victorian Order of Nurses, Metropolitan Toronto Branch. Enquiries are to be directed to the Director, Victorian Order of Nurses, Metropolitan Toronto Branch, 277 Victoria Street, Toronto 200.

$1,000

Victorian Order of Nurses Windsor-Essex Branch Bursaries

For students registered in the final year of a Bachelor of Science in Nursing program who intend to serve with the Victorian Order of Nurses, Windsor-Essex County Branch, for a minimum of one year. Enquiries are to be directed to Victorian Order of Nurses. Windsor-Essex County Branch, 410 Giles Boulevard East, Windsor.

$1,000

NOTE: Nursing students may also be eligible for some of the medals, scholarships, awards, and prizes listed under the section headings: Faculties of Arts, Science and Social Science.

NOTE: The University reserves the right to modify or cancel Scholarship offerings after the date of printing of this publication.

VIII Grants

A "grant" is an award to a student who demonstrates financial need and who has a satisfactory academic standing.
Completion of an application form for the Ontario Student Awards automatically secures consideration for the following grants which are described in the preceding bursary section:

A.T.A. Trucking Industry Bursary Fund

The Atkinson Charitable Foundation Student-Aid Fund

The Circle "K" Club Award

The Maude Gordon Educational Fund

The Greek Ladies' Philoptochus Society Award

The Kathleen Gordon Hanna Educational Fund

H.M.C.S. Prevost Student-Aid Fund

The Royal Canadian Legion (London) Student-Aid Fund

The W.F. Thomas Student-Aid Fund

The Masonic Foundation of Ontario Special Awards

The Masonic Foundation makes available funds to assist deserving students who encounter unexpected difficulties in their second term. Application forms are available from the Director of Financial Aid.

IX Loans

To be eligible for a loan a student must have a satisfactory academic record and be able to show that he cannot continue his studies without financial assistance. Application should be made through the Director of Student Financial Aid.

Canada Student Loans Plan

Full details of this Plan are available in a brochure issued by the Government of Canada which may be obtained at all eligible post secondary institutions in Ontario. Ontario residents see Ontario Student Awards.

University Loan Funds

Up to $400. Available to full-time students in the final year of any program.

Commercial Bank Student Loans:

Several Canadian banks make money available to students for educational purposes. Interested students should consult the bank of their choice.

Ontario Medical Association Grant-In-Aid Fund:

Loans from this fund are interest-free and are on the honor system requiring no formal contract to repay. Available to students in the third and fourth years of Medicine.

The Dean Russell Medical Student-Aid Fund:

Up to $400 each. Available to students in any year of Medicine. This fund was established by the late Mr. Dean Russell of Dean Russell Drugs Ltd. to provide small grants or interest-free loans.

Maude Abbott Memorial Scholarship Loan Fund:

This fund has been established by the Federation of Medical Women of Canada. Loans of up to $350 per year are available to any woman medical student or first year interne. A second loan up to $350 may be granted to a previous recipient. In special cases, a loan up to $1,000 may be granted to a medical woman for postgraduate training. Loans are payable within seven years of date of issuw, after which time interest will be charged in the rate of 5% compounded annually. Information regarding these loans may be obtained from Dr. Alice E. Gray, Director of Laboratories, Women's College Hospital, 76 Grenville Street, Toronto, Ontario.

Notes:

More information regarding Financial Aid may be obtained by writing to: Director of Student Financial Aid, University Community Centre, The University of Western Ontario, London 72, Canada.

FACULTY

Abu Sitta, S. H., BSc Cairo; PhD London; PEng — *Engineering Science.*
Adamson, D. H., MB ChB Edin; FRCP(c) — *Anaesthesia.*
Adilman, B., BA Sask; MD Alberta; FRCP(c) — *Pathology.*
Agnos, J. W., MD UWO; DMR Toronto; CRCP(c) — *Diagnostic Radiology.*
Ahmad, D., LRCP(&)SI, MRCPI, CRCP(c) — *Medicine.*
Ahuja, S. P., MB BS Nagpur; DTM&H(Eng), FRCP(c) — *Medicine.*
Aikenhead, D. E., MD Manitoba; MRCP London; FRCP(c) — *Medicine.*
Aitken, R. R., MD UWO; CRCP(c) — *Anaesthesia.*
Albers, H. J., MD Dusseldorf; CRCP(c) — *Medicine.*
Aldis, R. M., MD UWO; DPH Toronto — *Epidemiology & Preventive Medicine.*
Aldrich, P., LTCL Trinity, LRSM Royal Schools, London, England: Premier Prix, Luxembourg — *Music.*
Aldrich, R. F., LRSM, LGSM, London, England: MusBac, Victoria, Wellington N. z. — *Music.*
Ali, M. M., BSc, MSc Dacca; MA Michigan; PhD Toronto — *Mathematics.*
Allcock, J. M., MRCS, LRCP(Eng), MB, BS London; DMed(Eng), FFR — *Diagnostic Radiology.*
Allen, H. H., MD UWO; FRCS(c) — *Obstetrics & Gynaecology.*
Allison, G. F., BA Queens; MA, MEd, Toronto — *Professional Practice & Administration Althouse.*
Allnatt, A. R., BSc, PhD, London — *Chemistry.*
Altmann, G. G., BSc Dalhousie; MSc, PhD McGill — *Anatomy.*
Amacher, A. L., MD UWO; FRCS(c) — *Clinical Neurological.*
Anderson, A. R., BA Toronto; PhD Brown — *German.*
Anderson, J. M., LRAM Royal Acadamy, London, England; BM Nottingham; MM Eastman — *Music.*
Anderson, N. R., BA, PhD Washington — *Psychology & Sociology Althouse.*
Anderson, R. J., MD UWO; FRCS(c) — *Obstetrics & Gynaecology.*
Andresino, M., AB Canisius College; MA Columbia Teachers College; MA Ohio State — *Psychology & Sociology Althouse.*
Andrews, W. N., MB ChB New Zealand; CRCP(c) — *Psychiatry.*
Annett, R. K., MD UWO — *Family Medicine.*
Aronsen, D. C., Reg N; BSc St Xaviers, Chicago; MScN UWO — *Nursing.*
Archibald, T. R., BA UWO; MBA, PhD, Chicago; CA(Ontario) — *Business Administration.*
Archibald, W. P., BA Mount Allison; MA UBC; PhD Michigan — *Sociology.*
Armstrong, D. T., BSA Toronto; MS, PhD Cornell — *Physiology.*
Armstrong, F. H., BA, MA, PhD, Toronto — *History.*
Arnold, B. J., BA UWO; JD Harvard — *Law.*
Arnold, D. R., BS Bethany; PhD Rochester — *Chemistry.*
Arnold, I. A., BA London; MA UBC; PhD Toronto — *French.*
Arnold, L. E., BA Leeds; MA Simon Fraser — *English.*
Asensio, J., Lic, Dr Fil y Let Madrid — *Spanish Italian.*
Atance, F. R., BA Toronto; MA Nebraska; PhD UWO — *French.*
Atkinson, B. G., BA Steubenville; PhD Connecticut — *Zoology.*
Atkinson, D., MD UWO; FRCP(c) — *Paediatrics.*
Atkinson, W. E. D., BA Cantab; PhD Chicago — *English.*
Aufreiter, J., MD Vienna — *Psychiatry.*
Auksi, P., BA Toronto; BA,MA Oxon; AM,PhD Harvard — *English.*
Avery, D. H., BA,BEd,MA Manitoba — *History.*

Avio, K. L., BS Oregon; PhD Purdue — *Economics.*
Avotins, I., BA Toronto; MA,PhD Harvard — *Classical Studies.*
Babb, J. W., BA,MD UWO; CRCS(c) — *Otolaryngology.*
Babiak, W., MD Kiel; DPsych, Toronto — *Psychiatry.*
Bacal, H. A., BA,MDCM McGill — *Psychiatry.*
Baguley, D., BA Nottingham; MA Leicester,DU Nancy — *French.*
Bailey, R., BA Toronto — *Business & Commerce Althouse.*
Bailey, W. H., BA,MD UWO; FRCS(c) — *Surgery.*
Bain, J. A., MD UWO; CRCP(c) — *Anaesthesia.*
Baird, K. M., OBE CD; DDS Toronto; FICD — *Dental Clinics.*
Baird, N. C., BSc, PhD, McGill — *Chemistry (Photochemistry).*
Baker, C. G., BSc, DIC, PhD, London — *Engineering Science.*
Baker, K., ARCT Toronto; AMus, MusBac, UWO; MM Eastman — *Music.*
Baker, P. G., BA, MA Toronto — *English.*
Bakerspigel, A., BA, MA McMaster; PhD UWO — *Bacteriology.*
Balakrishnan, T. R., BA, MA Madras; PhD Michigan — *Sociology.*
Balderston, W., BA, PhD Cornell — *History, History Of Science.*
Baldwin, H. W., BA, MA Saskatchewan; PhD Chicago — *Chemistry; University Research Council.*
Baldwin, M. M., BA, MA, UWO — *Modern Languages Althouse.*
Ball, J. K., BSc Mount Alhson; MSc, PhD Dalhousie — *Cancer Research.*
Ball, M. J., MD Toronto; CRCP(c) — *Pathology (Meek Lab).*
Ballantyne, J. F., MD Toronto; FRCS(c) — *Ophthalmology.*
Balogh, L. V., BA, LLB Saskatchewan — *Law.*
Balse, M. L., BA, MA, PhD Bombay; Du Paris — *French.*
Bambrick, F. K., BA UWO; MA Michigan State — *Journalism.*
Bancroft, G. M., BSc, MSc, Manitoba; PhD CANTAB — *Chemistry.*
Bandeen, B. I., BA UWO; AM, PhD Radcliffe — *English.*
Banerjee, P., MBBS Calcutta; DMRT(Eng), FFR(Eng) — *Therapeutic Radiology.*
Banting, D. W., DDS, DDPH, MSc Toronto — *Social Dentistry.*
Baran, D., BA McGill; MA Columbia; PhD Michigan — *Psychology.*
Barker, A. E., BA, MA Toronto; PhD London — *English.*
Barnard, F. M., BA, MA Oxon; PhD Leicester — *Political Science.*
Barnett, H. J. M., MD Toronto; FRCP(c) — *Clinical Neurological Science.*
Barney, R. K., BSc, MSc, PhD, New Mexico — *Intercollegiate Athletics.*
Barr, H. W. K., BSc(Med) Toronto; MD UWO; FRCS(c) — *Clinical Neurological Science.*
Barr, M. L., OC; BA, MSc, MD UWO; LLD Queens, Toronto; Alberta; Dalhousie; Dr med.h.c. Basel; FRCP(c) — *Anatomy.*
Barr, R. M., MD UWO; FRCP(c) — *Medicine.*
Barton, P. G., BScF, Toronto; LLB Queens; LLM Harvard — *Law.*
Barton, W. B., MD UWO; FRCP(c) Dipl Int Med, McGill — *Medicine.*
Bartram, E. A., MD UWO — *Medicine.*
Basavarajappa, K. G., BSc, Mysore; MSc Karnatak; PhD Australian National — *Sociology.*
Base, T. E., BSc Bristol; MSc Brown; PhD Southampton — *Engineering Science.*
Bass, R. W., BA UWO — *Althouse Practice Teaching.*
Baskerville, J., BS Suny at Cortland; MS Purdue; PhD Cornell — *Mathematics.*
Bates, R. G., BA, MA, PhD Toronto — *English.*
Battle, H. I., BA, MA UWO; PhD Toronto — *Zoology.*
Baumann, H. G. — *Economics.*
Baxter, R., MA, MBBChir Cambridge; MRCS(Eng) LRCP — *Family Medicine.*

Beam, L. A., DDS Toronto — *Oral Medicine.*
Beaman, E., AB Cincinatti — *Philosophy.*
Beamish, G. — *Music.*
Beatty, H. W., BPHE Toronto — *Vocational Education Althouse.*
Beck, A. E., BSc London; PhD Austraham National — *Geophysics.*
Becker, H. J., BA Saskatchewan; MS Wisconsin — *Fine Art.*
Beckhoff, G., Dipl Ing Aachen; MSc Southern Methodist; — *Computer Science.*
Bedrosian, G. A., DDS Toronto; BSA Guelph — *Restorative Dentistry.*
Beeckmans, J. M., BSc London; MASc, PhD Toronto — *Engineering Science.*
Beecroft, E. A., BA, MA Toronto; PhD Yale — *Political Science.*
Begg, R. A., DDS Toronto — *Paediatric Dentistry.*
Bell, D. A., MD UWO — *Physical Medicine & Rehabilitation.*
Bell, J. H., DDS Toronto — *Pathology.*
Belladonna, R., BA London; Dott ling e lett Mod Genoa — *Spanish Italian.*
Bennett, J. M., BSc Queens; MA, PhD UWO — *Computer Science.*
Bergering, A. J., BA, MA UWO — *Psychology & Sociology Althouse.*
Bergougnou, M. A., MA, MS Nancy; PhD Minnesota — *Engineering Science.*
Berkeley, J., MBChB, DPH, MD Glasgow; CRCP(c) — *Physical Medicine & Rehabilitation.*
Bernotas, N., BA UWO; MA Toronto — *Russian Studies.*
Bernstein, P., MDCM Queens; CCFP — *Family Medicine.*
Berry, R. A., BA UWO; PhD Princeton — *Economics.*
Bhatia, K. B., BComm, MComm Delhi; PhD Chicago — *Economics.*
Bidinosti, D. R., BSc, MSc, Manitoba; PhD McMaster — *Chemistry.*
Biehn, J., MD UWO — *Family Medicine.*
Bieman, H. E., BA, MA UWO — *English.*
Biesenthal, R. B., DDS Tennessee — *Paediatric Dentistry.*
Bigelow, C. C., BASc Toronto; MSc, PhD McMaster — *Biochemistry.*
Biggs, R. G., BSc Stanford; PhD UBC — *Mathematics.*
Bignell, D. E., BSc, PhD Nottingham — *Zoology.*
Binkley, R. W., BA Colorado; PhD Minnesota — *Philosophy.*
Binns Smith, M., MB, ChB, PhD Edinburgh — *Clinical Biochemistry.*
Bishop, P., BSA (OCA), BASc Toronto; MBA UWO; DBA Harvard — *School Business Administration.*
Bjorklund, E., BSc Utah; MA Washington; PhD Chicago — *Geography.*
Black, J. H. D., MB, Bch Dublin; MRCI, FRCD(c) — *Diagnostic Radiology.*
Black, W. A., MB, ChB Glasgow; MRCPath — *Bacteriology.*
Blackburn, J. A., BSc Manitoba, MSc, PhD Waterloo — *Applied Mathematics.*
Blackwell, J. H., ED; BSc Melbourne; MSc, PhD UWO — *Applied Mathematics.*
Bliss, I. E., BSc, BEd New Brunswick — *Physical Education Althouse.*
Block, I. L., BA Vanderbilt; AM, PhD Harvard — *Philosophy.*
Blomqvist, A. G., Civ-ekonom Stockholm; PhD Princeton — *Economics.*
Blume, W. T., BA Princeton; MDCM McGill; FRCP(c) — *Paediatrics.*
Bocking, D., MD UWO; FRCP(c), FACP — *Dean of Medicine.*
Bode, A. E., BA, MA, Saskatchewan — *Mathematics.*
Bodkin, R., BA, Swarthmore; MA, PhD, Pennsylvania — *Economics.*
Boersema, J. M., BA UWO — *Business Administration.*
Boles, J. I., BA Cornell College; PhD Indiana — *Psychology.*
Bolgan, A. C., BA D'Youville; MA, PhD Toronto — *English.*
Bolter, C. P., BSc Bristol — *Physiology.*
Bolter, J., BPE British Columbia; MA UWO — *Physical Education Undergraduate Progrram.*

Bolton, C. F., MDCM Queen's; MS Minnesota; FRCP(c) — *Clinical Neurological Science.*
Bolton, J. R., BA, MA Saskatchewan; PhD Cantab; — *Chemistry.*
Bolton, R. J., MD Queen's; FRCP(c) — *Paediatrics.*
Bonario, B., BS Texas; MA Michigan — *Fine Art.*
Bondy, D. C., MD UWO; FRCP(c) — *Physiology.*
Bonnema, T., BSc Queen's MASc Toronto; PhD Purdue; P Eng — *Engineering Science.*
Booth, J. C., BA, MA, PhD Florida — *Communication Disorders.*
Borda, I. T., MD Budapest; FRCP(c) — *Pharmacology.*
Borwein, D., BSc Witwatersrand; PhD, DSc London; FRSE — *Mathematics.*
Bosch-domenech, A., Licenciado, Barcelona — *Economics.*
Boughner, D. R., MD UWO; PhD UWO; FRCP(c) — *Biophysics.*
Bournes, T. K., BA, MA British Columbia; PhD Rutgers — *Zoology.*
Bow, Y. F., BSc National Chakiang; MS, PhD Michigan State — *Physics.*
Bowker, C., BA, MA Toronto — *French.*
Boyadjian, S., BSc, MSc London — *Biochemistry, Dentistry.*
Boyce, R. M., MD UWO; D Psych Toronto; CRCP(c) — *Psychiatry.*
Boyd, J. A., BA Toronto — *Modern Languages Althouse.*
Boydell, C. L., BA Rutgers; MA, PhD Massachusetts — *Sociology.*
Boyer, R. S., BA Columbia; MA Wisconsin; PhD Chicago — *Economics.*
Bracey, J. P., BM Converse; MM Eastman — *Music.*
Brady, P., MD Toronto; FCFP — *Family Medicine.*
Brand, J. C. D., BSc, MSc, PhD, DSc London — *Chemistry (Photochemistry).*
Brandt, G. J., BA, LLB Saskatchewan; MA Oxon; of Osgoode Hall (Barrister-at-Law) — *Law.*
Brannen, E., BA, MA Toronto; PhD McGill — *Physics.*
Brash, S. W., MB, BS Western Australia; FRACS, FRCS(c) — *Surgery.*
Bratuz, D., Master's Diploma in Piano (Trieste); MM St. Louis; Mus Doc Indiana — *Music.*
Bray, K., Mus, Bac Toronto; MM Eastman — *Music.*
Brennan, M., LRCP & SI — *Family Medicine.*
Brien, F. S., BA, MB Toronto; FRCP London; FRCP(c), FACP — *Medicine.*
Britney, R. R., BESc, MBA Bowling Green; DBA Indiana.
Brizio, V. M., BA, Dott Fa Bologna — *Spanish & Italian.*
Broege, V. A., BA Vassar; MA, PhD Bryn Mawr — *Classical Studies.*
Bronaugh, R. N., BA Oregon; MS, PhD Wisconsin — *Philosophy.*
Brooke, R. I., BChD, LDS Leeds; MRGS (Eng), LRCP (London); FDS, RCS — *Oral Medicine.*
Brooks, V. B., BA, PhD Toronto; MS Chicago — *Physiology.*
Brown, B. G., RegN, BScN, MN Washington — *Nursing.*
Brown, E. G., DDS Toronto — *Restorative Dentistry.*
Brown, J. D., BSc McMaster; PhD Maryland — *Engineering Science.*
Brown, J. D., BSc (Med), MD, PhD Manitoba — *Clinical Neurological Science.*
Brown, L. S., RegN, BScN, MSN Western Reserve — *Nursing.*
Brown, M. M., BA, MA — *English.*
Brown, T. C., MD, CRCP(c) — *Diagnostic Radiology.*
Brown, T. M., BA, MA Toronto; PhD Australian National — *Economics.*
Brown, W. F., MD, FRCP(c) — *Clinical Neurological Science.*
Brownstone, Y. S., BScA, MSc Manitoba; PhD McGill — *Clinical Biochemistry.*
Brubacher, L., BA Goshen; MD — *Family Medicine.*
Bruen, A., BSc, MSc Dublin; PhD Toronto — *Mathematics.*

