THE UNIVERSITY OF WESTERN ONTARIO CALENDAR 1971-1972

The University of Western Ontario Calendar for 1971 • 1972

General Information

Faculty of Arts

Faculty of Dentistry

Faculty of Engineering Science

Faculty of Graduate Studies

Faculty of Law

Faculty of Medicine

- Program in Communication Disorders
- Program in Occupational Therapy
- Program in Physical Therapy

Faculty of Music

Faculty of Nursing

Faculty of Science

Faculty of Social Science

Althouse College of Education

School of Business Administration

School of Library and Information Science

Affiliated Colleges — Huron College • Brescia College • King's College

1971

JANUARY

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1972

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THE UNIVERSITY OF WESTERN ONTARIO

COMPOSITE CALENDAR

1971-72

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 publication of this Calendar.
7. The Faculty listings herein are effective December 1, 1970; the remaining content of this Calendar is effective January 1, 1971.

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THE BOARD OF GOVERNORS

Officers of the Board

Captain J. Jeffery, Chairman
Mr. R.M. Ivey, Vice Chairman
Mr. C.F. Way, Secretary

Chairman Emeritus

Colonel D. B. Weldon

Honorary Members

Mr. W.L. Duffield

Ex-Officio Members of the Board

The Chancellor, The President, The Mayor of the City of London,
The Warden of Middlesex County

Appointed by the City Council of London

Mr. W.C.P. Baldwin, Mr. W.J. Evans, Mr. Harry J. Fraleigh,
Captain Joseph Jeffery

Appointed by the Lieutenant Governor in Council

Brigadier W.H. Hemphill, Mr. R.M. Ivey, Dr. W.H. Rea, Colonel D.B. Weldon

Alumni Representatives

Miss J. MacFarlane, Dr. C.S. Ward

Elected by the Senate

Professor W. Balderston, Professor M.L. Barr, Professor J.A.F. Stevenson,
Professor W.A. Thompson

Elected by the Board of Governors

Vice-President A.K. Adlington, Mr. W.J. Blackburn, Dr. A.H.J. Lovink,
Vice-President R.J. Rossiter, Mr. A.E. Shepherd, Mr. J.A. Taylor,
Vice-President O.H. Warwick

UNIVERSITY ADMINISTRATIVE OFFICERS

Official Visitor: His Honor, the Lieutenant Governor of Ontario

Chancellor: A. W. Trueman, BA, MA, DLitt, LLD

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

Vice President (Academic): R. J. Rossiter, BSc, BA, DPhil, BMBCh, MA, DM, FRIC, FCIC, FRSC

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

Vice President (Health Sciences): O. H. Warwick, MD, CM, MA, MRCP, FRCP(C), FACP

Dean of Men: T. L. Hoskin, MA

Assistant Dean of Men: A. E. D. MacKenzie, MA

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

Registrar: J. K. Watson, MA, PhD

Associate Registrar: Margaret P. May, BA

Assistant Registrars: Donald G. Henderson, BA; Richard P.W. McCutcheon, BA

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

Associate Librarians: J.F. MacPherson, BA, MA, ALA; R. Stierwalt, BA, MLS

Director, Summer School and Extension: Angela M. Armitt, BA, MA

Director, French Summer School: G. Gagnon, BA LèsL, MA, CREDIF

Director, Intercollegiate Athletics: J. P. Metras

Director, Health Services: R. J. Bowen, BA, MD

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

Director, Placement and Off-Campus Housing: D.W. Klinger, BA, MA

Comptroller: R. R. Glover, BA

Director, Information Services and University Publications: G. C. McDonald, BA

Director, Alumni Affairs: G. C. McDonald, BA

Director, Physical Plant: J. Shortreed, BASc, PEng

Director, Food Services: G. A. Bullas

UNDERGRADUATE ACADEMIC CALENDAR

1971

June 28, Monday	First Term begins for Fourth Year, Faculty of Medicine.
July 1, Thursday	Last day for receiving admission applications for Winter Session 1971-72.
July 5, Monday	Summer Day Session begins.
August 6, Friday	Last day for receiving applications for examinations for removal of conditions — Faculties of Dentistry and Medicine.
August 13, Friday	Summer School lectures end.
August 13 – 18	Summer School examinations.
August 27, Friday	Examinations for removal of conditions (9:00 a.m.) — Faculty of Dentistry, Dental Sciences Building; Faculty of Medicine, Medical Sciences Building.
August 30, Monday	Second Term begins for Fourth Year Faculty of Medicine.
August 31, Tuesday	Last date for return of Mail Registration in Professional Programs.
September 1, Wednesday	General assembly of First Year Students (9:30 a.m.); lectures begin for Second and Third year students — Faculty of Law.
September 1 – 10	Orientation program for First Year students — Faculty of Law.
September 7, Tuesday	Lectures begin for Third Year Basic Nursing.
	Clinical Orientation for Third Year Dentistry (8:00 a.m.) — Dental Sciences Building.
September 10, Friday	Last day for receiving admission applications for Extension and Correspondence Courses 1971-72 Winter Session.
September 13, Monday	First day Freshmen Registration — Thames Hall.
	First day Preregistration in courses of Honors or Major subject (in Departments).
	Lectures begin for First Year Law.
	Lectures begin for Second Year Basic Nursing Program.
	Issue of student instrument kits for First, Second and Fourth Year Dentistry — Dental Stores, Lower Ground Floor, Dental Sciences Building. (10:00 a.m. to 2:00 p.m.).
September 14, Tuesday	Second day Freshmen Registration — Thames Hall.
	Second day Preregistration in Honors/Major courses.
	Lectures begin for all years, Faculty of Dentistry.
	Lectures begin for First, Second and Third Years, Faculty of Medicine.
September 15, Wednesday	Registration in all courses in Honors Programs — Faculties of Arts, Science, Social Science.
	Registration in Upper Years — Faculties of Engineering Science, Music, Nursing, Home Economics, Secretarial Science, Communication Disorders, Occupational Therapy, Physical Therapy.
September 16, Thursday	Registration in all courses in Three Year Programs in Arts and Science (2nd & 3rd Years).
	Lectures begin for Fourth Year Basic Nursing Program.
September 17, Friday	Registration in all courses in Three Year Programs in Social Science (2nd & 3rd Years)
September 20, Monday	Lectures begin — Faculties of Arts, Engineering Science, Music, Nursing (First Year Basic Nursing Program; all Years Program for Registered Nurses), Science, Social Science.
	Lectures begin — School of Business Administration.
	Last day for receiving registration forms for Extension and Correspondence courses.
September 25, Saturday	Extension Classes begin in out-of-town Centres.
September 27, Monday	Extension Classes begin on London Campus.
October 11, Monday	Thanksgiving Day Holiday.
October 15, Friday	Last day for late Registration of full-time students.
	Last day for adding courses.
October 29, Friday	Autumn Convocation.
November 1, Monday	Last day for dropping a First Term half course without penalty.
	Third Term begins for Fourth Year, Faculty of Medicine.
November 5, Friday	First Quarter ends for First, Second and Third Years, Faculty of Medicine, and all Years Faculty of Dentistry.
November 8, Monday	Second Quarter begins for First, Second and Third Years, Faculty of Medicine, and all Years, Faculty of Dentistry.
December 11, Saturday	Lectures end for all Faculties except Dentistry and Medicine.
December 13, Monday	First Year tests and Second and Third Year Examinations — Faculty of Law.
December 17, Friday	Lectures end for First, Second and Third Years, Faculty of Medicine, and all Years, Faculty of Dentistry. (Fourth Year Medical students will each receive one week off during the Christmas vacation period, to be arranged by the Chairman of the Department concerned.)
December 22, Wednesday	First term ends — Faculty of Law.