Brunet, J. P., LesL, DES Sorbonne — *French.*
Bryan, R. N., BA, MA, PhD Utah — *Mathematics.*
Bryant, W. E., MD, FCFP — *Family Medicine.*
Bub, J., BSc Capetown; PhD London (Birkbeck) — *Philosophy.*
Bucher, B., AB Knox; PhD Princeton; PhD Pennsylvania — *Psychology.*
Buck, C., MD, PhD, DPH London — *Epidemiology & Preventive Medicine.*
Buck, R. C., MD, MSc, PhD London — *Anatomy.*
Buckley, G. E., BA Mount Allison; MA Columbia — *English.*
Bulani, W., BSc, MSc Saskatchewan; PhD McGill; PEng — *Engineering Science.*
Bunston, H. G., DDS McGill — *Restorative Dentistry.*
Burgess, D. F., BA Queen's; MA, PhD Wisconsin — *Economics.*
Burghardt, W., BA, MA Toronto.
Burgoyne, D., BA, MBA — *Business Administration.*
Burke, D. R., BA, MA New Mexico, Albequerque; PhD Michigan State — *Philosophy Althouse.*
Burley, K. H., BA, PhD London — *Economics.*
Burnett, W. H., MD Toronto; FRCS(c) — *Otolaryngology.*
Burt, W. L., MD, FRCS(c) — *Ophthalmology.*
Burton, A. C., MBE, BSo London; MA, PhD Toronto; LLD Alberta; FRSC — *Biophysics.*
Busby, S. M., MD, CRCS(c) — *Surgery.*
Bush, W. S., AB John B. Stetson; MA South Dakota; DU Paris — *French.*
Bushnell, S. I., BSA Toronto; LLB Dalhousie; LLM Osgoode Hall — *Law.*
Butler, R. W., BA Nottingham — *Geography.*
Butler, W. E., BSc, MD — *Family Medicine.*
Butlin, G. R., MD Del Litoral; CRCP(c) — *Anaesthesia.*
Butson, F. J., MD — *Family Medicine.*
Butts, R. E., AB, AM Syracuse; PhD Pennsylvania — *Philosophy.*
Calaresu, F. R., BA Pavia; MD Milan; PhD Allberta — *Physiology.*
Calbert, J. P., Lic Agreg Louvain; PhD Indiana — *German.*
Callaghan, N. L., BA, MA — *Mathematics.*
Cameron, H., MB, ChB Edin; CRCP(c) — *Anaesthesia.*
Cameron, H. S., MD, FRCS(c), FACSs — *Surgery.*
Cameron, M. A. S., BA, MA Liverpool — *Fine Art.*
Cameron, M. G. P., MD Toronto; FRCP(c) — *Physical Medicine & Rehabilitation.*
Cameron, S. E., BA (PT) Manitoba; MCSP, MCPA — *Physical Therapy.*
Cameron, W. J., BA, MA Victoria, N. Z.; PhD Reading — *Dean of the School of Library & Information Science.*
Cameron, W. M., MD, FRCP(c) — *Medicine.*
Campbell, D. A., DS Dip Orth Toronto — *Paediatric Dentistry.*
Campbell, D. R., BA — *Mathematics.*
Campsall, E. W. R., BA Queen's; MDCM McGill — *Bacteriology & Immunology.*
Canham, P. B., BASc Toronto; MSc Waterloo; PhD — *Biophysics.*
Carbone, M. E., BA, MA — *Classical Studies.*
Carey, L. S., MDCM, MSc(Med) Queen's; MS Minnesota; CRCP(c) — *Diagnostic Radiology.*
Carlson, P. M., BS Wisconsin; PhD Washington — *Psychology.*
Carmichael, C. M., BSc, MSc, PhD — *Geophysics.*
Carroll, J. M., BSc LeHigh; MA Hofstra; PhD New York — *Computer Science.*
Carroll, K. K., BSc, MSc New Brunswick; MA Toronto; PhD — *Biochemistry.*
Carroll, S. E., BA, MD, FRCS(c), FACC, FACS, FACCP — *Surgery.*
Carson, E. H. A., MA Toronto; of Osgoode Hall; (Barrister-at-Law) — *Law.*

CARTER, R. A. L., BA, RMC, MA, PhD Queen's — *Economics.*
Cartwright, J., BA Queen's; MA, PhD Toronto — *Political Science.*
Casaubon, T. J., BA Laval — *Office of Dean Althouse.*
Cass, F. P., BSc, MSc Victoria, N. Z.; PhD — *Mathematics.*
Castle, G. S. P., BESc, PhD, MSc, DIC London; PEng — *Engineering Science.*
Caveney, S., BSc Witwatersrand; DPhil Oxford — *Zoology.*
Cavers, P. B., BSA Toronto; PhD Wales — *Plant Sciences.*
Cecil, R. G., BSc, MA McGill — *Geography.*
Chamberlain, L. W., BSc, PhD Keele — *Psychology.*
Chamberlain, M. J., MRCS, LRCP London; MB, ChB Birmingham; MRCP London — *Medicine.*
Chambers, D. A., BA British Columbia; MSc, PhD McGill — *Faculty Social Science; Psychology.*
Chambers, E. J., BA British Columbia; MA Saskatchewan — *Political Science.*
Chan, L. K., BSc Hong Kong Baptist; MA, PhD — *Mathematics.*
Chan, R. K., BA, PhD Toronto — *Chemistry.*
Chapin, D. F., BA, MA, PhD Toronto — *English.*
Chapman, C. G., BA McMaster — *Assistant Registrar Althouse.*
Cheevers, W. P., BA Colorado; PhD Mississippi — *Cancer Research.*
Chefurka, P. M., BSc Manitoba; MS Montana State — *Physics.*
Chefurka, W., BSc Manitoba; MSc Montana State; PhD Harvard — *Biochemistry.*
Chelladurai, P., BA Madras; MA — *Physical Education.*
Cherniak, E. A., BA, of Osgoode Hall (Barrister-at-Law) — *Law.*
Chernick, A. B., MD, FRCS(c) — *Family Medicine.*
Chernick, B. A., MD, PhD — *Family Medicine.*
Chertkow, G., BA Saskatchewan; MD Toronto; FRCP(c) — *Medicine.*
Chess, G. F., BASc Toronto; M Eng McGill — *Physiology, Engineering, Dentistry.*
Chodirker, W. B., BSc (Med), MD Manitoba; FRCP(c) — *Medicine, Dentistry.*
Cholod, E. J., MD Alberta; CRCP(c) — *Medicine.*
Church, W. R., BSc, PhD Wales — *Geology.*
Clancy, P. R., BA, MD, CRCP(c) — *Anaesthesia.*
Clark, C. S., BA Queen's; PhD California — *Economics.*
Clark, H. C., BSc, MSc, PhD Auckland; PhD, ScD Cantab — *Chemistry.*
Clark, J. G., DDS Toronto — *Oral Medicine.*
Clark, M., BA Nursing Pretoria — *Family Medicine.*
Clark, R. J., BA McMaster; MA — *History Althouse.*
Clark, S. D., BA Carleton; MA Toronto — *Sociology.*
Clarke, G. L., BSc, MD, MRCOG, CRCS(c), FACS — *Family Medicine.*
Clarke, J., Mus Bac Toronto — *Music.*
Clarke, O., BA, MA, MB, BCh, MD Cantab; MRCS, LRCP London; MRCP London — *Medicine.*
Clattenburg, R. E., BSc, MSc Acadia — *Anatomy.*
Clements, D. L., BSc, MSc Cantab; PhD Melbourne — *Applied Mathematics.*
Clements, P. J., Mus Bac, MM Michigan — *Music.*
Cline, A., MD — *Anatomy.*
Clute, F. J., BA — *Guidance Althouse.*
Coates, C. F., MD Toronto; FRCP(c) — *Diagnostic Radiology.*
Coates, R. K., BA, MD, FRCP(c) — *Clinical Neurological Science.*
Code, W. R., BA Queen's; PhD Berkeley — *Geography.*
Cohn, T. H., BA Michigan; MA Wayne State; PhD Michigan — *Political Science.*
Cole, R. H., BA, MA, PhD Wisconsin — *Mathematics.*

Coles, J. C., BA, MD, MSc, FRCS(c) — *Surgery.*
Colhoun, E. H., BSA Toronto; PhD Cantab — *Pharmacology.*
Collins, J. A., MD, FRCS(c) — *Obstetrics & Gynaecology.*
Collins, J. R. L., BA — *Journalism.*
Collins, T. J., BA, MA, PhD Indiana — *English.*
Collyer, J. E., BA, MD — *Family Medicine.*
Collyer, R. T., BA, MD, FRCS(c) — *Ophthalmology.*
Colpitts, B., BSc New Brunswick; MSc — *Computer Science.*
Colvin, L. C., AB William & Mary; ABLS, AMLS Michigan — *Library & Information Science.*
Conklin, D. W., BA Toronto; PhD MIT — *Economics.*
Conlon, M. F., MB, BAO, BCh Ireland; DDM(Eng), MRC Psych London — *Psychiatry.*
Conron, A. B., DSO, BA, MA, AM, PhD Harvard — *English.*
Cook, F. S., BA, PhD Toronto — *Plant Sciences.*
Cook, R. A., BSc, MSc, PhD Manitoba — *Biochemistry.*
Cooke, J. D., BSc Mount Allison; MSc, PhD Dalhousie — *Physiology.*
Copeland, G. G., BA, MD, CRCS(c) — *Obstetrics & Gynaecology.*
Cornish, E., BA, DDS Toronto; Dip Perio New York — *Oral Medicine.*
Corrin, R. C., MD, D Psych Toronto; CRCP(c) — *Psychiatry.*
Cortner, L. L., Mus Bac Oberlin; MM Eastman — *Music.*
Cosentino, F., BA, BPE McMaster; MA Alberta — *Intercollegiate Athletics.*
Coulter, W. K., MD, FRCP(c) — *Medicine.*
Courchene, T. J., BA Saskatchewan; PhD Princeton — *Economics.*
Craig, A. W., MA Glasgow — *Political Science.*
Craig, R. A., Cert PHI Manitoba — *Epidemiology & Preventive Medicine.*
Cram, D. M., MD, MSc, FRCP(c) — *Paediatrics.*
Crealock, C., MA — *Graduate Studies Althouse.*
Creeggan, S., Reg N, BScN Windsor; MSc — *Nursing.*
Creighton, D. G., BA, MA Toronto; PhD Columbia — *French.*
Crisp, E. V., BSc Sir George Williams — *Education Media Department Althouse.*
Critz, J. B., BS in Ed, MA, PhD Missouri — *Physiology.*
Crombie, D. L., OBE, MB, ChB, MD Birmingham; FRCGP — *Family Medicine.*
Crookell, H., MBA, PhD, RIA (Alta) — *Business Administration.*
Crowther, N. B., BA Leeds; MA McMaster; PhD Sheffield — *Classical Studies.*
Cummins, J. E., BS Washington State; PhD Wisconsin — *Plant Sciences.*
Cunningham, D. A., MSc Alberta; PhD Michigan — *Physical Education, Physiology.*
Cunningham, D. N., BA Queen's; MSc Cornell — *Science Althouse.*
Currie, P. E., DDS Toronto — *Social Dentistry.*
Dale, W. S. A., BA, MA Toronto; PhD Harvard; FRSA — *Fine Art.*
Dalkert, C. H., BM Illinois Wesleyan; MM Eastman — *Music.*
Dauk, C., Reg N, BN McGill; MA Columbia — *Nursing.*
Davenport, A. G., BA Cantab; MASc Toronto; PhD Bristol; P Eng — *Engineering Science.*
Davies, B., BA McMaster; MA Harvard — *French.*
Davies, G. W., BA, MA, PhD Michigan — *Economics.*
Davies, E. M., MD Toronto; FRCP(c) — *Pathology.*
Davis, J. W., AB, AM, PhD Boston — *Philosophy.*
Davis, P. F., BA — *Secretarial Science.*
Davis, W. H., BASc Toronto; P Eng — *Engineering Science.*
Dawes, A. M., BSc Victoria; MSc, PhD Toronto — *Mathematics.*

Dawson, D. J., BASc, MA, PhD Toronto — *Physics, Therapeutic Radiology.*
Dawson, W. F., BA Toronto; MA Queen's; D Phil Oxon — *Political Science.*
Day, A. W., BSc, PhD Reading — *Plant Sciences.*
Day, J. C., BSc, MSc, PhD Chicago — *Geography.*
Day, L. L., BSc Reading — *Zoology.*
Deakin, A. S., BSc Carleton; MA, PhD Toronto — *Applied Mathematics.*
Dean, P. A., BSc, PhD, Imperial College London — *Chemistry.*
Decker, R. M., BA — *Intercollegiate Athletics.*
De Hart, F. E., AB College of St Elizabeth; MA Seton Hall; PhD Rutgers — *Library & Information Science.*
Deinum, E. J., MD, D Psych Toronto; FRCP(c) — *Psychiatry.*
De Kergommeau, D. — *Fine Art.*
Delkin, J., BA Reid; MA British Columbia — *Mathematics.*
Dellow, P. G., BDS, MB, BS Adelaide; FACDS — *Physiology.*
Demas, C. P., BSc Alexandria; PhD London — *Chemistry.*
De Mayo, P., BSc, MSc, PhD London; Des Sc Oray, FRSC — *Chemistry, Photochemistry.*
Denis, A. B., BA Carleton; MSc, PhD LSE — *Sociology.*
Denison, A. G., MD, DCH (Eng), FAAP, CRCP(c) — *Paediatrics.*
Dennis, S. C., ARCS, DIC, BSc, PhD London — *Applied Mathematics.*
Denny, J. P., BA Toronto; PhD Duke — *Psychology.*
De Veber, L. L., MD Toronto; FRCP(c) — *Paediatrics.*
Devereux, E. J., BA, MA Newfoundland; D Phil Oxon — *English.*
Dewdney, A. K., BSc, MA Waterloo — *Computer Science.*
Diamond, M. J., MB, ChB Leeds; DA England; CRCP(c) — *Anaesthesia.*
Dick, T. J. O., BA Carleton; MA Toronto; PhD Washington — *Economics.*
Dickie, G. L., MB, ChB Aberdeen; D Obst RCOG — *Family Medicine.*
Dickinson, S. M., BSc, PhD Nottingham; C Eng, P Eng — *Engineering Science.*
Diehl, J. E., BA Loyola; AM North Carolina — *Spanish & Italian.*
Dillon, R. M. — *Engineering Science.*
Dillon, M. T., BA, MD — *Family Medicine.*
Dilmore, H. C., BM, MM Eastman — *Music.*
Dinel, B., BSc Phm Toronto; MSc Ohio State — *Pharmacology.*
Dingus, R. L., BA, MA Cincinatti — *Psychiatry.*
Dingus, R. M. A., AB Wellesley; MA Pittsburgh — *Psychiatry.*
Dinniwell, W. A., DDS Toronto — *Oral Medicine.*
Di Stefano, J. J., BSc Rensselaer; MBA Harvard; MA, PhD Cornell — *Business Administration.*
Dixon, A. H., BSc, MSc, PhD British Columbia — *Computer Science.*
Dobell, W. M., BA McGill; MA, D Litt Oxon — *Political Science.*
Dolan, F. T., BSc St F X; MSc Georgia Inst of Tech — *Library & Information Science.*
Dolan, J., MBChB Glasgow; DPH (Eng), DPM (Eng), MRCP Glasgow; FRCP(c) — *Psychiatry.*
Donald, L. J., BSc, MSc Queen's; PhD London — *Paediatrics.*
Donaldson, E. F., Dipl SW Toronto — *Epidemiology & Preventive Medicine.*
Donisch, E. W. K. F., MD Bonn; MSc — *Anatomy.*
Donisch, V., MD Bonn; PhD — *Biochemistry.*
Dorland, A. G., BA Queen's; MA Yale; PhD Toronto; LLD, FRSC — *History.*
Douglas, J. H., BA, MD — *Medicine.*
Dow, M. R., BA, BEd, MA Toronto — *English Althouse.*
Downham, D. W., BA, B Chir, MB Cantab; FRCS (Eng), CRCS(c) — *Surgery.*