1972

January 3, Monday	Lectures resume – 8:30 a.m.
January 8, Saturday	First Term ends for all Faculties except Law, Medicine and Dentistry.
January 10, Monday	Second Term begins for all Faculties except Medicine and Dentistry.
	Fourth Term begins for Fourth Year, Faculty of Medicine.
January 14, Friday	Second Quarter ends for First, Second and Third Years, Faculty of Medicine and for all years, Faculty of Dentistry.
January 15, Saturday	Last day for dropping a full course without penalty.
January 17, Monday	Third Quarter begins for First, Second and Third Years, Faculty of Medicine and all Years, Faculty of Dentistry. Payment of final instalment of fees is required on or before this date.
February 21, Monday	Last day for dropping a second term half course without penalty.
February 21 – 26	Conference Week (except Faculty of Law).
March 1, Wednesday	Last day for receiving application for graduation.
March 7, Tuesday	Founder's Day.
March 10, Friday	Third Quarter ends for First, Second and Third Years, Faculty of Medicine, and all years, Faculty of Dentistry.
March 13, Monday	Fourth Quarter begins for First, Second and Third Years, Faculties of Dentistry and Medicine.
	Study Week begins for Fourth Year, Faculty of Dentistry.
	Fifth term begins for Fourth Year, Faculty of Medicine.
March 20, Monday	Examinations begin for Fourth Year, Faculty of Dentistry.
March 27, Monday	Fourth Quarter begins for Fourth Year, Faculty of Dentistry.
March 31	Good Friday
April 7, Friday	Last day for receiving admission applications for Evening Summer Session from students registering for the first time.
April 15, Saturday	Last day of lectures and end of Second Term – all Faculties except Law, Medicine and Dentistry.
April 17 – May 6	Examinations.
April 21, Friday	Second term classes end – Faculty of Law.
April 24, Monday	Examinations begin – Faculty of Law.
April 26, Wednesday	*Third Term begins for Third Year, Basic Nursing Program.
May 1, Monday	Last day for receiving registration forms for Summer Evening Session.
May 5, Friday	Lectures end for First, Second and Third Years, Faculties of Dentistry and Medicine.
May 6, Saturday	Second term ends – Faculty of Law
May 8, Monday	Third Term begins for Second and Third Years, Program for Registered Nurses.
	Study Week begins for First, Second and Third Years, Faculties of Dentistry and Medicine.
May 14, Sunday	Fifth Term ends for Fourth Year, Faculty of Medicine.
May 15, Monday	Examinations begin for First, Second and Third Years, Faculties of Dentistry and Medicine.
May 19, Friday	Fourth Quarter ends for Fourth Year, Faculty of Dentistry.
May 22, Monday	Victoria Day Holiday.
May 23, Tuesday	Summer Clinic commences for Third Year, Faculty of Dentistry.
May 24, Wednesday	Medical Council of Canada examinations begin for Fourth Year, Faculty of Medicine.
May 27, Saturday	Third Term ends – Faculty of Nursing.
May 30 – June 2	Spring Convocation.
June 2, Friday	Last day for receiving admission applications for Summer Day Session for students registering for the first time.
June 16, Friday	Last day for receiving registration forms for Summer Day Session.
June 23, Friday	Summer Clinic ends for Third Year, Faculty of Dentistry.

REGISTRATION

With the exception of the professional Faculties which register by mail (Business, Dentistry, Law, Medicine), undergraduate registration for the academic session 1971-72 will be conducted during the week of September 13-17 (See Undergraduate Academic Calendar).

Preregistration in the courses of Honors, Special Programs and Three-Year Programs with areas of concentration will be conducted on Monday and Tuesday, September 13 and 14, 1971. Further details of procedures will be provided following the issuance of the Spring Examination Reports.

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*Starting date of Third Term for First and Second Years, Basic Nursing Program, to be determined by examination dates of courses involved.

CALENDAR FOR SENATE ELECTIONS – 1971

Student Representation

Call for nominations of eligible candidates to represent the student body as required by The University of Western Ontario Act, 1967: up to October 15th, 1971.
Polling of Ballots: October 24 – 31, 1971.

Faculty Representation

Call for nominations of eligible candidates to represent the academic units, other than the Faculty of Graduate Studies, as required by The University of Western Ontario Act, 1967:up to September 15, 1971.
Polling of Ballots: September 23 – 30, 1971.

Faculty of Graduate Studies Representation

Call for nomination of eligible candidates to represent the Faculty of Graduate Studies as required by The University of Western Ontario Act, 1967; up to October 15, 1971.
Polling of Ballots: October 24 – 31, 1971.

DEGREES OFFERED

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

Bachelor of Arts (BA)

Bachelor of Engineering Science (BESc)

Bachelor of Laws (LLB)

Bachelor of Music (MusB)

Bachelor of Musical Arts (AMusB)

Bachelor of Science (BSc)

Bachelor of Science in Medical Rehabilitation (Communication Disorders) (BScMR(CD))

Bachelor of Science in Medical Rehabilitation (Occupational Therapy) (BScMR(OT))

Bachelor of Science in Medical Rehabilitation (Physical Therapy) (BScMR(PT))

Bachelor of Science in Nursing (BScN)

Bachelor of Social Welfare (BSW)

Master of Arts (MA)

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)

Master of Science (MSc)

Doctor of Dental Surgery (DDS)

Doctor of Medicine (MD)

Doctor of Philosophy (PhD)

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

ADMISSION REQUIREMENTS

Faculty of Graduate Studies

Students who wish information additional to that appearing below should write to: The Dean, Faculty of Graduate Studies, The University of Western Ontario, London 72, Ontario.

Graduate Programs in Business Administration

Information on these programs may be obtained from: The Dean, School of Business Administration, The University of Western Ontario, London 72, Ontario.

Admission to Undergraduate Programs and to the Faculties of Dentistry, Law and Medicine

For application forms or for information write to: The Director of Admissions, Stevenson Hall, The University of Western Ontario, London 72, Ontario.

Students applying for First Year undergraduate studies at The University of Western Ontario are required to hold standing, in subjects appropriate to the program to which admission is sought, in studies at the level of Ontario Grade 13 (or its equivalent). Applicants from outside Ontario may apply for admission to First Year at this University if their academic records meet, in subject matter and standing, the requirements for admission to a recognized university in their home province or country. Specific admission requirements are outlined in the *General Information* Booklet and the "Information for Prospective Students from Outside Canada" brochure.

All applicants to the First Year of all programs are required to present the results of an appropriate admission test series. The required tests, together with the agency to which a student should write for information, are:

All First Years of Undergraduate Programs

Tests Required: Scholastic Aptitude Test (verbal and mathematical) AND three Achievement Tests where available

Agencies: S.A.C.U. (Service for Admission to College and University OR C.E.E.B. (College Entrance Examination Board)

First Year Dentistry

Test Required: Dental Aptitude Test (D.A.T.)

Agency: Canadian Dental Association

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; The Psychological Corporation

First Year Law

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

Agency: Educational Testing Service

First Year Medicine

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

Agency: The Psychological Corporation

First Year MBA

Test Required: Admission Test for Graduate Studies in Business

Agency: Educational Testing Service

Enrollment in undergraduate programs is restricted by limitations on the size of the Freshman class.

The recommendations of Secondary School principals or guidance officers, scores in aptitude and achievement tests, and formal academic records are each considered carefully in the final selection of applicants. Possession of the academic qualifications stated in this publication or elsewhere guarantees the applicant consideration for admission only.

Students Applying from Other Universities or Colleges

A student applying to transfer to The University of Western Ontario must be eligible, without condition, to register as a full-time intramural student at the previous college or university attended.

Each application for admission to this University with advance standing will be considered by the Admissions Committee of the Faculty to which application is made. Advance standing is not normally granted for:

(a) A course in which the final grade is not at least one grade above the lowest passing grade;

(b) A course passed as part of a failed year;

(c) A course passed as part of a year's program in which the overall average is not at least one grade above the lowest passing grade;

(d) A course within a program which has already been completed by the conferring of a Bachelor's degree.

NOTE: *All applicants for admission at all levels of placement whose primary language is not English are required to present proof of competence in English. The results of two tests are accepted as proving such competence: The Test of English as a Foreign Language OR The English Language Proficiency Test (University of Michigan).*

Final Application Dates — 1971

February 1	Faculty of Medicine
March 1	Faculty of Dentistry
March 31	Program in Occupational Therapy
April 5	Evening Summer School
April 30	Program in Physical Therapy
May 31	Program in Communication Disorders
June 1	Day Summer School
	Faculty of Law
July 1	Winter Session Intramural, full time and part time
September 10	Winter Extension and Correspondence

ACADEMIC RIGHTS OF STUDENTS

The Senate has established procedures for petitions and appeals.

Petition

A petition is an instrument whereby a student may seek to have a regulation of the University waived on academic or compassionate grounds.

Procedure: The student may initiate a petition in the Office of the Dean of his Faculty on a form provided for the purpose. He will be notified later of the Dean's decision.

Reconsideration by Senate: A student shall have the right to require the Senate to consider the decision of the Dean by making application to the Secretary of the Senate on a form provided for the purpose.

Appeal

An appeal is an instrument by which a student may be protected against an error in grading or final standing, unfair prejudice of a professor, or serious negligence in instruction.

Procedure: A student is required to make a formal complaint to the Chairman of the Department concerned. If the problem cannot be solved in this way, a written appeal setting forth the grounds of the complaint may be instituted to the Dean of the academic unit concerned. The Dean may appoint or request an appropriate committee composed of faculty and students to advise him.