Downs, P. G., BA Leeds; Mus M, PhD Toronto — *Music.*
Dragland, S. L., BA, MA Alberta; PhD Queen's — *English.*
Drake, C. G., MD, MSc, MS Toronto; FRCS(c) — *Clinical Neurological Science.*
Dreimanis, A., Magrernat Riga, DSc Waterloo — *Geology.*
Dreyer, F. A., BA Toronto; BA Oxon; PhD St Andrew's — *History.*
Driedger, A. A., MD, PhD Saskatchewan — *Therapeutic Radiology.*
Dubois, J. R., BSc, MD Michigan; CRCP(c) — *Psychiatry.*
Duerden, I. J., BSc Leeds; D Phil Oxon; AIM — *Engineering Science.*
Duff, J. H., BA, MD Toronto; FRCS(c) — *Surgery.*
Duncan, R. I., BSc, MSc, PhD Oklahoma — *Biophysics.*
Dunham, C. B., BA, MA British Columbia; PhD Toronto — *Computer Science.*
Dunlop, C. C., BA, MA Queen's — *Political Science.*
Dunn, W. J., DDS Toronto; FACD — *Dean of Denistry.*
Dupraz, J. Y., LesL, MesL Grenoble — *French.*
Durnford, A. M., BA, MA, PhD Toronto — *Physics.*
Durnin, R. A., MDCM Queen's; FRCP(c) — *Physical Medicine & Rehabilitation.*
Dyson, C., MD, D Oph McGill; CROS(c) — *Ophthalmology.*
Eakins, T. S. G., MB, BCh, BA Dublin; DMRD, FFRCS — *Diagnostic Radiology.*
Eastwood, A. W., BDS Liverpool; DDS Dalhousie; MS (Ortho) Michigan — *Paediatric Dentistry.*
Ebanks, G. E., BA London; MA, PhD Cornell — *Sociology.*
Ebisuzaki, K., BSc, MS, PhD Wisconsin — *Cancer Research.*
Ecclestone, E. R., MD, FRCP(c) — *Paediatrics.*
Edgar, A. D., BA, MSc McMaster; PhD Manchester — *Geology.*
Edgar, H. W., MD, DMR McGill; CRCP(c) — *Diagnostic Radiology.*
Edmonds, D., BA, PhD, MIT, MA Princeton — *Physics.*
Edmonds, M. L. — *Music.*
Edwards, K. N., MD Manitoba; FRAI — *Family Medicine.*
Edwardson, B., BPT Manitoba; Dip T P Manitoba; MCPA, MCSP — *Physical Therapy.*
Egan, D. A., MCSP, MCPP, Teacher's Dipl in Physiotheropy — *Physical Therapy.*
Eggleston, A. C., BA Western Washington; PhD U California (Santa Barbara) — *Zoology.*
Ehrman, J. B., AB Pennsylvania; AM, PhD Princeton — *Applied Mathematics.*
Elcock, E. W., BSc, PhD Leeds — *Computer Science.*
Elder, P. S., BA Queen's; LLB British Columbia; LLM London; of the Bar of British Columbia — *Law.*
Elgie, M., BA — *Plant Sciences.*
Elliott, D. W., Phm B Toronto; MD — *Family Medicine.*
Ellyatt, W. G., MD — *Family Medicine.*
Emerson, R. L., BA Dartmouth; MA Brown; MA, PhD Brandeis — *History.*
Emery, G. N., BA Queen's; PhD British Columbia — *History.*
Emmerson, G. S., BSc, ARCST Glasgow; MSc London; P Eng — *Engineering Science.*
Emmerton, R. J., DDS Toronto — *Restorative Dentistry.*
England, N. J., MBE, MD, FRCP(c) — *Medicine.*
Enriquez, A. A., AA San Carlos; MD Santo Tomas; FRCP(c) — *Pathology (Meek Lab), Dentistry.*
Eramian, G. M., AB Brown, MA Columbia; PhD Brown — *Russian Studies.*
Ernest, M., DOT Toronto; BSR, MA British Columbia; OT Reg — *Occupational Therapy.*
Evans, D. R., BA, PhD Toronto; MA Ottawa — *Psychology.*

Evans, G. P., MB, ChB, DPH Glasgow — *Epidemiology & Preventive Medicine.*
Evens, C. — *Music.*
Evens, M., BH, MA Mills College, California — *Music.*
Eynon, R. B., BA, MS Illinois — *Physical Education.*
Fahselt, BA Sask; PhD Washington — *Plant Sciences.*
Fairs, J. R., BSc, MA Columbia — *Physical Education.*
Fay, T. L., BA Michigan; MS, PhD Northwestern — *Psychology.*
Feasby, W. H., DDS, Dip Paed Toronto; FRCD(c) — *Paediatric Dentistry.*
Fenwick, R. W. — *Fine Art.*
Ferguson, H. I., BSc, MSc, PhD — *Physics.*
Ferguson, W. K., BA, MA, PhD Cornell; D LITT, FRSC — *History.*
Fetterly, J. C., MDCM Queen's; DMRT, CRCP(c) — *Therapeutic Radiology.*
ffolliott, J. D., B Comm Rhodes; MBA, CA & FCA (Eng & Wales) — *Business Administration.*
Fieguth, W., BSc Bethel College; MA Queen's — *Geography.*
Filipich, R., MD, FRCP(c) — *Medicine.*
Fisher, C. F., MD, MSc, CRCP(c) — *Medicine.*
Fitz-James, P. C., BSA British Columbia; MSA Toronto; MD, PhD — *Bacteriology.*
Flaherty, D., BA McGill; MA, PhD Columbia — *History, Law.*
Fleck, P. D., BA, MA, PhD Queen's (Belfast) — *English.*
Fleet, M. E., BSc, PhD Manchester — *Geology.*
Fletcher, H. G., MD — *Family Medicine.*
Flint, W., BA Harvard; MA, PhD North Carolina — *Spanish & Italian.*
Florence, J. B., MA St Andrews; MSc Newcastle-upon -Tyne; PhD Simon Fraser — *Mathematics.*
Flumerfelt, B. A., BSc Sir George Williams; MSc McGill; PhD Cambridge — *Anatomy.*
Ford, A. J. — *Music.*
Foreman, J. E., BASc Toronto; MME Cornell; P Eng — *Engineering Science.*
Forrest, J., Reg N, BN McGill; BA Laurentian; MS Boston — *Nursing.*
Forsyth, G. R., B Ind Eng Georgia Inst of Tech; MBA — *Business Administration.*
Forsyth, L. H., BA Sask; MA, PhD — *French.*
Forsyth, P. A., BA, MA Sask; PhD McGill; FRSC — *Centre for Radio Science.*
Foulds, G. A., PhD London — *Psychology.*
Fowler, J. B., DDS Toronto — *Restorative Dentistry.*
Fox, P. J., BA, MD, FRCS(c) — *Surgery.*
F E., BA, MA Toronto — *English.*
D. M., Reg N, BScN, MScN — *Nursing.*
Frankena, M. W., BA Swarthmore; PhD, MIT — *Economics.*
Fraser, N., BA, MD Toronto — *Family Medicine.*
Fraser, P. A., BSc, PhD, MS Wisconsin — *Applied Mathematics.*
Fraser, W. P., BA British Columbia; MDCM McGill; CCFP — *Family Medicine.*
Freed, B., BA Kenyon College; PhD California (Berkeley) — *Philosophy.*
Freedman, J., BA Johns Hopkins; MA Princeton — *Anthropology.*
Frei, J. V., MDCM Queen's; MSc, PhD McGill; FRCP(c) — *Pathology.*
Frelick, L., MD, D Psych (Child) Queen's; CRCP(c) — *Psychiatry.*
Frey, G. C., DDS Toronto — *Paediatric Dentistry.*
Fried, J. S., BA Stanford; PhD Northwestern — *Economics.*
Frisch, S., BA Minnesota — *Psychology.*
Frishette, W. A., MD, FRCP(c) — *Pathology.*
Froelich, H. R., BSc Berlin; MSc, PhD — *Physics.*

Fry, J. N., BSc Eng Alberta; MBA, PhD Stanford — *Business Administration.*
Fryer, B. J., BSc McMaster; PhD, MIT — *Geology.*
Fujii, E. T., BA, MA, PhD Stanford — *Economics.*
Fulford, J. A., BSc, PhD — *Physics.*
Fuller, M., Reg N, BSc N — *Nursing.*
Funston, G., BA — *Physical Education.*
Fyfe, J., MA Edinburgh; FLA — *Library & Information Science.*
Fyfe, W. S., BSc, MSc, PhD Otago, NZ; FRS — *Geology.*
Gagnon, G., BA, LesL Laval; MA Aix-en-Provence — *Trois Pistoles S School.*
Gaily, D., AB Oregon State; MS, PhD Washington — *Physics.*
Galbraith, D. A., MD, CRCP(c) — *Psychiatry.*
Galbraith, H. C., MD, CRCP(c) — *Psychiatry.*
Gallaher, D. F., BA, MSc British Columbia; MA Toronto; PhD Washington — *Physics.*
Galpin, D. E., BA — *Althouse Assistant Registrar.*
Galsworthy, P. R., BSc Queen's; PhD Wisconsin — *Biochemistry.*
Galsworthy, S. B., BA Pomona; PhD Wisconsin — *Bacteriology.*
Gambrill, R. B., MD — *Family Medicine.*
Gammal, E. B., MB, BCh Cairo; PhD — *Anatomy, Obstetrics & Gynaecology.*
Gann, A. G., BA Brown — *French.*
Garber, L. A., BA, MA Toronto — *English.*
Gardner, D. G., DDS Toronto; MSD Indiana — *Pathology, Dentistry.*
Gardner, R. C., BSc Alberta; MSc, PhD McGill — *Psychology.*
Garg, A. K., BSc, MSc Agra; MSc, PhD Saskatchewan — *Clinical Biochemistry.*
Gargantini, I., BA, PhD Milan — *Computer Science.*
Gartrell, J. W., BA McMaster; MA Wisconsin — *Sociology.*
Gately, F. D., BS Holy Cross College; MA, PhD Princeton — *Economics.*
Gatfield, P. D., MD Queen's — *Biochemistry, Paediatrics.*
Gaudet, G. O., BA Moncton; BSc Soc Laval; PhD Pennsylvania — *Economics.*
Gaudet, P. M., BA Toronto; MA Princeton — *English.*
Gay, K. E., MD Ottawa; CRCP(c) — *Family Medicine.*
Geach, G. A., BSc, MSc, PhD Sheffield; FIM, P Eng — *Engineering Science.*
Gedalof, A. J., MA Alberta; PhD London — *English.*
Geddes, B., BSc, MSc — *Pharmacology.*
George, J. A., BSA Sask; MSA Toronto; PhD — *Zoology.*
George, P. M., BA Earlham; MA Boston; PhD North Carolina — *Sociology.*
Gerber, D. E., BA, MA, PhD Toronto — *Classical Studies.*
Gergely, N. F., MD Budapest; FRCS(c) — *Surgery.*
Gerhard, W. J., Reg N, BSc N, MSc N — *Nursing.*
Gerson, D. F., BSc, PhD McGill — *Biophysics.*
Gettas, P. G., MD, CRCS(c) — *Otolaryngology.*
Gibson, G., MD — *Family Medicine.*
Gidney, R. D., BA, MA McMaster; BEd Toronto; M Phil London — *History of Education Althouse.*
Gilbert, J. J., BSc, MDCM McGill; FRCP(c) — *Pathology.*
Gilboe, D. B., DDS Toronto — *Restorative Dentistry.*
Gilchrist, J. A., MBBS London; DMRT (Eng); CRCP(c) — *Therapeutic Radiology.*
Gilmour, S. C. — *Business Administration.*
Gilroy, J., Dip TP Toronto; MCPA — *Physical Therapy.*
Giron, A., B Mus Oberlin; MA Tulane — *Music.*
Giron, P. A., B Mus Oberlin — *Music.*
Girvan, G. R., MDCM McGill; CRCS(c) — *Obstetrics & Gynaecology.*

Girvin, J. P., MD, PhD McGill; FRCS(c) — *Clinical Neurological Science.*
Gittins, R., BSc Reading; PhD Wales — *Plant Sciences.*
Given, J. M., Reg N, BSc N, MEd Toronto — *Nursing.*
Glennie, G. D., MBBS London; DA McGill; MRCS (Eng), LRCP (London), CRCP(c) — *Anaesthesia, Oral Surgery.*
Goddard, M. D., MB, ChB Otago; MCACP, FRCP(c) — *Medicine.*
Gold, R. E., BSc (Med), MD Manitoba; CRCP(c) — *Diagnostic Radiology.*
Goldberg, B., BSc New Brunswick; MDCM Dalhousie; CRCP(c) — *Psychiatry.*
Goldberg, A. H., MBBS Dublin; LRCPI, LRCSI — *Anatomy, Dentistry.*
Goldberg, H., DDS McGill; Dip Os Tufts — *Oral Surgery.*
Goldschlager, A., LesL Agreg Brussels — *French.*
Gonser, G., BSc, MA Michigan — *Physical Education.*
Good, J., BA, MA — *English.*
Goodbrand, D. B., DDS Toronto — *Paediatric Dentistry.*
Goodchild, M. F., BA Cantab; PhD McMaster — *Geography.*
Goodstadt, M. S., BA Manchester; PhD Stanford — *Psychology.*
Gordon, B. A., MDCM, MSc, PhD Queen's — *Biochemistry, Paediatrics.*
Gordon, D. H., BA, LLB Queen's; of Osgoode Hall (Barrister-at -Law) — *Law.*
Gordon, E. M., BA, BLSc Columbia — *School Librarianship Althouse.*
Gort, G., MD Alberta; CRCP(c) — *Psychiatry.*
Gow, C. M., Reg N, BSc, MSc Manitoba; BSc N Queen's; MN Washington — *Nursing.*
owdey, C. W., BA, MSc, D Phil Oxon — *Pharmacology.*
Grace, D. M., MD, D Phil Oxon — *Surgery.*
Graham, D. M., BSc, MSc Manitoba; PhD Brooklyn Pl — *Chemistry.*
Graham, J. F., BA Assumption; MBA — *Business Administration.*
Graham, J. W., BA Manitoba; MA, PhD Toronto — *English.*
Grainger, R. W., MD, FRCS(c) — *Surgery.*
Grantham, P., MCSP, MCPA, Dip TP Toronto — *Physical Therapy.*
Gratton, D. R., DDS Toronto — *Restorative Dentistry.*
Gray, D. F., BSc Wisconsin; MSc, PhD Michigan — *Astronomy.*
Gray, D. M., BA, MA Queen's — *History Althouse.*
Grayson, J. P., BA, MA York — *Sociology.*
Green, J. P., ARCT Toronto; Mus Bac Toronto; MM Eastman — *Music.*
Green, R. N., MDCM McGill; FRCP(c) — *Medicine.*
Greene, G. K., A Mus, BA, BEd, MA Alberta; PhD Indiana — *Music.*
Greenfield, J. H., BA, DDS Toronto — *Oral Medicine.*
Greenhow, P., MD Toronto; CRCP(c) — *Diagnostic Radiology.*
Greenway, R. E., MD; FRCS(c) — *Otolaryngology.*
Greyson, R. I., BA British Columbia; MSc, PhD Oregon — *Plant Sciences.*
Griffin, A. E., Reg N; BA Toronto; MSc Wayne State; EdD Columbia — *Nursing.*
Griffiths, J., BSc Wales; MB, BCh Welsh Ntl; FIMLT (London); FCSC(c) — *Biochemistry.*
Grindlay, A., BSc Sask; MBA, PhD California — *Business Administration.*
Grindstaff, C. F., BA Wayne State; MA, PhD Massachusetts — *Sociology.*
Groom, A. C., BSc, PhD London; FInstP — *Biophysics, Anaesthesia.*
Growse, J. M., MDCM Queen's; CRCP(c) — *Anaesthesia.*
Guemple, D. L., BA, MA, PhD Chicago — *Anthropology.*
Guest, J. A., DDS Toronto — *Restorative Denistry.*
Guinsburg, T. N., AB, MA, PhD Columbia — *History.*
Gunton, R. W., MD, D Phil Oxon; FRCP(c) — *Medicine.*
Gustafson, M. E., BS in Mus Ed Kent State — *Music.*