Reconsideration by Senate: A student shall have the right to require the Senate to consider the decision of the Dean by making application to the Secretary of the Senate on a form provided for the purpose.

REQUIREMENTS FOR STANDING (Undergraduate)

(a) ALL stated prerequisite requirements shall be satisfied.

(b) Any two half-courses are equivalent to one full course and may be from different subjects.

Class and Laboratory Attendance

Freshmen and sophomore students are required to attend 80 per cent of their lecture and laboratory classes. Any student who, in the opinion of his instructor, is absenting himself too frequently from class or laboratory periods will be reported to the Dean of his Faculty. On recommendation of the Department concerned, and after due warning has been given him by the Dean, the student may be debarred from taking the regular examinations in that course.

Term Work

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

Extra Courses

Permission to take an extra full or half-course must be obtained in writing from the Dean of the Faculty in which the student is registered.

Adding and Dropping Courses

Following registration, a student may add a course only with the joint approval of the Dean of the Faculty and the Chairman of the Department concerned. A full or half-course cannot be added after October 15, 1971.

A student may drop a course only with the joint approval of the Dean of the Faculty or his designate, and the Chairman of the Department concerned. A full course dropped after January 15, 1972, will be considered a

failure. A first term half course dropped after November 1, 1971, will be considered a failure. A second term half course dropped after February 21, 1972, will be considered a failure.

Substituting Courses

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. All substitutions must conform to the basic requirements as laid down by the Senate.

Unsatisfactory Knowledge of English

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

THE FIFTEEN-COURSE PROGRAMS FOR BA AND BSc DEGREES

For details on the requirements for the Bachelor of Arts and Bachelor of Science degrees, see pages 14 to 17 inclusive.

THREE-YEAR GENERAL PROGRAMS WITH OPTIONS

No student will be admitted to the degree of Bachelor of Arts in the General Program with Home Economics, Secretarial Science or Music Options who has not obtained a minimum of 50 percent on all the prescribed and elective work of his program, and a minimum of 60 percent in half the courses of his senior year.

HONORS PROGRAMS

Students in the Arts, Music, Science and Social Science Programs 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 four-year Honors Programs based upon the courses selected and the standing obtained in the First Year.

Three types of Honors Programs are offered:

(1) Four-year Honors Programs in the Arts and Social Sciences, leading to the Bachelor of Arts (BA) degree;

(2) Four-year Honors Programs in Natural Sciences and Medical Biological Sciences, leading to the Bachelor of Science (BSc) degree;

(3) Four-year Honors Programs in Music leading to the Bachelor of Music (MusB) degree or Bachelor of Arts (BA) degree.

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

A student expecting to enter an Honors Program should consult that program before selecting his options in his first year.

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

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.

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 percent, a grade average of at least 60 percent in the principal courses of the Fourth Year, and a passing grade in every course.

A student who has a graduating average of at least 60 percent and a passing grade in every course, 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.

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.

FIFTEEN-COURSE PROGRAM FOR THE DEGREE OF BACHELOR OF ARTS

NOTE: Any two half courses are equivalent to one full course and may be from *different subjects.*

YEAR I

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

YEAR II AND III

Ten courses, including at least seven seniors (numbered 30 or above).

An area of concentration of four senior courses specified by the Department concerned as meeting its requirements *may* be elected and declared by the student at the beginning of Year II. The area of concentration, if any, will be designated on official transcripts of academic record issued after graduation.

Of the fifteen courses of Years I, II, III, no more than eight may be chosen from any one subject.

GRADUATION: An average of 60% or higher is required on the fifteen courses. Requirements for graduation must be completed within the first twenty courses (or equivalent) attempted, including repeated courses.

The normal full-time Winter Session load of five courses (or equivalent) may be reduced to four courses or increased to six courses with the consent of the Dean of the Faculty in which the student is registered.

Residence Requirements:

- two academic years or one year and two summer sessions or five summers; reduced to a MINIMUM OF ONE WINTER OR THREE SUMMERS by attending extension classes of The University of Western Ontario or by transfer of credit from an approved College or University.
- Five or more SENIOR courses must be completed at The University of Western Ontario.