Gustafson, R. S., BM Oberlin; MA Kent State; MA (Musicology) Michigan State — *Music.*
Guthrie, J. P., BSc; PhD Harvard — *Biochemistry.*
Gutteridge, D. G., BA — *English Althouse.*
Gwinnett, A. J., BDS Birmingham; LDS, RCS (Eng); PhD Bristol — *Anatomy.*
Gwyn, D. G., MRCS (Eng); LRCP, MB, BS London; PhD Birmingham — *Anatomy, Diagnostic Radiology.*
Gwynne-Timothy, J. R. R., BA, MA Toronto; D Phil Oxon — *History.*
Haenselman, C. F., B Mus Ed, M Mus Colorado; PhD Indiana — *Music.*
Haessel, W., BSc, MSc Alberta; PhD Iowa State — *Economics.*
Hagerman, E. S., MDCH Queen's; FRCP(c) — *Medicine.*
Hagerman, M., BA, MBA — *Business Administration.*
Hahn, E., BA UBC; MA, PhD Yale — *History.*
Haines, D. S. M., BA, MD, PhD Toronto — *Biochemistry.*
Haines, R. A., BSc, MSc Dalhousie; PhD Pittsburgh — *Chemistry.*
Hair, D. S., BA, MA, PhD Toronto — *English.*
Halip, J. W., DDS Toronto — *Restorative Denistry.*
Hall, E. J. — *Vocational Education Althouse.*
Hallberg, E. T., BA Idaho; DEd Arizona State — *Guidance Althouse.*
Hamilton, G., MD, FRCP(c) — *Diagnostic Radiology.*
Hamilton, J. T., BSc, PhD Edinburgh — *Pharmacology.*
Hamilton, W. B., BA, BEd, MA Acadia; PhD — *History of Education Althouse.*
Handy, A., BFA, MFA Alfred (NY State College of Ceramics) — *Fine Art.*
Hanna, E., MSW, DSW Michigan State, DSW Smith — *Family Medicine.*
Hannay, C. L., BSA Toronto; DIC, PhD London — *Bacteriology, Denistry.*
Hansen, K., BA, BLS McGill, MLS Toronto — *Library & Information Science.*
Hansford, D. F., PhmB Toronto — *Pharmacology.*
Haq, M. S., MA, PhD — *Mathematics.*
Hardie, M. J., MB, ChB Aberdeen; CRCP(c) — *Paediatrics.*
Harding, P. G. R., MD, MSc, FRCS(c) — *Physiology, Obstetrics & Gynaecology.*
HARDY, K. G., BA, MBA, PhD Michigan — *Business Administration.*
Hardy, M., BSc Columbia; Med, EdD Toronto — *Elementary Teaching Althouse.*
Harland, R. F. — *Vocational Education Althouse.*
Harle, J. R., BSc, MSc Alberta; PhD Washington State — *Plant Sciences.*
Harman, D. J., BASc Toronto; MSc Purdue; PhD Illinois; PEng — *Engineering Science.*
Harper, F. B., MA Glasgow; PhD California — *Psychology & Sociology Althouse.*
Harper, W. C., BS Rensselaer; MA Rochester — *Philosophy.*
Harris, A. J., DDS Toronto — *Epidemology & Preventive Medicine.*
Harris, A. W., BA — *Mathematics Althouse.*
Hart, J. F., BA, PhD Toronto — *Computer Science.*
Hart, W. S., BA, MA California (Berkeley) — *Fine Art.*
Harth, M., MD Toronto; FRCP(c) — *Medicine.*
Hartry, M. J., BA — *Secretarial Science.*
Hartsell, G. L., BA — *Althouse Associate Registrar.*
Harvey, W. B, BA, MA, LLB Manitoba; PhD Chicago — *Economics.*
Harwood, R. A., MD, CRCP(c) — *Diagnostic Radiology.*
Hassard, J. H., BA, Med Ottawa — *Guidance Althouse.*
Hatch, J. E., BComm Sask; MBA McMaster; PhD Michigan — *Business Administration.*
Hatch, L. A., MBBS London; Dip Bact & Immun London; FCPath — *Bacteriology.*

Haust, H. L., MD Heidelberg; MSc (Med), PhD Queen's — *Clinical Biochemistry.*
Haust, M. D., MD Heidelberg; MSc Queen's; FRCP(c) — *Pathology.*
Hay, D. R., BSc, MSc, PhD McGill — *Physics.*
Hay, G. C., BA, BEd, MEd Toronto — *Professional Practice & Administration Althouse.*
Hayatsu, A., BSc, MSc Tokyo; PhD Toronto — *Geophysics.*
Hayden, D. B., BSc, PhD Toronto — *Plant Sciences.*
Hayden, F. J., BA, MS, PhD Illinois — *Physical Education.*
Hayes, D. L., BPE Alberta; MSc Oregon State — *Intercollegiate Athletics.*
Heagy, F. C., MD, MSc, PhD — *Biochemistry, Therapeutic Radiology.*
Heddington, C. M. — *Althouse Teaching Aids.*
Hedley, J., BA, StFX; MA North Dakota — *Secretarial Science.*
Heeneman, H., MD State U Leiden Netherlands; FRCS(c) — *Otolaryngology.*
Heine, W. C., BA — *Journalism.*
Heinicke, A. G., BSc, MSc Manitoba; PhD British Columbia.
Heinrich, G. R., MD Saskatchewan; FACA, FRCP(c) — *Anaesthesia.*
Heller, L. M., BA, MA, PhD Wisconsin — *French.*
Hennen, B. K., MD Queen's; MA Michigan State; CRCP(c) — *Family Medicine.*
Henry, M., BA Toronto; MusBac, MM — *Music.*
Henry, W. C., BA, MA, PhD Toronto — *Philosophy.*
Henshel, R. L., BA Texas; PhD Cornell — *Sociology.*
Hensley, D. H., BA, MA Oregon; PhD Wisconsin — *English.*
Hersey, M. L. W., BSc McGill; MD, PhD, CRCP(c), FACA — *Pharmacology.*
Heseltine, G. F. D., BA Manitoba; LMSA West London; DPsych McGill; FRCP(c), MRCPsych (Eng) — *Psychiatry.*
Hess, G., BA, MA Toronto — *German.*
Hession, B. L., MD, MSc, FRCP(c) — *Medicine.*
Heu, M. — *Althouse-Vocational Education.*
Hibbert, D. M., RegN, BS Manitoba; MA Profess Dipl Columbia — *Nursing.*
Hickey, M. C., MD; CCFP — *Family Medicine.*
Hickling, M. A., MA, LLB, PhD London; of Osgoode Hall (Barrister-at-Law) — *Law.*
Hickman, C. J., BSc, MSc, PhD DSc Birmingham — *Plant Sciences.*
Hicks, B. E., BComm Toronto; MBA McMaster; PhD Illinois; CA Ontario — *Business Administration.*
Hidayet, M. A., MB, BCh Cairo; FRCS England FACS — *Anatomy, Dentistry.*
Hieatt, A. K., BA Louisville; PhD Columbia — *English.*
Hieatt, C. B., BA, MA Hunter College; PhD Yale — *English.*
Hilborn, K. H., BA, MA Queen's PhD Oxon — *History.*
Hill, M. B., MDCM Queen's; CRCP(c) — *Diagnostic Radiology.*
Hill, S. J., DPE Jordan Hill College; MA — *Physical Education.*
Hinnegan, K. A., BBA, Michigan; LLB, LLM Chicago; of Osgoode Hall (Barrister-at-Law) — *Law.*
Hinton, G. G., BSc, MDCM McGill; DCH (Eng); FRCP(c) — *Paediatrics.*
Hirst, M., BSc, PhD Liverpool; PhD.
Hiscock, R. S., BA, MD — *Family Medicine.*
Hobbs, G. E., BA, MD Toronto; MPH Michigan; FRCP(c), FAPA — *Psychiatry.*
Hobkirk, R., BSc, PhD Edinburgh; ARIC — *Clinical Biochemistry.*
Hockney, D. J., BA McMaster; PhD Cornell — *Philosophy.*
Hodder, R. W., BA Queen's; PhD California-Berkeley — *Geology.*
Hodgson, R. C., BSc, MSc McGill; DBA Harvard — *Business Administration.*
Hohner, R. A., BA, MA, PhD Duke — *History.*

Holder, M. A., BA, MA, PhD Toronto — *French.*
Holmes, F. L., BS MIT; MA, PhD Harvard — *History of Medicine & Science.*
Holmes, G., BA Leeds — *French.*
Holsworth, W. N., BSc, MSc British Columbia; PhD Western Australia — *Zoology.*
Hooker, C., BSc, BA, PhD (Physics) Sydney; PhD (Philosophy) York — *Philosophy.*
Hoover, M. P., MD Toronto — *Psychiatry.*
Hopkins, W. G., BA Wesleyan; PhD Indiana — *Plant Sciences.*
Horn, E. M., RegN; BS, MA Columbia — *Nursing.*
Horrocks, G., MA Oxon; FSA, FCIA, AIA — *Mathematics.*
Hossé, H. A., BA, MA Manitoba; PhD Ottawa — *Geography.*
Hotimsky, C. M., ACIA Shanghai; MA Waterloo — *Library & Information Science.*
House, G. S., AB, MA, PhD California (Berkeley) — *English.*
Houston, B. E., BA, MA — *Philosophy Althouse.*
Howard, J. H., BESc, MSA, DBA Harvard — *Business Administration.*
Howard, V. A., BA Maine; PhD Indiana — *Philosophy Althouse.*
Howell, W. C., BSc, MSc, PhD — *Chemistry.*
Howitt, P., BA McGill; MA, PhD Northwestern — *Economics.*
Hrabik-Samal, M. J., BA Notre Dame, MA Fordham — *Political Science.*
Hudgins, W., BA Toronto; MLS — *Library & Information Science.*
Hudson, A. J., MDBSc Toronto; FRCP(c)) — *Clinical Neurological Science, Biochemistry.*
Hughes, R. A., MusBac, BEd, MM Toronto — *Music.*
Hugill, R. A., DDS, BScD Toronto — *Restorative Dentistry.*
Humphrey, J. A., BA, MBA, DBA Harvard — *Business Administration.*
Hunter, A. T., BA, MD, CCFP, FCFP — *Family Medicine.*
Hunter, D. H., BSc Alberta; PhD UCLA — *Chemistry.*
Hunter, J. K., DDS Toronto — *Oral Medicine.*
Hunter, W. S., DDS Toronto; MS, PhD Michigan — *Paediatric Dentistry.*
Hurst, L. N., MD Toronto; FRCS(c) — *Surgery.*
Hutchison, D. A., MD, DPH Toronto — *Family Medicine, Epidemiology & Preventive Medicine.*
Hutchinson, R. W., BSc, MSc, PhD Wisconsin — *Geology.*
Hyatt, A. M., BA RMC; BA Toronto; MA Carleton; PhD Duke — *History.*
Hykawy, E. P., RegN, BScN Sask; MScN — *Nursing.*
Immerwahr, R., AB Swarthmore; MA Northwestern; PhD California (Berkeley) — *German.*
Inch, R. S., BA Mount Allison — *Geography & Geology Althouse.*
Inch, W. R., BSc Queen's; PhD — *Biophysics.*
Inculet, I. I., DiplEng Buceresti; MSc Laval; PEng — *Engineering Science.*
Inman, M. K., BA Acadia; MA, PhD Harvard — *Economics.*
Issacharoff, M., BA London; DU Strasbourg — *French.*
Jaatoul, N., MD Damascus; FRCP(c) — *Clinical Neurological Science.*
Jack, R. N., DDS, DipPerio Toronto — *Oral Medicine.*
Jackson, D. N., BSc Cornell; MS, PhD Purdue.
Jaco, N. T., MA, BSc, BM, BCh Oxon; MRCP, CRCP(c), DCH (Eng) — *Paediatrics.*
Jacobs, P. W., BSc, MSc Natal; PhD, DSc — *Chemistry.*
Jaeger, L. L., BM Indiana — *Music.*
Jamieson, A., BA, BLS McGill; MA McMaster — *Library & Information Science.*

Jamieson, W. G., BA Eastern Michigan; MD, FRCS(c), FRCS(Eng) — *Surgery.*
Jancey, R. C., BSc, MSc Southampton; PhD Sydney — *Plant Sciences.*
Janes, D. J., BA Toronto; MLS — *Library & Information Science.*
Janelle, D. G., BA Southwestern Louisiana; MA, PhD Michigan State — *Geography.*
Janzen, V., MD Alberta; FRCS(c) — *Otolaryngology.*
Jarmain, W. R., BA, MA Wisconsin — *Physics.*
Jarvis, G. K., BA Beigham Young; PhD Michigan — *Sociology.*
Jasinski, J., RegN, BScN — *Nursing.*
Jenkins, G. E., MD, DPsych Toronto; CRCP(c) — *Psychiatry.*
Jenner, M. R. F., BA, MD Saskatchewan — *Paediatrics.*
John, P. K., BSc Kerala; MSc Madras; PhD Ohio State — *Physics.*
Johnson, A. H., BA Mt Allison; MA, PhD Toronto; DLitt Mount Allison; FRSC — *Philosophy.*
Johnson, A. I., BASc Toronto; MCh E Brooklyn; PhD Toronto; P Eng — *Engineering Science.*
Johnson, D. J., BA Sterling Kansas; MA Colorado — *Music.*
Johnson, D. M. M., BA, MD, CRCP(c) — *Psychiatry.*
Johnson, F. G., MB, BS London; LRCP, MRCS, CRCP(c) — *Psychiatry.*
Johnson, F. L., MD Toronto; FRCS(c) — *Obstetrics & Gynaecology.*
Johnson, H. J., BA Alfred; PhD Chicago — *Philosophy.*
Johnson, H. T., AB Harvard; MBA Rutgers; MA, PhD Wisconsin — *Economics.*
Johnson, L. N., BS Pacific; MS Oregon; PhD Michigan — *Restorative Dentistry, Biophysics.*
Johnson, R. H., BSc, DDS McGill; MSD Indiana; Cert Perio Washington — *Oral Medicine.*
Johnston, C. B., BA, MBA — *Business Administration.*
Johnston, D. W., BA, MD, FACS, FRCS(c) — *Surgery.*
Johnston, E. E., MDCM, DMR Queen's; CRCP(c) — *Diagnostic Radiology.*
Johnston, K. A., BA, MD — *Family Medicine.*
Jondrow, J. M., BA, PhD Wisconsin — *Economics.*
Jones, D. F., AB Smith; MA Columbia; PhD Brown — *French.*
Jones, D. T., BA, MD, FRCP(c) — *Medicine.*
Jones, F. W. P., BA — *Business Administration.*
Jones, J., BSc, PhD Sheffield — *Physics.*
Jones, R. F., BA Dublin; MA Queen's — *French.*
Jordan, R. E., BA Sask; DDS Alberta; MSD Washington; FICD — *Restorative Dentistry.*
Jory, T. A., MD, FRCS(c), FACS — *Anatomy, Dentistry.*
Judd, W. W., BA McMaster; MA, PhD Toronto — *Zoology.*
Judson, J. W., BA, LLB Queen's — *Law.*
Jurjans, V., MD Tuebingen; CRCP(c) — *Psychiatry.*
Kalb, S., MD Manitoba; D Psych Toronto; CRCP(c) — *Psychiatry.*
Kalbfleisch, H. K., BA, MA New York; MA, PhD Michigan — *German.*
Kaluza, H. J., BA McMaster — *Business & Commerce Althouse.*
Kandel, P. F., MD Ottawa; CRCP(c) — *Anaesthesia.*
Kaufman, J. J., BA, MD Ottawa; CRCP(c) — *Psychiatry.*
Kaufmann, J. C. E., MB, ChB Cape Town; MRC Path — *Pathology, Dentistry.*
Kaula, D. C., BA Cornell; MA Connecticut; PhD Indiana — *English.*
Keenleyside, M. H., BA, MA British Columbia; PhD Groningen — *Zoology.*
Keeri-Szanto, M., MD Budapest; CRCP(c) — *Anaesthesia.*
Keidan, H., MB, ChB Liverpool — *Family Medicine.*

Keil, W. E., MD, CRCP(c) — *Psychiatry.*
Kelly, C. M., Reg N, BSc N — *Nursing.*
Kendall, S. B., AB Indiana; PhD Emory — *Psychology.*
Kennedy, F. S., BA, MD, MS in Medicine Minnesota; FACP — *Medicine.*
Kennedy, J. C., MD, FRCS(c) — *Surgery.*
Kennedy, J. R., B Comm Manitoba; MBA, PhD Stanford — *Business Administration.*
Kenney, K. W., BA, MA Toronto — *Elementary Teaching Althouse.*
Kerr, D. G. G., BA McGill; PhD London — *History.*
Kertesz, A., MDCU Queen's; BSc (Med) Toronto; FRCP(c) — *Clinical Neurological Science.*
Ketchum, E. J. D., BA Toronto; MSc L S E; MA, PhD Princeton — *Economics.*
Ketchum, E. J., BA, BLS Toronto; MLS — *Library & Information Science.*
Key, W. B., BA Mexico City College; MA California; PhD Denver — *Journalism.*
Keypour, N. D., BA Paris; LesL Paris — *French.*
Khanh, H. K., BA Johns Hopkins; MA Lehigh; PhD California — *Political Science.*
Kidd, M. E., BA, MA Toronto — *French.*
Kidd, R. G., BAc, MSc Manitoba; PhD London — *Chemistry.*
Kidder, G. M., BA Hiram; PhD Yale — *Zoology.*
Kiernan, J. A., BSc, MB, ChB, PhD Birmingham; MA Cambridge; MRCS (Eng), LRCP London — *Anatomy.*
Kieser, W. E., BA Leeds & London — *Modern Language Althouse.*
Kimber, R. W., BA McMaster; MD, FRCP(c) — *Medicine.*
Kimura, D., BA, MA, PhD McGill — *Psychology.*
King, D. A., BSc, DDS Alberta; MS Rochester — *Paediatric Dentistry.*
King, J. F., BSc, PhD New Brunswick — *Chemistry.*
King, R. H., BSc Swansea; MSc Aberdeen; PhD Saskatchewan — *Geography.*
Kinnear, T. C., B Comm Queen's; MBA Harvard; PhD Michigan — *Business Administration.*
Kirkham, P. G., BASc UBC; MBA, MA, PhD Princeton — *Business Administration, Economics.*
Klapp, O. E., AB, AM, PhD Chicago — *Sociology.*
Klass, W., BSc West Indies; MA, PhD Toronto — *Mathematics.*
Klein, W. C., DDS Toronto — *Oral Medicine.*
Klinck, C. F., BA, MA, PhD Columbia; FRSC — *English.*
Knight, R. M., B Eng McGill; SM M I T; DBA Harvard — *Business Administration.*
Kogon, S., DDS Toronto; MS — *Oral Medicine.*
Konrad, W. W., BSA Toronto — *Althouse — Science.*
Kosaric, N., MESc Zagreb; PhD, P Eng — *Engineering Science.*
Kostuk, W. J., MD, FRCP(c) — *Medicine.*
Koutsouvilis, A. P., BA, MA, PhD London — *Philosophy Althouse.*
Kozoris, J. G., DDS Manitoba — *Restorative Dentistry.*
Krever, H., QC, BA, LLB Toronto; of Osgoode Hall (Barrister-at-Law).
Kroll, A., BSc McGill; MS Brooklyn; PhD Purdue — *Communication Disorders.*
Krupka, R. M., MA Saskatchewan; PhD McGill — *Biochemistry.*
Krysztofiak, B. E., MD Poznan; CRCP(c) — *Physical Medicine & Rehabilitation.*
Kuch, P. J., BA Cornell; MA Syracuse; PhD Minnesota — *Economics.*
Kudar, R. P., B Eng, BMC, MBA — *Business Administration.*
Kuechle, D., BA, LLB Wisconsin; MBA, DBA Harvard — *Business Administration.*
Kuehner, D., BSc Bishop's; MSc Queen's; PhD Edinburgh — *Computer Science.*

Kuhlman, R., BA, MBA — *Business Administration.*
Kunkel, J. H., BA Pomona; MA, PhD Michigan — *Sociology.*
Kymlicka, B. B., BA British Columbia; MA, PhD Columbia — *Political Science.*
Laing, M. M., BA, BS Wisconsin — *Journalism.*
Laman, K. J., Reg N, BSc PH Ottawa; MS Suny at Buffalo — *Nursing.*
Lamb, L., BA, BSN British Columbia — *Family Medicine.*
Lambert, D. M., BA, MBA — *Business Administration.*
Lambert, G. R., BA, MA Toronto — *Classics Althouse.*
Lander, J. R., BA, MA, M Litt Cantab — *History.*
Landstreet, J. D., BA Reed; MSc, PhD Columbia — *Astronomy.*
Lane-Smith, D. R., BSc, MSc Manchester; PhD Durham — *Physics.*
Langland, K., BA Saskatchewan — *Computer Science, Medicine.*
Langman, R. C., BA, MA Toronto — *Geography & Geology Althouse.*
Langtvet, O. P., C Mag, C Phil Oslo — *Geography.*
Laplante, R., BA — *Journalism.*
Lapp, C. A., BA, MDCM Queen's; CRCP(c) — *Psychiatry.*
Lauchland, L. S., ED, BASc, MASc Toronto; P Eng — *Engineering Science.*
Lawr, D., BA, MA, PhD Toronto — *History of Education Althouse.*
Lawrence, D. W., BSc Sir George Williams; MD — *Obstetrics & Gynaecology.*
Lawson, G. B., BA Queen's; BEd Toronto — *Mathematics Althouse.*
Leach, J., BA Heidelberg; MA Trinity; PhD Michigan State — *Philosophy.*
Leach, P. G., BA Heidelberg; MA Chicago — *Political Science.*
Leake, J., DDS, DDPH Toronto — *Epidemiology & Preventive Medicine.*
Leboldus, G. M., MD, Prcs(c) — *Otolaryngology.*
Lee, R. E., BA Guilford; BSLS, MFA North Carolina; PhD Chicago — *Library & Information Science.*
Leenders, M., BSc Alberta; MBA, DBA Harvard — *Business Administration.*
Leeson, J. I., MD, CCFP(c) — *Family Medicine.*
Lefcoe, N. M., BSc McGill; MD Vanderbilt; FRCP(c) — *Medicine.*
Lefcoe, M. S., BSc, MDCM McGill — *Diagnostic Radiology.*
Leishman, R. J. W., BA, MA Queen's — *Political Science.*
Leith, J. C., BA Toronto; MSc, PhD Wisconsin — *Economics.*
Lemmon, J. C., BA Queen's; MBA — *Business Administration.*
Lenhardt, J. K., Reg N, BSN Columbia — *Nursing.*
Lennon, T. M., BA Manhattan; PhD Ohio State — *Philosophy.*
Lenz, A. C., BSc, MSc Alberta; PhD Princeton — *Geology.*
Lewis, F. N., BA, MD, MRC Path, FRCP(c) — *Pathology.*
Lewis, J. A., MD, FRCP(c), FACP — *History of Medicine & Science.*
Leyshon, G. A., BA, MS Illinois; PhD Oregon — *Physical Education, Anatomy.*
Lheureux, W. J., BA, MA Michigan; LLD New Brunswick — *Physical Education Graduate Program.*
Li, K. T., MB Taiwan; CRCP(c) — *Paediatrics.*
Li, M. D., MB National Taiwan; FRCP(c) — *Paediatrics.*
Linden, P. J., BA, MA — *English Althouse.*
Linsdell, F. J., BA, MD, CRCP(c) — *Diagnostic Radiology.*
Linton, A. L., MB, ChB Edin; FRCP Glasgow; FRCP Edin — *Medicine.*
Little, W. B., B Comm UBC; DBA Harvard — *Business Administration.*
Littlewood, A. R., BA Leeds; B Litt Oxon — *Classical Studies.*
Livingstone, C. E., BSc, MSc British Columbia; PhD — *Engineering Science.*
Lo, K. Y., BSc Hong Kong; MSc, DIC, PhD London; P Eng — *Engineering Science.*
Lobb, H. O., BA, BEd, MEd Sask; PhD Toronto — *Psychology.*

Locke, M., BA, MA, PhD Cantab — *Zoology.*
Lodge, S., B Pharm London; PhD Bradford — *Physiology.*
Logan, A. D., BFA, AOCA, OIP Toronto — *Art Althouse.*
Lohmann, R. C., MD Freiburg; FRCP(c) — *Medicine, Therapeutic Radiology.*
Long, R., B Comm UBC; MBA Washington; CA (BC) — *Business Administration.*
Longton, M. M., ARCT Toronto; LTCL Trinity London; B Mus, M Mus U BC — *Music.*
Lopez-Pacheco, J., Lic Fil y Let Madrid — *Spanish & Italian.*
Lorcini, M. — *Music.*
Lorimer, J. W., BA, MA, PhD Toronto — *Chemistry.*
Lott, A. E. — *Althouse — Computer Service.*
Loudon, J. L., MD Toronto; FRCP(c) — *Medicine.*
Lovegrove, T. D., BA, MD, MSc — *Pharmacology, Psychiatry.*
Lowe, R. P., BSc, PhD — *Physics.*
Luckman, B., BA, MA Manchester — *Geography.*
Luke, T. M., BSc Queen's; MSc, PhD McGill — *Applied Mathematics.*
Lundgren, B. R., BA Manitoba; MA, PhD — *English.*
Ly, T., DU Paris — *French.*
Lyon, G. F., BA, MA, PhD Saskatchewan — *Physics.*
Macallum, A. B., BA, MD, PhD Toronto; FRSC — *Medicine.*
MacDonald, A. C., MD, FRCP(c) — *Diagnostic Radiology.*
MacDonald, J. A., BE NS Tech; MSE Michigan; P Eng — *Engineering Science.*
MacDonald, J. C. F., BA, MA British Columbia; PhD Toronto — *Therapeutic Radiology & Physics.*
MacDonald, W. B., MD Saskatchewan; FRCP(c) — *Anaesthesia.*
MacInnes, C. D., BSc Bishop's; MS, PhD Cornell — *Zoology.*
Mack, J. S., BS Colorado State; OTR, OT Reg — *Occupational Therapy.*
MacKay, R. S., QC, LLM Columbia; of Osgoode Hall (Barrister-at-Law) — *Dean of Law.*
MacKenzie, D. A., MD, MSc Minnesota; FRCS(c), FACS — *Surgery.*
MacLennan, M. O., RCAD Toronto; BA — *Music.*
MacMaster, E., Reg N, BScN — *Nursing.*
MacNeill, I. B., BA Sask; MA Queen's; PhD Stanford — *Applied Mathematics.*
MacPherson, C. F. C., BSc Mount Allison; MSc Dalhousie; PhD Columbia — *Psychiatry, Biochemistry.*
MacRae, D., BSc British Columbia — *Computer Science.*
MacRae, E. E., MD Dalhousie; CRCS(c) — *Otolaryngology.*
MacRae, A. G., MCSP, MCPA — *Physical Therapy.*
MacRae, N. D., BSc Queen's; MSc, PhD McMaster — *Geology.*
Magee, G. R., BA, MS, PhD Chicago — *Mathematics.*
Magee, W. L., BSc, MSc, PhD — *Biochemistry.*
Mai, F. M., MB, ChB Cape Town; DPM (Eng), MRCP Edin; MD Adelaide; MRC Psych (Eng) — *Psychiatry.*
Maine, S. F., BA Queen's; MA, PhD Toronto — *History.*
Malanchuk, R., BA, MBA — *Business Administration.*
Manners, D. O., BA, MD, FRCS(c), FACS, FACOG — *Obstetrics & Gynaecology.*
Manning, G. W., MA, MD, PhD Toronto; FRCP(c) — *Medicine, Physiology.*
Mansinha, L., BSc, IIT Karagpur; PhD British Columbia — *Geophysics.*
Mantle, J. H., Reg N, BN McGill; MSc N California (San Francisco) — *Nursing.*
Manuel, P. W., BSc, MSc, PhD — *Applied Mathematics.*
Marchuk, P., MD — *Family Medicine.*
Marenin, I., BA, MA, PhD Indiana — *Astronomy.*

Marin, I. C., BS City College of Cuny; MA, MS, PhD Michigan — *Sociology.*
Markusen, J., BA Boston College — *Economics.*
Marlborough, J. M., BSc, MA Toronto; PhD Chicago — *Astronomy.*
Marples, L. W., BSc Delaware; MBA Stanford — *Business Administration.*
Marras, A., BA Colgate; PhD Duke — *Philosophy.*
Marshall, D. G., MD, FRCS(c), FAAP — *Surgery.*
Marti, A. M., Lic Dr Fil y Let Barcelona — *Spanish & Italian.*
Martin, R., BSc St F X; MSc, PhD — *Chemistry.*
Martin, R. J., BSc, MSc, PhD — *Computer Science.*
Martin, S. A., MBA, DBA Harvard; FCA (Ontario) — *Business Administration.*
Martinello, B. P., DDS, DPH Toronto — *Social Dentistry, Epidemiology & Preventive Medicine.*
Marton, J., BSc Budapest; PhD — *Physics.*
Maun, M. A., MA, MSc American University of Beirut; PhD Washington — *Plant Sciences.*
Max, P., BA, MD, CRCP(c) — *Psychiatry.*
May, J. D., B Comm Queen's; PhD York (England) — *Economics.*
Maynard, P., AB Chicago; PhD Cornell — *Philosophy.*
Mazan, A., L Mus London Ont; Graduate of Vienna Academy; BA — *Music.*
McAlpine, K. L., MD, CRCP(c) — *Paediatrics.*
McAninch, L. N., MD, FRCS(c), FACS — *Surgery.*
McCallum, B., BSc N — *Family Medicine.*
McCamus, B. M., BA Toronto; MLS — *Library & Information Science.*
McCarter, J. A., BA, MA British Columbia; PhD Toronto; FRSC — *Cancer Research, Biochemistry.*
McCaughey, W. T. E., MB, BCh, MD Queen's Belfast; MRC Path — *Pathology.*
McClean, R. M., BA, LLB — *Law.*
McClelland, W. J., BA, MA Toronto; PhD London — *Psychology.*
McClure, J. A., BSc, MD Queen's — *Otolaryngology.*
McConnell, W. G., BA McGill; MA Kansas — *German.*
McCourtie, D., MD, FRCP(c) — *Medicine.*
McCredie, J. A., MB, BCh, BAO, MCh Belfast; FRCS (Edin); — *Surgery.*
McCue, D., MB, ChB Glasgow — *Family Medicine.*
McCullough, M. K., BA Michigan State; MA Cornell — *History.*
McDaniel, R., BA, MA — *Geography.*
McDonald, J. W. D., MD, PhD, FRCP(c) — *Medicine, Biochemistry.*
McDougall, A. K., BA McGill; MA Carleton; PhD Toronto — *Political Science.*
McDougall, W. J., BA, FCA (Ont) — *Business Administration.*
McFadden, D., BA, MA British Columbia — *Russian Studies.*
McFarlane, D. C., MD, CRCS(c) — *Ophthalmology.*
McFarlane, N. A., BA, DDS Toronto; DA Pitt — *Anaesthesia, Oral Surgery.*
McFarlane, R. M., MD, MSc, FRCS(c), FACS — *Surgery.*
McFetridge, D. G., B Comm Sask; MA Toronto — *Economics.*
McGhie, T. G., MD — *Family Medicine.*
McGowan, J. W., BSc St F X; MSc Carnegie Mellon; DSc Laval — *Physics.*
McInnis, W. P., BA, MD — *Clinical Neurological Science.*
McIntosh, J. S., ARCT Toronto; AAGO New York; Mus Bac Toronto; MM Eastman — *Music.*
McKay, D. F., BA, MA, PhD Wales — *English.*
McKay, D. O., BA, MA, PhD Buffalo — *Mathematics.*
McKeen, W. E., BSc, MSc, PhD — *Plant Sciences.*

McKellar, D. A., ARCT Toronto; A Mus London, Ont; Mus Bac Toronto; MM Eastman — *Music.*
McKenzie, F. A., BA Iowa; MD, CRGP(c) — *Psychiatry.*
McKeon, P. J., BA — *Education Media Department Althouse.*
McKibben, W. L., AB, PhD California, Berkeley — *Business Administration.*
McKie, D. C., BA, MA York — *Sociology.*
McKim, J. C., MD — *Family Medicine.*
McKim, J. S., MD, MSc, DCH (Eng), CRCP(c) — *Epidemiology & Preventive Medicine.*
McKim, M. E., MD Toronto; CRCP(c) — *Psychiatry.*
McKinna, A. J., BA Sask; MDCM McGill; CRCP(c) — *Ophthalmology.*
McLachlin, A. D., MD, MSc, D Phil Oxon; MS Toronto; FRCS(c), FRCS (Eng), FACS — *Surgery.*
McLachlin, J. A., MD, M Gl Sc, FRCS(c), FACS — *Surgery.*
McLaren, R. H., BA, LLB, LLM London — *Law.*
McLarty, D. A., BA, PhD Columbia — *Plant Sciences.*
McLarty, T. D., BA, MD, FRCS(c) — *Surgery.*
McLaughlin, J. P., BA Queen's; PhD London — *History.*
McLeavey, D. W., BA, MBA Wayne State — *Business Administration.*
McLeish, E. A., BA, MEd Toronto — *Professional Practice & Administration Althouse.*
McLeish, J. C., MD, CRCP(c) — *Psychiatry.*
McLeod, J. G., BA, LLB, LLM London — *Law.*
McMillan, D. B., BSc, MSc, PhD Toronto — *Zoology.*
McMurray, J. G., BA, MA, PhD Toronto — *Psychology & Sociology Althouse.*
McMurray, W. C. C., BSc, PhD — *Biochemistry.*
McPeck, J. E., BA, MA — *Philosophy Althouse.*
McWhinney, I. R., MB, BCh, MD Cambridge; MRCP London — *Family Medicine.*
Meads, G. E., BA Michigan; MD, FRCS(c) — *Surgery.*
Meath, W. J., BSc Carleton; MSc Wisconsin — *Chemistry.*
Medzon, E. L., BSc, MSc Manitoba; PhD McGill — *Bacteriology.*
Melchior, L., Reg N, BSc N — *Nursing.*
Mellamphy, E. N., BA Dublin; MA Manitoba — *English.*
Meltzer, D. B., BSc Manitoba; MD, FRCP(c) — *Pharmacology.*
Melvin, J. R., BSc Manitoba; MA Alberta; PhD Minnesota — *Economics.*
Melvin, R. A., BA Brandon; PhD Alberta — *Political Science.*
Menear, D. W., BA, BEd Toronto; MEd Alberta; FCCT — *Professional Practice & Administration Althouse.*
Mercer, P. F., DVM Toronto; PhD Cornell — *Physiology.*
Meredith, A. R., MD — *Family Medicine.*
Mereu, J. A., BA, FSA, FCIA — *Mathematics.*
Mereu, R. F., BSc, MSc Toronto; PhD — *Geophysics.*
Merritt, J. O., MD — *Family Medicine.*
Metcalf, G., BA, MA Toronto; PhD London — *History.*
Metras, J. P. — *Intercollegiate Athletics.*
Metzger, F. K., BA Bowdoin; MA Pennsylvania; PhD Rutgers — *History.*
Meyer, O. J., Graduate of Royal Conservatory, Amsterdam — *Music.*
Middleton, W. W., MD, FCCP — *Medicine.*
Migneron, R., BA Montréal; BSc Ottawa; MSc Cornwall; PhD London — *Applied Mathematics.*
Mikalachki, A., B Comm Sir George Williams; MBA, PhD — *Business Administration.*