Requirements for Continued Registration

Following admission to the University and initial registration, continued registration is subject to the following limitations:

(a) a Grade Point Total of at least *six* in the first *five* full (or equivalent) courses attempted must be accumulated;
(b) a Grade Point Total of at least *14* in the first *ten* full (or equivalent) courses attempted must be accumulated;
(c) not more than *five* failures *in either full or half courses* (i.e., Grades of E, F, DNW, DRP, FTW, INC)* may be accumulated;
(d) a minimum average of 60 percent must be achieved in the *15* full (or equivalent) courses completed within the first *20* attempts (or equivalent) which includes repeated courses.

An ATTEMPT is a full course registration not formally cancelled with the Registrar by January 15th in the Winter Session, Extension and Correspondence; and by July 15th in the Summer Session. An attempt in a first term half course will be considered a registration if not formally cancelled with the Registrar by November 1st, and in a second term half course if not formally cancelled by February 21st.

When a student's achievement is such that any one of the above minimum requirements is not met, the student must withdraw from the University for one year or longer at the discretion of the Senate Admissions Committee.

Full Course Grade Points	Half Course Grade Points	Letter Grade	% Range
5	2.5	A+	90–100
4	2.0	A	80– 89
3	1.5	B	70– 79
2	1.0	C	60– 69
1	0.5	D	50– 59
0	0.0	F	0– 49

Prerequisites for Progression

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 recommendation of the Department concerned and with the approval of the student's Dean.

All other students are governed by regulations pertaining to progression in Honors Programs or by regulations of their Faculty.

Student records prior to 1970-71 will be assessed by the Grade Point system in conjunction with the work of the 1970-71 and later sessions. Failed years of 1969-70 and earlier will not be used in the compilation of courses passed, grade points earned and attempts accumulated.

*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.

FIFTEEN-COURSE PROGRAM FOR THE DEGREE OF BACHELOR OF SCIENCE

NOTE: Any two half courses are equivalent to one full course and may be from different subjects.

YEAR I

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

YEARS II AND III

Ten courses, including at least eight seniors (numbered 30 or above).

Before entering Year II, an approved subject or area of concentration *must* be elected. At least four senior courses as specified by the Department concerned will be required in the concentration.

Of the fifteen courses of Years I, II, III, ten or more must be from the Faculty of Science. A minimum of two courses must be from outside the Faculty of Science. Senior courses from the Faculty of Science must be chosen in consultation with the Department of concentration or the Advisor for the area.

GRADUATION: An average of 60% or higher is required on the fifteen courses, with at least 60% in the four courses of the concentration. Requirements for graduation must be completed within the first twenty courses (or equivalent) attempted, including repeated courses.

The normal full-time Winter Session load of five courses (or equivalent) may be reduced to four courses or increased to six courses with the consent of the Dean of the Faculty in which the student is registered.

Residence Requirements:

- two academic years or one year and two summer sessions or five summers; reduced to a MINIMUM OF ONE WINTER OR THREE SUMMERS by attending extension classes of The University of Western Ontario or by transfer of credit from an approved College or University.
- Five or more SENIOR courses must be completed at The University of Western Ontario.

Requirements for Continued Registration

Following admission to the University and initial registration, continued registration is subject to the following limitations:

(a) a Grade Point Total of at least *six* in the first *five* full (or equivalent) courses attempted must be accumulated;
(b) a Grade Point Total of at least *14* in the first *ten* full (or equivalent) courses attempted must be accumulated;
(c) not more than *five* failures *in either full or half courses* (i.e., Grades of E, F, DNW, DRP, FTW, INC)* may be accumulated;
(d) a minimum average of 60 per cent must be achieved in the *15* full (or equivalent) courses completed within the first *20* attempts (or equivalent) which includes repeated courses.

An ATTEMPT is a full course registration not formally cancelled with the Registrar by January 15th in the Winter Session, Extension and Correspondence; and by July 15th in the Summer Session. An attempt in a first term half course will be considered a registration if not formally cancelled with the Registrar by November 1st, and in a second term half-course if not formally cancelled by February 21st.

When a student's achievement is such that any one of the above minimum requirements is not met, the student must withdraw from the University for one year or longer at the discretion of the Senate Admissions Committee.

Full Course Grade Points	Half-course Grade Points	Letter Grade	% Range
5	2.5	A+	90–100
4	2.0	A	80– 89
3	1.5	B	70– 79
2	1.0	C	60– 69
1	0.5	D	50– 59
0	0.0	F	0– 49

Prerequisites for Progression

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 recommendation of the Department concerned and with the approval of the student's Dean.

All other students are governed by regulations pertaining to progression in Honors Programs or by regulations of their Faculty.