Milburn, G., BA, MA, Durham; BEd Toronto — *History Althouse.*
Millar, J. S., BSc, MSc British Columbia; PhD Alberta — *Zoology.*
Miller, A. J., BSc L S E; MA Manchester; PhD McGill — *Political Science.*
Miller, C., BA London; MA McMaster — *Anthropology.*
Miller, C. B., BA Saskatchewan; MA, PhD Illinois — *Mathematics.*
Millman, W. L., MD, FRCP(c) — *Anaesthesia.*
Mills, A. R., DDS Toronto — *Restorative Dentistry.*
Mills, D. M., BA, MD, FRCP(c) — *Pathology.*
Mills, D. W., BA, BSc Carleton; MD, MSc (Med) Queen's; FRCS(c) — *Ophthalmology.*
Milne, B. J., RN, BSc N Toronto — *Family Medicine.*
Milne, D. C. — *Physical Education.*
Milne, J. K., MD, FRCS(c) — *Obstetrics & Gynaecology.*
Milnes, L., B Mus Toronto — *Music.*
Milnes, P., BA, MSc, PhD Toronto — *Mathematics.*
Misra, R. K., MSc, PhD Nagpur; PhD Edinburgh — *Zoology.*
Mitalas, R., BA, MA Toronto; PhD Cornell — *Astronomy.*
Mogenson, G. J., BA, MA Saskatchewan; PhD McGill — *Physiology.*
Molineux, J., BA, MA Queen's — *Family Medicine.*
Montemurro, D. G., BA, MSc, PhD — *Anatomy.*
Moorcroft, D. R., BASc, MSc Toronto; PhD Saskatchewan — *Physics.*
Moore, D. S., DDS, Dip Perio Toronto; FRCD(c) — *Oral Medicine.*
Moore, J. T., BA, MA Wisconsin; PhD Chicago — *Mathematics.*
Moo d, J. M., BSc California Institute of Tech; MA UCLA — *Astronomy.*
Mor n, S. M., BA, Dip P Toronto; MCPA, Teacher's Diploma in Physiotheropy — *Physical Therapy.*
Moro, R. — *Vocational Education Althouse.*
Morris, R. W., DDS Toronto — *Oral Medicine.*
Moulton, M. E., BSc, MSc — *Zoology.*
Moulton, R., MA, MB, B Chir Cantab; Dobst, RCOG — *Family Medicine.*
Mountain, H. E., MD, CRCP(c) — *Psychiatry.*
Muehlmann, R. G., BA Indiana; PhD Iowa — *Philosophy.*
Muir, J. M., MB, ChB Glasgow; FRCP(c) — *Anaesthesia.*
Mullin, J. K., BS, MS, PhD Carnegie Mellon — *Computer Science.*
Mullins, D. E., BA, MSc Colorado State; PhD Virginia Polytechnic — *Zoology.*
Mumby, D., BSc N, MA Columbia — *Epidemiology & Preventive Medicine.*
Munn, B. W., BA, MA Cantab; PhD British Columbia — *Spanish & Italian.*
Munn, L. G., B Mus Philadelphia Conservatory of Music — *Music.*
Munn, W. H. — *Music.*
Murison, C. L., MA Edinburgh; MA Cantab — *Classical Studies.*
Murphy, K. C. — *Educational & Vocational Counselling, Psychology.*
Murphy, P. M., BA, Mus G Paed — *Music.*
Murray, G. P., BSc London; MA Lehigh — *Political Science.*
Murray, H. G., BA, MA, PhD Illinois — *Psychology.*
Murray, R. G. E., BA, MA Cantab; MDCM McGill; FRSC — *Bacteriology, Acting Dean — Faculty of Science.*
Murty, R. C., BSc Andhra; MSc, Dip Lib Bombay; PhD — *Physics.*
Musson, P. D., BA, MA — *Sociology.*
Mutambirwa, C. C., BA Lincoln; MA Pennsylvania — *Geography.*
Muxlow, K. R., DDS Toronto — *Restorative Dentistry.*
Naftolin, L. Z., BA, MD — *Family Medicine.*
Nagai, T., M Eng, MSc, DSc Tokyo — *Biophysics.*

Nardocchio, E. F., BA Saint Francis Xavier; MA Middlebury — *French.*
Naylor, D., BSc, PhD London — *Applied Mathematics.*
Neal, L. E., BA, MA, PhD Toronto — *Dean of Women, Psychology.*
Neary, P. F., BSc, MA Memorial; PhD London — *History.*
Neill, S. D., BA, BLS, M Ed Toronto — *School of Library & Information Science.*
Neilson, J. B., MBE, MD Toronto; FACHA — *Epidemiology & Preventive Medicine.*
Nelson, J. G., BA McMaster; MA Colorado; PhD Johns Hopkins — *Geography.*
Nerenberg, M. A., BSc, PhD McGill — *Applied Mathematics.*
Neufeld, R. W. J., BA Alberta; MSc, PhD Calgary — *Psychology.*
Neuhauser, R., MA Toronto; PhD Vienna — *Russian Studies.*
Newell, E. N., MD — *Physical Medicine & Rehabilitation.*
Newell, J. P., BA, MD — *Family Medicine.*
Newkirk, R. L., BSc, MSc — *Computer Science.*
Newland, C. — *Music.*
Newman, J. C., BA McGill; MA Radcliffe; Dra Fil y Let — *Spanish & Italian.*
Newson, E. P., BASc Alberta; MBA, PhD M I T — *Business Administration.*
Nicholas, J. M., BSc, MSc Sussex — *Philosophy.*
Nicholls, J. V. V., BA, MDCM McGill; FACS, FRCS(c) — *Ophthalmology.*
Nicholson, J. R., BA, MD, FAAP, CRCP(c) — *Paediatrics.*
Nicholson, J. T., SB Cornell; MBA, DBA Harvard — *Business Administration.*
Nicholson, N. L., BA, MSc, PhD Ottawa; FRGS — *Geography.*
Nicol, D. A., BA Sask; MD, DMR Toronto; CRCP(c) — *Diagnostic Radiology.*
Nielsen, J. S., LRCP (London), MRCS (Eng), CRCP(c) — *Anaesthesia.*
Nobbe, C. E., BA, MA, PhD Washington — *Sociology.*
Nobbs, R. A., BSc, MBA Alberta; PhD — *Business Administration.*
Noble, M., BSc, MB, ChB St Andrew's; MRCOG, MRCGP — *Family Medicine.*
Noel, S. J. R., BA Memorial; MA, DPhil Oxon — *Political Science.*
Nordine, M. C., BA Saskatchewan; DDS Toronto — *Oral Medicine.*
Norry, H. T., MD, CRCP(c) — *Anaesthesia.*
Nourse, R. E., BSc Queen's; MBA, DBA Harvard — *Business Administration.*
Novak, M., Dipl Ing Prague; PhD Acad Sc Prague; P Eng — *Engineering Science.*
Nowak, E. S., B Eng McGill; MSME, PhD Purdue; P Eng — *Engineering Science.*
Nugent, S. M., MB, BCh, BAO National University, Ireland; DPM (Eng) — *Psychiatry.*
Nuttall, J. H., BA, PhD Cantab — *Physics.*
Oaxaca, R. L., BA Fresno State College; MA, PhD Princeton — *Economics.*
O'Brien, A., BSc Dalhousie — *Political Science.*
O'Connor, D., BAO National U, Dublin; CCFP — *Family Medicine.*
Ogelsby, J. C., AB Stanford; MA, PhD Washington — *History.*
Ogilvie, D. M., BSc New Brunswick; PhD Western Australia — *Zoology.*
Ogletree, J., BSc — *Science Althouse.*
O'Hea, E. K., B Agr S, M Agr Sc Dublin; PhD Illinois — *Physiology.*
Okraku, I. O., BA Ghana; MA, PhD Cornell — *Sociology.*
O'Leary, P. T., AB Boston; MA Toronto — *Philosophy Althouse.*
Oliver, D., BA, MBA — *Business Administration.*
Oliver, G. L., MD, MSc, FRCS(c) — *Ophthalmology.*
Ollerhead, W. W., BA, MD, M Ch Orth Liverpool; FRCS(c) — *Surgery.*
Olson, A. T., BSc Queen's; MSc Birmingham; P Eng — *Engineering Science.*
Oneail, J. M., BA — *Journalism.*
O'Neill, T. F., RN, BSc St Thomas, New Brunswick — *Family Medicine.*

Oosterhoff, A. H., BA, LLB, LLM Toronto; of Osgoode Hall) (Barrister-at-Law) — *Law.*

Orchard, J. W., MD — *Family Medicine.*

Orlick, T. D., BA Syracuse; MEd William & Mary College; PhD Alberta — *Physical Education Graduate Program.*

Orloci, L., BSF Sopron; MSc, PhD British Columbia — *Plant Sciences.*

Oteruelo, F., BSc Valladolid; MSc, PhD — *Pathology, Paediatrics.*

Ouellette, G., BA, MBA — *Business Administration.*

Owen, M. D., BSc Wales; PhD Monash — *Zoology.*

Pace, W. E., MD, MSc, FRCP(c) — *Medicine.*

Packer, R. W., BA, MA Cantab — *Geography.*

Paiement, M. G. T., DDS Toronto — *Restorative Dentistry.*

Paivio, A. U., BSc, MSc, PhD McGill — *Psychology.*

Palmer, E. E., BA William & Mary; MA Yale; LLM Toronto; of Osgoode Hall — *Law.*

Palmer, H. C., BSc St F X; PhD Princeton — *Geophysics.*

Palmer, J. P., BA Carleton College, Minn — *Economics.*

Palmer, R. B., MD, CRCP(c) — *Psychiatry.*

Paloian, A. Y., MSc Alberta; BSc Illinois — *Computer Science.*

Papmehl, K. A., MA Ottawa; PhD London — *Russian Studies.*

Parai, L., BA Alberta; MA Toronto; PhD Yale — *Economics.*

Park, P., BA — *Elementary Teaching Althouse.*

Parker, G. D., BA Acadia; MA Dalhousie; PhD Toronto — *English.*

Parker, G. L., BS, MA N Y U; OTR, OT Reg — *Occupational Therapy.*

Parker, J. M., MD Manitoba; DPH, PhD Toronto — *Pharmacology, Medicine.*

Parnell, A. G., FDS, RCS England — *Oral Surgery.*

Passi, R. B., MD, FRCS(c), FACS — *Surgery.*

Paterson, W. I., BPHE Toronto — *Physical Education Althouse.*

Paton, G. A., BA, MA Michigan; PhD Illinois — *Physical Education.*

Patten, J. F., MD — *Family Medicine.*

Patterson, J., Reg N, BSc N Windsor; MSc N — *Nursing.*

Paty, D., AB, MD Emory; FRCP(c) — *Clinical Neurological Science.*

Payne, N. C., BSc London; PhD Sheffield — *Chemistry.*

Peach, D. A., BSc, MBA Ohio; DBA Harvard — *Business Administration.*

Peacock, W. H., BASc, MASc Toronto; PhD California Berkeley; P Eng — *Engineering Science.*

Pearce, G. A., AB William & Mary — *Philosophy.*

Pearson, N., BA Durham — *Political Science.*

Pederson, D. R., BA Minnesota; MA, PhD Iowa — *Psychology.*

Pellow, W. R., BA Queen's; DDS Toronto — *Oral Medicine.*

Pendle, K., BA Minnesota; MM, PhD Illinois — *Music.*

Pendrill, G., BA, MA Cantab; Dip Lib London; FLA — *Library & Information Science.*

Pennington, P. W., BSc Windsor; MD Toronto — *Family Medicine.*

Pepper, D. S., BA Toronto; PhD Stanford — *Psychology.*

Percy, D. H., DUM Toronto; MSc Guelph; PhD Cornell — *Bacteriology.*

Petersen, K. B., DDS, LDS Copenhegen — *Oral Medicine.*

Peterson, D., BA, MFA Utah — *Physical Education.*

Petrie, B., DPE Sydney; BPE Alberta; MA, PhD Michigan State — *Physical Education.*

Philbrick, A. K., BA, MS, PhD Chicago — *Geography.*

Philp, R. B., DVM Toronto; PhD — *Pharmacology.*

Phipps, J. B., BSc Birmingham; PhD — *Plant Sciences.*
Pickard, H. A., MD, FRCP(c) — *Medicine.*
Piggott, G. L., BA West Indies; MA Toronto — *Anthropology.*
Piper, G. A., MD Toronto — *Family Medicine.*
Planck, R. J., BS, PhD California — *Zoology.*
Pleva, E. G., BA, MA, PhD Minnesota; LLD Waterloo Lutheran — *Geography.*
Plourde, C. G., BA, MA Queen's; PhD Minnesota — *Economics.*
Plunkett, E. R., MD, PhD, FRCP(c) — *Obstetrics & Gynaecology, Medicine Therapeutic Radiology.*
Pollock, E. M., BA, LLB Sask; of Osgoode Hall (Barrister-at-Law) — *Law.*
Poole, W. R., QC, BA Manitoba; of Osgoode Hall (Barrister-at-Law) — *Law.*
Porterfield, C. G., BHSc Guelph — *Home Economics Althouse.*
Portis, B., BA, MA, PhD Harvard — *Business Administration.*
Pospielovsky, D., BA Sir George Williams; M Phil LSE — *History.*
Possmayer, F., BSc Toronto; PhD — *Obstetrics & Gynaecology, Biochemistry.*
Potter, T. I., Reg N, BN McGill; MSc N Boston — *Nursing.*
Poucher, M. P., BSc, MSc, DIC London; P Eng — *Engineering Science.*
Pozsonyi, J., MD Pecs — *Paediatrics.*
Pratt, G. E., BA, MD — *Family Medicine.*
Price, I. C., MDCM Dalhousie; CRCP(c) — *Medicine.*
Procunier, E. R., BA, MA Queen's — *English Althouse.*
Prodrick, R. G., BA Toronto; MS Columbia; MA Toronto — *Library & Information Science.*
Prueter, G. W., MD, BSc (Med) Toronto; MRCOG, FRCS(c) — *Obstetrics & Gynaecology.*
Pryor, E., BA St Thomas Aquinas; MA Michigan; PhD Brown — *Sociology.*
Prytulak, L. S., BA Toronto; PhD Stanford — *Psychology.*
Purdy, J. D., MA New Brunswick; PhD Toronto — *History of Education Althouse.*
Purekevich, R., BA, MA, PhD — *German.*
Purko, J., BA, MSc, PhD — *Zoology.*
Purres, J., BSc Toronto; MD Ottawa; FRCP(c) — *Medicine.*
Pylyshyn, Z. W., B Eng McGill; MSc, PhD Sask — *Psychology.*
Quigley, R. M., BASc, MASc Toronto; PhD M I T; P Eng — *Engineering Science.*
Radcliffe, D. J., BA Cantab; MA, PhD Wisconsin — *History of Education Althouse.*
Ragula, B., MD Louvain — *Family Medicine.*
Rai, J., MBBS, DMCW Calcutta; CRCP(c) — *Psychiatry.*
Rajan, B., BA, MA, PhD Cantab — *English.*
Rajic, D. S., MD Graz; CRCP(c) — *Paediatrics, Diagnostic Radiology.*
Ralph, J. D., BA Queen's; PhD Chicago — *Classical Studies.*
Ramzy Saeed, I., MB, BCh, DMSc Path, MD Path Cairo; FRCP(c) — *Pathology, Dentistry.*
Rand, C. G., BA, MA Allison; MDCM, Dipl Int Med McGill; CRCP(c), MPH Harvard — *Epidemiology & Preventive Medicine.*
Randall, M. T. C., MRCS, LRCP (Eng), CRCP(c) — *Paediatrics.*
Rankin, S. A., BA, MA Sask; PhD Ottawa — *Mathematics.*
Rans, G., BA, MA Cantab; PhD Leeds — *English.*
Rao, V. S., BA Andrha; PhD Minnesota — *Economics.*
Raud, H. R., BSc, MSc, PhD McGill — *Obstetrics & Gynaecology.*
Ray, D. W., BA, MEd Alberta; PhD London — *History of Education Althouse.*
Raymond, A. E., BA, MA Toronto; PhD Chicago — *Classical Studies.*
Rayner, W. B., BA, LLB, LLM Yale; of Osgoode Hall (Barrister-at-Law) — *Law.*

Rayward, W. B., BA Sydney; Dip Lib NSW, MS Columbia — *Library & Information Science.*
Read, S. J., MCSP, ONC, MCPA — *Physical Therapy.*
Reaney, J. C., BA, MA, PhD Toronto — *English.*
Reaveley, G. H., BA, MA, DIC Imperial College — *Geology.*
Rechnitzer, P. A., BA, MD, MRCP (Edin), FRCP(c) — *Medicine.*
Redden, C. S. — *Family Medicine.*
Reddon, J., DDS McGill — *Restorative Dentistry.*
Redekop, E. H., BA Manitoba; MA Toronto — *English.*
Redinger, R. N., BA, MD, FRCP(c) — *Medicine.*
Reese, L., MDCM Queen's; FRCS(c), FACS — *Surgery, Therapeutic Radiology.*
Reid, E., BA, MSc Illinois — *Physical Education.*
Reid, J. A., DDS Toronto — *Oral Medicine.*
Reid, W. C., DDS Toronto — *Oral Medicine.*
Reid-Smith, E. A., BA, MB, ChB Dublin; DMRD London; CRCP(c) — *Diagnostic Radiology.*
Reilly, E. E., BSA Toronto; MS Wisconsin; FRSA — *Economics.*
Reis, C. M., MA Oxon; PhD Michigan State — *Mathematics.*
Reitman, E., LèsL Paris — *Library & Information Science.*
Reitz, W. E., BS, PhD Penn State; MA Illinois — *Psychology.*
Rendall, J. A., BA Toronto; LLB Osgoode Hall; LLM Michigan; of Osgoode Hall (Barrister-at-Law) — *Law.*
Repo, R., MD Toronto; FRCS(c) — *Surgery.*
Reuber, G. L., BA, AM, PhD Harvard; FRSC — *Dean of Social Science.*
Richardson, J. R., BDHE Toronto; MSc Alberta; PhD Michigan — *Physical Education.*
Richardson, R. A., BA Sir George Williams; MA McGill; PhD Wisconsin — *History of Medicine & Science.*
Riese, R. R., BA, MA, PhD — *Psychiatry.*
Rinco, S., MSc Comelias University, Bratislava, Czech — *Mathematics.*
Rinehart, J. W., BA, MA Michigan State; PhD Ohio State — *Sociology.*
Riseling, R. A., BMEd Illinois Wesleyan; MM Texas — *Music.*
Ritcey, L. F., BA Mt Allison — *Mathematics.*
Ritchie, C. S., LLB, of Osgoode Hall (Barrister-at-Law) — *Law.*
Roach, M. R., BSc New Brunswick; MDCM McGill; PhD, FRCP(c) — *Biophysics, Medicine.*
Roberts, C., Reg N, BSc N, MEd Columbia — *Nursing.*
Robe[illegible] W. A., BS Maryland; MA, PhD Bryn Maur — *Psychology.*
Robe[illegible]n, J. M., DVM Toronto; MSc Pennsylvania — *Epidemiology & Preventive Medicine.*
Robinow, C. F., MD Hamburg; FRSC — *Bacteriology, Anatomy.*
Robinson, H. C., MD — *Family Medicine.*
Robinson, H. M. C., Chem (Eng) Sweden — *Paediatrics.*
Robinson, I. J. W., BA, MA Queen's; PhD — *Mathematics.*
Robinson, J., BSA British Columbia; MSc, PhD McGill — *Bacteriology.*
Robinson, J. B., MD Toronto — *Medicine.*
Robinson, J. B. C., MD, MSc — *Physical Medicine & Rehabilitation.*
Robinson, M. L., BA McMaster; MD, MRCOG, FRCS(c), FACS, FACOG — *Obstetrics & Gynaecology.*
Rodger, N. W., BSc, MD, BSc (Med) Manitoba; FRCP(c) — *Medicine.*
Rogers, C. W., BA Oxon; MSc, PhD Nottingham — *Applied Mathematics.*
Rollman, G. B., BA Rochester; MA, PhD Pennsylvania — *Psychology.*

Romer, T., BS M I T; M Phil Yale — *Economics.*
Rosati, P. A., BA, MA Oxon; MESc — *Engineering Science.*
Rosé, A. E., BA — *Music.*
Rose, G. S. — *Physics, Faculty of Arts.*
Roslycky, E. B., BSc, MSc Manitoba; PhD Wisconsin — *Bacteriology.*
Rosner, S. D., BSc Toronto; AM, PhD Harvard — *Physics.*
Ross, M. H., BSc, MA Dalhousie; Les L, D Ille C, Orleans-Tours — *French.*
Rossiter, R. J., BSc Western Australia; BA, MA, D Phil, BM, BCh, DM Oxon; LLD York; FRIC, FCIC, FRSC — *Vice-Pres (Academic), Biochemistry.*
Rota, A. N., MD Toronto; MSc McGill; FRCP(c), FACP, FASCP — *Pathology.*
Roth, R. R., MSc Cluj; PhD Alberta — *Zoology.*
Rounthwaite, F. J., BSc, MDCM McGill; FRCS(c), FACS — *Otolaryngology, Physiology.*
Rowbotham, B., BA, MA — *Sociology.*
Rowe, J. G., AB Harvard; BD Episcopal Theological School, College — *Dean — Faculty of Arts, History.*
Rowe, J. S. — *Althouse — Vocational Education.*
Rowland, F. H., BA — *Business Administration.*
Roy, C., BSc Laval; DIC, PhD London; P Eng — *Engineering Science.*
Rozanis, J., MSc Hebrew University; PhD McGill — *Bacteriology.*
Ruby, R. F., BA, MD, FRCS(c) — *Otolaryngology.*
Ruprecht, A., DDS, MSc D — *Oral Medicine.*
Russell, A., MD Graz; D Psych McGill; CRCP(c) — *Psychiatry.*
Russell, E. S., BA, Dipl Med Sask; MD, CRCP(a), FACA — *Anaesthesia.*
Ruud, C. A., BA Williamette; AM Harvard; PhD Berkeley — *History.*
Ryan, J. E., DDS Washington; MSc Ohio — *Restorative Dentistry.*
Ryans, A. B., BASc Waterloo; MBA Stanford — *Business Administration.*
Ryerse, S., B Mus — *Music.*
Sakmar, I. A., MSc Istanbul; PhD Berkeley — *Applied Mathematics.*
Sales, J. L., MD, FRCS(c) — *Surgery.*
Samuels, J. W., BA, LLB Queen's; LLM London — *Law.*
Sanborn, C. E., BA, MA, PhD Toronto — *English.*
Sanders, J. B., BA, MA Manitoba; DU Paris — *French.*
Sangal, S., MSc Agra; PhD Johns Hopkins — *Epidemiology & Preventive Medicine.*
Sangster, J. F., MD, CCFP — *Family Medicine.*
Sansom, T. R., BA New Brunswick; PhD London — *Political Science.*
Santosuosso, A., BA, MA, PhD Toronto — *History.*
Sapp, J. P., DDS Dalhousie; MS Michigan — *Pathology, Dentistry.*
Saraydar, A. C., BA California (L A); MA Chicago; PhD California (Berkeley) — *French.*
Saraydar, E., AB Syracuse; AM, PhD Rochester — *Economics.*
Saunders, J. T., AB Harvard; MA, PhD Ohio State — *Psychology & Sociology Althouse.*
Scheffman, D. T., BA Minnesota; PhD M I T — *Economics.*
Schloessin, H. H., BSc Zurich; PhD Cologne — *Geophysics.*
Schluetter, H. J., PhD Kiel — *German.*
Schmidt, P. K., BA, BEd, MEd Toronto — *Guidance Althouse.*
Schnore, M. M., BA, MA, PhD McGill — *Psychology.*
Schofield, I. D. F., BA, DDS, Dip OS & Anaes Toronto; FRCD(c) — *Oral Surgery.*
Schulte-Albert, H. G., BA, BS Kent; MA, MS, PhD Case — *Library & Information Science.*

Schutte, R. M., BA, MA Toronto — *Library & Information Science.*
Schwartz, P. H. E., BA, LLB OF Osgoode Hall (Barrister-at-Law) — *Law.*
Scott, A. E., BSc, PhD St Andrew's — *Dean of Science, Chemistry.*
Scott, D. M., BSc, PhD McGill — *Zoology.*
Scott, G. D., GSc, PhD Glasgow — *Plant Sciences.*
Scott, M. S., BA Rice, Texas; MA Chicago; PhD Catholic Univ of America — *Applied Mathematics.*
Scott, R. E., BSc Durham — *Zoology.*
Scott, R. L., DDS, Dip Paed Toronto; FRCD(c) — *Paediatric Dentistry.*
Sea, T. F., BA Iowa; MA Berkeley — *History.*
Sears, G. A., MD, FRCP(c) — *Medicine.*
Sears, G. M., DDS Dalhousie — *Restorative Dentistry.*
Seder-Szabolcsi, I., MA of Music Budapest — *Music.*
Seguin, J. J., BSc, MSc, PhD — *Physiology.*
Seiffert, S. L., BM, DMA Eastman; MA Brown — *Music.*
Seldon, B., BA — *Secretarial Science.*
Sellery, G. R., MD, DA Toronto; DA England; FRCP(c) — *Anaesthesia.*
Semotiuk, D. N., BPE, MA Alberta; PhD Ohio State — *Physical Education.*
Seneshen, M. J., BSc (Chem Eng), DDS Alberta — *Restorative Dentistry.*
Serdarevich, B., MSc Zagreb; PhD Swiss Fed Inst of Tech — *Biochemistry, Dentistry.*
Sergovich, F. R., BA McMaster; PhD — *Anatomy, Paediatrics.*
Setterington, K. R., DDS Toronto — *Restorative Dentistry.*
Sexton, G. B., MDCM Queen's — *Medicine.*
Shallenberg, R., BM, BMEd Phillips (Oklahoma); MM, DMA Illinois — *Music.*
Sharpe, J. R., BA, MD, FRCS(c) — *Surgery.*
Shaver, E. L., BSc, MSc, PhD — *Anatomy.*
Shaw, D. B., BSc St F X; MDCM, PhD McGill — *Medicine.*
Shaw, J. E., MD Ottawa — *Family Medicine.*
Shawyer, B. L., BSc, PhD St Andrew's — *Mathematics.*
Shea, H. L., Reg N, BSN Ed, MSN Texas — *Nursing.*
Shearer, R. S., BSc Edin; MSc New Brunswick; MD — *Family Medicine.*
Sheasby, J. S., BSc Birmingham; PhD NSW; P Eng — *Engineering Science.*
Shelstad, K. A., BE Sask; MSc Dalhousie; PhD Toronto — *Engineering Science.*
Shepherd, R. R., MD, MSc McGill; FRCS(c) — *Surgery.*
Sherebrin, M. H., BSc (EP) Manitoba; MSc, PhD — *Biophysics.*
Shervill, R. N., BA, MA, PhD North Carolina — *Spanish & Italian.*
Shimeld, A. B., DOT McGill; BA Sask; OT Reg — *Occupational Therapy.*
Shivers, R. R., AB, MA, PhD Kansas — *Zoology.*
Shorten, S. J., MA St Andrew's; MA Washington (St Louis) — *Philosophy.*
Shroyer, R. J., BA Yale; MA Toronto — *English.*
Siegel, J. A., BA Purdue; PhD Michigan — *Psychology.*
Siegel, W., BA Toronto; PhD Michigan — *Psychology.*
Siess, T. F., BA Valparaiso; PhD Minnesota — *Psychology.*
Sills, P. S., DDS Toronto — *Restorative Dentistry.*
Silverman, R. A., BA Toronto; MA, PhD Pennsylvinia — *Sociology.*
Sim, V. W., BA McMaster; MA Clark; PhD McGill — *Geography.*
Simner, M. L., BA Syracuse; MSc North Caroline State; PhD Cincinnati — *Psychology.*
Simpson, C. M., BA Notre Dame; MA, PhD Stanford — *History.*
Simpson, D. G., BA, MA, PhD — *Althouse — History of Education.*
Sinclair, N. R. S., BSc, MD, PhD Dalhousie — *Bacteriology.*

Singer, B. D., BA Wayne State; MA, PhD Pennsylvania — *Sociology.*
Singh, B., BA Lady Shri Ram College; MS Springfield — *Physical Education.*
Singh, R. P., BA, MSc, PhD — *Anatomy, Paediatrics.*
Singhal, S. K., BSc Agra, India; PhD McGill — *Bacteriology.*
Sinha, S. P., B Comm Poona; CWA Calcutta; MS (Bus Admin) — *Law.*
Skafel, S. A., Reg N, DN Ed — *Nursing.*
Skelton, R. A., ARCT Toronto; Mus Bac Toronto; MM Indiana — *Music.*
Skinner, D. H., DDS Toronto — *Restorative Dentistry.*
Slater, P. E., MD, CRCP(c) — *Anaesthesia.*
Slemon, A. G., BA Manitoba; MA, PhD Toronto — *Psychology & Sociology Althouse.*
Slinger, R. P., BA, MD Toronto; MRC Path, FRCP(c) — *Pathology, Dentistry.*
Sloan, W. G., BA, MD, FRCS(c) — *Obstetrics & Gynaecology.*
Smallbridge, J. E., BA, MA Toronto — *English Althouse.*
Smeriglio, V. L., BA Brown; MA, PhD Iowa — *Psychology.*
Smieja, F. L., BA National, Ireland; MA, PhD London — *Spanish & Italian.*
Smith, B. E., B Comm Carleton — *Economics.*
Smith, B. R. W., DDS, Dip Orth Toronto — *Paediatric Dentistry.*
Smith, D. B., BA, MA British Columbia; PhD Toronto — *Biochemistry.*
Smith, D. M., BA, MD, CRCS(c) — *Otolaryngology.*
Smith, D. R., MD, FRCP(c) — *Medicine.*
Smith, E. A., BA, MD — *Edidemiology & Preventive Medicine.*
Smith, F., BA Mt Alison — *Music.*
Smith, J. M., DDS Toronto; CD — *Oral Medicine.*
Smith, M. E., BA Texas; MA Columbia; MA Yale — *English.*
Smith, P. A., BSc Liverpool; MBA — *Business Administration.*
Smith, T., BA Cantab; PhD Johns Hopkins — *Geography.*
Smout, M. S., MD, MRC Path, CRCP(c), FCAP — *Pathology (Meek Labratory), Dentistry.*
Solomon, R., LLB Osgoode Hall; LLM Yale — *Law.*
Soltan, H. C., BA, PhD Toronto; MD — *Anatomy, Paediatrics.*
Somerset, J. A. B., BA Toronto; MA, PhD Birmingham — *English.*
Song, S. H., MD Yonsei; MA Suny College at Buffalo; PhD — *Biophysics.*
Soranaka, I., BS Wisconsin State; MA Wisconsin — *History.*
Sorrentino, R. M., BA, PhD Suny at Buffalo; MA American — *Psychology.*
Sorrill, P. W., BA, MA Toronto — *Elementary Teaching Althouse.*
Southwood, K. J., MD Toronto — *Family Medicine.*
Spence, I., MA Glasgow; MA Guelph; PhD Toronto — *Psychology.*
Spence, M. W., BA, MA Toronto; PhD Southern Illinois — *Anthropology.*
Spencer, E. Y., BSc, MSc Alberta; PhD Toronto; FCIC — *Biochemistry.*
Spencer, H., PhD Prague — *German.*
Spoerel, W. E. G. A., MD Frankfurt-on-Main; FRCP(c) — *Anaesthesia, Pharmacology.*
Sproule, R. E., B Comm McGill; MBA, PhD M I T — *Business Administration.*
Sprovieri, C., BA, MA Gonzaga; BLS UBC; MLS — *Library & Information Science.*
Squire, G. W., BA, MD, FRCP(c) — *Anaesthesia.*
Squires, B. P., BA, MD, PhD — *Physiology.*
Stabler, E., BA Queen's; MA McGill; EdD Harvard — *Dean — Althouse.*
Stacey, F. C., BG, PhD — *Geophysics.*
Stanko, S. C., BA, MA Alberta — *English.*
Stanley Porter, D. P., BA Toronto; PhD London — *Classical Studies.*

Stark, J. A., BA Minnesota; Mus M Toronto — *Music.*
Stark, S., BA Minnesota — *Music.*
Starkey, J., BSc, PhD Liverpool — *Geology.*
State, E. Y., BSc Toronto; MS, PhD Illinois — *Mathematics.*
Stavraky, G. W., MB Odessa; MSc, MDCM McGill; FRSC — *Medicine.*
Stavraky, K. M., MD, PhD — *Epidemiology & Preventive Medicine.*
Stavraky, W. K., MD, FRCS(c) — *Surgery.*
Steele, I. K., BA Alberta; PhD London — *History.*
Steele, J. E., BSc Dalhousie; MSc, PhD Saskatchewan — *Zoology, Physiology.*
Steinby, M., BSc, MSc, PhD Turku — *Computer Science.*
Stelling, J. G., BA Michigan; PhD Chicago — *Sociology.*
Stevenson, A. G., DOT NSW; OT Reg — *Occupational Therapy.*
Stevenson, H. A., BA, Dip Ed, MA — *History of Education Althouse.*
Stevenson, J. C., BA — *Secretarial Science.*
Stewart, D., Reg N, MSc N, BSc N — *Nursing.*
Stewart, H. B., MD, PhD Toronto; PhD Cantab — *Dean of Graduate Studies, Biochemistry.*
Stewart, J. M., MD, CRCP(c) — *Anaesthesia.*
Stewart, J. W., CD, BA, BSc Sask; MSc Michigan; P Eng — *Engineering Science.*
Stewart, K., BA, BPE McMaster — *Physical Recreation Intramurals.*
Stewart, O. J., BA, MD, CRCP(c) — *Physical Medicine & Rehabilitation, Psychiatry.*
Stewart, T. W. W., BSc, MSc, PhD London — *Physics.*
Stiller, C. R., MD Sask; CRCP(c) — *Medicine.*
Stingle, R. M., BA, MA Toronto — *English.*
Stockdale, W. H., BA, MA Alabama; PhD New York — *Graduate Studies, History.*
Stokes, J. L., BM Eastman — *Music.*
Stone, G. L., BA U C L A; M Div Princeton Theological; MA, PhD Michigan — *Psychology.*
Stothart, C. L., BS North Carolina; MS Penn State — *Intercollegiate Athletics.*
Stothart, J. P., BPE, MSc Alberta; PhD Penn State — *Physical Education.*
Stothers, J. B., BSc, MSc, PhD McMaster — *Chemistry.*
Stouffer, J. L., BS Suny at Buffalo; MS, PhD Penn State — *Communication Disorders.*
Strathern, G. M., BA New Zealand; Dip NZLA — *Library & Information Science.*
Straulman, A. T., AB Wellesley; MA Kansas City; PhD Wisconsin — *English.*
Strejan, G. H., MS Bucharest; PhD Hebrew University, — *Jerusalem Bacteriology.*
Strickland, K. P., BSc, MSc, PhD — *Biochemistry.*
Strube, R. F. E., BS Massachusetts; MSc, PhD Michigan — *Mathematics.*
Stuart, R. K., MD, FRCP(c) — *Medicine.*
Stubbs, M., AOCA — *Fine Art.*
Sudar, D. D., BA, BLS Toronto — *Library & Information Science.*
Suffel, G. G., BSc, MSc Queen's; PhD Stanford — *Geology.*
Suffel, P. S., RN Peking; MD West China — *Family Medicine.*
Sukava, A. J., BSc, MSc Manitoba; PhD McGill — *Chemistry.*
Sullivan, P. J., BASc, MASc Waterloo; PhD Cantab — *Applied Mathematics, Engineering.*
Summerby, J. H., BSc, MDCM McGill; CRCP(c) — *Psychiatry.*
Surette, L., BA Queen's; MA, PhD Toronto — *English.*

Sutherland, R. M., BSc Acadia; PhD Rochester — *Biophysics.*
Sutterlin, P. G., BSc McMaster; PhD Northwestern — *Geology.*
Sutton, M. D., MD, FRCP(c) — *Paediatrics.*
Suzuki, M., DDS Tokyo; MS Rochester; DMD Manitoba — *Restorative Dentistry.*
Svenonius, E., AB Barnard; MA Pennsylvania; PhD Chicago — *Library & Information Science.*
Svrcek, W. Y., BSc, PhD Alberta; P Eng — *Engineering Science.*
Swart, G. T., BA Beloit; MS, PhD Marquette — *Physiology.*
Swartman, R. K., BSc, MSc Queen's; P Eng — *Engineering Science.*
Sweeney, J. P., MD, FRCS(c), FACS — *Surgery.*
Szilard, A. L., BA, MA — *Computer Science.*
Talman, J. D., BA, MSc, PhD Princeton — *Applied Mathematics.*
Talman, J. J., BA, MA, LLD, PhD Toronto; D Litt Waterloo; FRSC — *History.*
Tam, W. H., BSc, PhD Hong Kong — *Zoology.*
Tannis, G., BA, MSc Alberta — *Physical Education.*
Tarasuk, J. D., BASc, MASc Toronto; PhD Sask — *Engineering Science.*
Tausky, T. E., BA McGill; BA Cantab; MA, PhD Yale — *English.*
Taylor, C. P. S., BA British Columbia; BA, MA Oxon; PhD Pennsylvania — *Biophysics.*
Taylor, F. W., BA, MA, PhD Toronto — *Psychology.*
Taylor, H. W., BA West Chester State; MA Indiana; PhD Geography — *Geography.*
Taylor, J. C., BA, CA (Ont) — *Business Administration.*
Taylor, L. V., DDS Toronto — *Restorative Dentistry.*
Teevan, J. J., BA Suny; MA, PhD Indiana — *Sociology.*
Terry, E. W., BA, B Paed Toronto; M Mus Montreal — *Music.*
Tevaarwerk, G. J. M., BA, MD, FRCP(c) — *Medicine.*
Teteruck, W. R., BSc, DDS McGill; MSD Indiana — *Restorative Dentistry.*
Tew, W. L., BA, MD, FRCP(c), FACS — *Obstetrics & Gynaecology.*
Tew, W. P., MB Toronto; LLD, FRCS (Edin), FRCS(c), MRCOG, FRCOG — *Medicine.*
Thain, D. H., MBA, DBA Harvard — *Business Administration.*
Theoret, J. J., BSA Toronto; MD — *Medicine.*
Thierrin, G., Lic Math, Doc Math Fribourg (Switz) — *Mathematics.*
Thiruchelvam, N., MCPA, MCPA Ceylon — *Physical Therapy.*
Thompson, C. A., BA, MDCM McGill; CRCS(c) — *Ophthalmology.*
Thompson, E. S., DDS Toronto — *Oral Medicine.*
Thompson, G., BM Performer's Cert at Indiana University — *Music.*
Thompson, G. H., MD — *Family Medicine.*
Thompson, J. M., BA Amherst; MD, FRCP(c) — *Medicine.*
Thompson, M. G., BSc, MD, D Psych Toronto; FRCP(c) — *Psychiatry.*
Thompson, W. A., AB Drury; MBA Harvard; LLD Waterloo Lutheran — *Business Administration.*
Thomson, D. H., MB, ChB Glasgow; DMRT (Eng); CRCP(c) — *Therapeutic Radiology.*
Tillmann, W. A., MD, MSc, CRCP(c) — *Psychiatry.*
Tillotson, J. G., BSc Manitoba; MSc — *Physics.*
Timothy, H. B., MA, BD Glasgow; BA London; PhD Edinborough — *Classical Studies.*
Titherington, B., Reg N, BSc N — *Nursing.*
Tobias, S. F., AB Harvard; AM Chicago — *Anthropology.*
Tobin, W. G., MD Toronto — *Psychiatry.*

Toda, Y. K., BA, MA Tokyo; PhD Harvard — *Economics.*
Tong, B. Y., BSc Hong Kong; MLS, MA California (Berkeley); PhD California San Diego — *Physics.*
Toogood, J. H., MD Toronto; Dipl Int Med McGill; FRCP(c) — *Medicine.*
Torrens, R. W., BS Dartmouth; MA Harvard; PhD Cornell — *French.*
Tracy, G. L., BA Queen's; MA, PhD Wisconsin — *German.*
Trevithick, J. R., BSc Queen's; PhD Wisconsin — *Biochemistry.*
Trider, M., DOT Toronto; OTR, OT Reg — *Occupational Therapy.*
Troster, M. M., MD Toronto; FRCP(c) — *Pathology.*
Troughton, M. J., BA, B Litt, MA Oxon; PhD — *Geography.*
Trout, E. E., MD, FAAP, CRCP(c) — *Paediatrics.*
Tsutsumi, T., To Ho Conserv Tokyo; Artist Diploma Indiana — *Music.*
Tuchmaier, H. S., BA Southwest Missouri State; MA, PhD Laval — *French.*
Tunaley, J. K. E., BSc, PhD Sheffield — *Physics.*
Tuomi, S., BA, MA Turku; PhD Northwestern — *Communication Disorders.*
Turnbull, D. I., BSc, MDCM McGill — *Pathology (Meek Labratory).*
Turner, G. H., BA, MA, PhD Toronto — *Psychology.*
Turner, R. J., BA Sacramento State; PhD Syracuse — *Sociology.*
Tustanoff, E. R., BA Windsor; MS Detroit; PhD — *Clinical Biochemistry.*
Uhlemann, M., BSc, MSc Colorado State — *Educational & Vocational Counselling.*
Usprich, S., LLB, Osgoode Hall (Barrister-at-Law) — *Law.*
Valentine, G. H., MB, ChB Bristol; MRCS (Eng); MRCP (London); DHC (Eng); FAAP, FRCP(c) — *Paediatrics.*
Valentine, P., MCSP, MCPA — *Physical Therapy.*
Vanderwolf, C. H., BSc Alberta; MSc, PhD McGill — *Psychology, Physiology.*
Van Fleet, F. M., BA, MA McMaster; PhD Colorado — *Psychology.*
Van Huystee, R. B., BA, MA Sask; PhD Minnesota — *Plant Sciences.*
Van Ostrand, G., BSc Suny; MM, DMA Eastman — *Music.*
Vardanis, A., BSc Leeds; MSc, PhD McGill — *Biochemistry.*
Veevers, J. E., BA, MA Alberta — *Sociology.*
Veldhuis, K., MD Queen's; FRCP(c) — *Medicine.*
Venesoen, C. A., L es L, D es L Laval — *French.*
Verma, K., BA, DOT Bombay; OT Reg — *Occupational Therapy.*
Vermeeren, J. G., B Comm, MA Toronto — *Economics.*
Vernon, R. A., BA Trinity; PhD London — *Political Science.*
Vickery, W. E., BE Vanderbilt; MBA Harvard; PhD Chicago — *Economics.*
Vidmar, N. J., AB McMurray; AM, PhD Illionois — *Psychology.*
Vigars, R. J., BSc Southern Illinois; MA California — *Physical Education.*
Vikar, A. B., BA, MA Toronto — *French.*
Vilquin, J., L es L Paris — *French.*
Vincent, J. E., BSc McGill; MDCM Queen's; FAAP, FRCP(c) — *Paediatrics.*
Vinger, I., BA, MDCM McGill — *Family Medicine.*
Vivian, P. E., BASc Toronto; LLB — *Law.*
Vogan, E. L., BSc, MSc, PhD McGill — *Physics.*
Von Kuster, C. A., LRCT Toronto; Mus Bac Toronto — *Music.*
Von Lanzenauer, C. H., Dipl Volkswirt, PhD Bonn — *Business Administration.*
Vranch, J. K., BSc, MA, PhD Waterloo — *Mathematics.*
Wainwright, R. J., DDS Toronto — *Oral Medicine.*
Walden, D. B., BA Wesleyan; MSc, PhD Cornell — *Plant Sciences, Paediatrics.*
Walker, F. A., MDCM McGill — *Paediatrics.*
Walker, F. W., DVM Toronto; MD, CRCP(c) — *Anaesthesia.*

Walker, I. G., BA Sask; MA, PhD Toronto — *Biochemistry.*
Walker, J. B., MD, FRCP(c), MRCP — *Medicine.*
Walker, J. H., MD, MSc, FRCS(c), FACS — *Surgery.*
Walker, W. J., DDS Toronto — *Restorative Dentistry.*
Wallace, A. C., BA, MD, FACP, FRCP(c) — *Pathology.*
Waller, R. L., BA, MA Columbia — *Secretarial Science.*
Walsh, J. E., BA, BEd Toronto — *Computer Studies Althouse.*
Walsh, M. R., BA Exeter; MA Kent — *English.*
Walters, J. H., BA, MD, MRCOG, FRCS(c) — *Obstetrics & Gynaecology.*
Walters, R. L., BA Oberlin; MA, PhD Princeton — *French.*
Wanklin, J. M., BA, PhD — *Epidemiology & Preventive Medicine.*
Ware, W. R., BA Reed College; PhD Rochester — *Chemistry.*
Warma, S. K., MBBS Calcutta; FRCS (Eng); CRCS(c), FACS — *Anatomy.*
Warnhoff, E. W., AB Washington; PhD Wisconsin — *Chemistry.*
Warnhoff, P. R., AB Trinity-Washington; MSC M I T; PhD South Cal — *Chemistry.*
Warntz, W., BS, AM, PhD Pennsylvania — *Geography.*
Warren, B. A., BSc (Med), MBBS Sydney; D Phil, MA Oxford; FRCPA — *Pathology.*
Warren, K. R., MD, BSc Eng Saskatchewan — *Family Medicine.*
Warwick, O. H., BA Mount Allison; MDCM McGill; MA Oxon; FRCP (London); FRCP(c), FACP, LLD Mount Allison — *Medicine (on leave).*
Watson, A., BSc, MSc Tech Manchester; DSU Southampton; C Eng; P Eng — *Engineering Science.*
Watson, E. M., MD, MSc, MRCP (Edin); FRCP (Edin); FRCP(c), FACP — *Medicine.*
Watson, J. H., MDCM Dalhousie; DPH Toronto — *Epidemiology & Preventive Medicine.*
Watson, R. C., BA, BPE McMaster; MSc Alberta — *Physical Education.*
Watson, T. A., MB, ChB New Zealand; DMR London; MD Sask; FACR, FRCP(c) — *Therapeutic Radiology.*
Watson, W. C., MB, ChB, MD, PhD Glasgow; MRCP London; FRCPG — *Medicine.*
Way, D. C., DDS Toronto; MS Michigan; FRCD(c) — *Social Dentistry.*
Wearing, M. P., MD, MSc, CRCS(c) — *Obstetrics & Gynaecology.*
Wearring, G. A., BA, MS Southern California; PhD Michigan — *Physical Education.*
Weaver, S., BM, MM Indiana — *Music.*
Webber, H. D., BSc, MSc — *Science Althouse.*
Webling, D. D., BSc, MB, BS, PhD Adelaide; DTM&h sydney — *Biochemistry.*
Webster, A. C., BSc, MB, ChB Leeds; FFARCS (Eng); FRCP(c) — *Anaesthesia.*
Wehlau, A., AB, PhD California — *Astronomy.*
Wehlau, W. H., AB, PhD California — *Astronomy.*
Weick, R. F., BA, BS Texas A & M; PhD Stanford — *Physiology.*
Wellman, A. M., BSc, PhD Bristol — *Plant Sciences.*
West, N. W., BA, BEd, BPHE Toronto; MRSH — *Physical Education Althouse.*
Westgate, D. G., BA — *Business & Commerce Althouse.*
Westhues, K., BA Conception College; MA, PhD Vanderbilt — *Sociology.*
Westmacott, M. W., BA Calgary; MA Carleton; PhD Edmonton — *Political Science.*
Weston, W., MD Toronto; CCFP — *Family Medicine.*

Wettlaufer, J., BA, MBA, LLD Waterloo Lutheran — *Dean of Business Administration.*
Whebell, C. F. J., BA, MSc, PhD London — *Geography.*
Whelen, W. S., BSc, MDCM McGill; FAAP, CRCP(c) — *Paediatrics.*
Whippey, P. W., BSc, PhD Reading — *Physics.*
Whitby, J. L., BA, MA, MB, B Chir Cantab; MRCP (London); DTM & M (London); FRC Path — *Bacteriology.*
White, D. F., MD, FRCP(c) — *Pharmacology.*
White, J. H., BA, Mus G Paed, MM Eastman; ARCT Toronto — *Music Althouse.*
White, J. H., BA Toronto; MS Columbia — *Library & Information Science.*
White, R., BA Swarthmore; MA, PhD North Carolina — *Geography.*
Whitehead, P. C., AB Providence College; MA, PhD Macsachusetts — *Sociology.*
Whiteman, D. E., DDS Toronto — *Oral Medicine.*
Whitman, C., BSc, DDS McGill; Dip Perio Toronto; FRCD(c) — *Oral Medicine.*
Wickware, D. M., MDCM Queen's; D Psych Toronto; CRCP(c) — *Psychiatry.*
Wiebe, J. P., BSc, PhD British Columbia — *Zoology.*
Wien, F. C., BA Queen's; MA, PhD Cornell — *Office of International Education & Sociology.*
Wiesendanger, M., MD — *Physiology.*
Wightman, W. R., BA, MA, PhD Durham — *Geography.*
Wigston, F., BA — *Physical Education Althouse.*
Wilcox, L. D., MD, FRCP(c) — *Medicine.*
Wild, J. L., BA, MA Michigan — *Journalism.*
Wilkins, L., BM Eastman — *Music.*
Wilkins, P. O. B., MS Hawaii; PhD Pennsylvania — *Bacteriology.*
Wilkins, W. W. J., MDCM Queen's; DMR Toronto; FRCP(c) — *Diagnostic Radiology.*
Wilkinson, F. R., BA Utah; MA Hawaii; PhD Michigan State — *Psychology.*
Willan, B. D., MD — *Therapeutic Radiology.*
Williams, J. I., BA Nebraska Wesleyan; MA New Hampshire; PhD Florida State — *Sociology, Medicine.*
Williams, M. E., BS William & Mary; MA, PhD Bryn Mawr — *Philosophy.*
Williamson, D., BA Liverpool; MA — *Business Administration.*
Willis, C. J., MA, PhD Cantab — *Chemistry.*
Willis, G. D., BA Alberta; MA Birmingham — *English.*
Willis, N. R., MD, MSc, FRCS(c) — *Ophthalmology.*
Wilson, A. S., MB, ChB, MD Glasgow — *Anatomy.*
Wilson, C. E., BA, MSc Northwestern; PhD Southern Illinois — *Journalism.*
Wilson, D. G., BA, MA Queen's; PhD Wisconsin — *Plant Sciences.*
Wilson, H. R., BA, MA Toronto; PhD Michigan — *English.*
Wilson, M. R., Reg N, BSc N — *Nursing.*
Wilson, R. K., BA Harvard; MA California (Berkeley); PhD Chicago — *Russian Studies.*
Winder, C. G., BSc, MSc, PhD Cornell — *Geology.*
Wise, D. D., BS, MEd Kent State; BS in P T — *Intercollegiate Athletics.*
Wolfe, B. M., BA Sask; BM, BCh oxon; MSc McGill; FRCP(c) — *Medicine, Biochemistry.*
Wong, G. L., BSc, MD Alberta; CRCS(c) — *Otolaryngology.*
Wonnacott, R. J., BA, MA, PhD Harvard — *Economics.*
Wonnacott, T. H., BA, PhD Princeton — *Mathematics.*
Wood, A. R., BSc Queen's; MBA, DBA Harvard — *Business Administration.*
Wood, T. E., BA, MD, MSc McGill; FRCP(c) — *Medicine.*

Wood, V., Reg N, BSc N, EdM Boston — *Nursing.*
Woodman, R. G., BA British Columbia; MA Manitoba; PhD Toronto — *English.*
Woodruff, J. F., BA Toronto; PhD Chicago — *English.*
Woodward, R. S., BA Haverford; MA, PhD Washington — *Economics.*
Woolcock, H. R., B Occ Thy Queensland; MAAOT — *Occupational Therapy.*
Wright, G. Z., BSc Manitoba; DDS Toronto; MSD Indiana — *Paediatric Dentistry.*
Wright, J. S., BA Toronto — *Science Althouse.*
Wright, M. J., BA, MA, PhD Toronto — *Psychology.*
Wright, V. C., MD, FRCS(c) — *Obstetrics & Gynaecology.*
Wrigley, L., BSc L S E; DBA Harvard — *Business Administration.*
Wyatt, J. K., MD, FRCS(c) — *Surgery.*
Wynne, E., Reg N, BSc N, MSc N — *Nursing.*
Young, A. M., BA Toronto — *English.*
Young, G. M., BSc, PhD Glasgow — *Geology.*
Young, R. A., BA Loyola; BEd Montreal; MEd McGill — *Guidance Althouse.*
Youssef, Z., L es L Lousanne; DU Paris — *French.*
Yovetich, W. S., BS Suny College at Buffalo; MA Western Michigan; CCC — *Communication Disorders.*
Yuhasz, M. S., BA, MS, PhD Illinois — *Physical Education.*
Yuzpe, A. A., BSc Assumption of Windsor; MD, MSc, FRCS(c) — *Obstetrics & Gynaecology.*
Zabransky, F., BASc Toronto; MA, PhD — *Business Administration.*
Zajic, J. E., BA Kansas; MS Wisconsin; PhD California; JD Oklahoma City — *Engineering Science, Bacteriology.*
Zaltz, M., MD, CCFP — *Family Medicine.*
Zamir, M., C Eng; AFRAeS, BSc, PhD London — *Applied Mathematics.*
Zaslow, M., BA, BEd Alberta; MA, PhD Toronto — *History.*
Zeigler, E. F., BA Bates College; MA, PhD Yale — *Dean of the Faculty of Physical Education.*
Zeisner, R. E., BA, MA Michigan — *Physical Recreation & Intramurals.*
Zezulka, J. M., BSc, MA Alberta; PhD Queen's — *English.*
Zimmer, I. A., BA Toronto; BPE McMaster — *Althouse — Physical Education.*
Zoltvany, Y., BA Loyola; MA Montréal; PhD Alberta — *History.*
Zulqar Nain, B. J., BDS Punjab; MS Cert Perio Rochester; Cert — *Oral Medicine.*
Zuzanek, J., PhD Charles U Prague — *Sociology.*

General Information
Faculty of Arts
Faculty of Music
Faculty of Science
Faculty of Social Science
Faculty of Physical Education
School of Business Administration
Faculty of Engineering Science
Faculty of Law
Faculty of Dentistry
Faculty of Medicine
Faculty of Nursing
Faculty of Graduate Studies
School of Library & Information S
Althouse College of Education
Brescia College
Huron College
King's College
Appendices — Financial Aid, Facu