Student records prior to 1970-71 will be assessed by the Grade Point system in conjunction with the work of the 1970-71 and later sessions. Failed years of 1969-70 and earlier will not be used in the compilation of courses passed, grade points earned and attempts accumulated.

*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.

EXAMINATIONS

Regular Examinations

Examinations for students registered in intramural, extension and correspondence courses are conducted in April and May, and for those in the Summer School in August.

Comprehensive Examinations

Students should observe that the purpose of their university work is not simply the creditable passing of courses term after term, but the gradual acquisition of a broad and deep knowledge of the chosen subjects and an intelligent appreciation of their bearing upon general knowledge and culture. Some Departments have comprehensive examinations for Honors students. These examinations, which may be written, or oral, or both, are given at the end of the senior year to cover the broad aspects of the student's Honors Program. They are additional to the course examinations.

Deferred Examinations

Permission to defer an examination is given by the Deans only on compassionate grounds. A student must petition his Dean for this privilege. A deferred examination is normally written during the supplemental examination period. No supplementals will be allowed for a student who is permitted to defer examinations. No fee is charged for deferred examinations.

A deferred examination may be written only at the University or at one of its Affiliated Colleges.

Special Examinations

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

A special examination may be written only at this University or at one of its Affiliated Colleges. The examination fee is $15.

Supplemental Examinations

Supplemental examination privileges are not available in courses offered by the Faculties of Arts, Music, Nursing, Science or Social Science.

All supplemental examinations offered by other Faculties must be written at The University of Western Ontario or at another Canadian university located more than 150 miles from London. The examination fee is $10 if written at the University; $15 if written at an outside center.

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 permission to write a special examination. Petitions will be entertained only when they are submitted on compassionate grounds with supporting documents.

Aegrotat Standing in the Three-Year Programs

Aegrotat Standing (academic standing without examination) may be given to students in the graduating year of the Three-Year Programs. On compassionate grounds, and with supporting documents, a student may petition his Dean for:

(a) the privilege of writing deferred examinations

OR

(b) Aegrotat Standing which would be 50 per cent in non-major courses and 60 per cent in major courses

A student who wishes to register for two courses with the same examination number is required to submit the written approval of his Faculty Dean to the Registrar's Department BEFORE REGISTRATION.

Examination Timetable

Most courses offered have an examination code number, which will be found in the course description following the designation of the number of class hours (e.g., 3 hours – 1).

Final examinations in 1972 will be held according to the following schedule:

First Week		Second Week		Third Week	
Monday	9 a.m. – 25	Monday	9 a.m. – 1	Monday	9 a.m. – 13
April 10	2 p.m. – 26	April 17	2 p.m. – 2	April 24	2 p.m. – 14
Tuesday	9 a.m. – 27	Tuesday	9 a.m. – 3	Tuesday	9 a.m. – 15
April 11	2 p.m. – 28	April 18	2 p.m. – 4	April 25	2 p.m. – 16
Wednesday	9 a.m. – 29	Wednesday	9 a.m. – 5	Wednesday	9 a.m. – 17
April 12	2 p.m. – 30	April 19	2 p.m. – 6	April 26	2 p.m. – 18
Thursday	9 a.m. – 31	Thursday	9 a.m. – 7	Thursday	9 a.m. – 19
April 13	2 p.m. – 32	April 20	2 p.m. – 8	April 27	2 p.m. – 20
Friday	9 a.m. – 33	Friday	9 a.m. – 9	Friday	9 a.m. – 21
April 14	2 p.m. – 34	April 21	2 p.m. – 10	April 28	2 p.m. – 22
Saturday	9 a.m. – 35	Saturday	9 a.m. – 11	Saturday	9 a.m. – 23
April 15	2 p.m. – 36	April 22	2 p.m. – 12	April 29	2 p.m. – 24

COURSE NUMBERING SYSTEM

Courses numbered 1 are equivalent to corresponding subjects of Secondary School Grade 12 (Ontario).

Courses numbered 2 are equivalent to corresponding subjects of Secondary School Grades 12 and 13 (Ontario)

Courses 10 to 19 are equivalent to corresponding subjects of Secondary School Grade 13 (Ontario).

Courses 20 to 29 are First Year General Courses.

Courses 30 to 99 are Second and Third Year General Courses.

Courses 200 to 299 are Second Year Honors Courses.

Courses 300 to 399 are Third Year Honors Courses.

Courses 400 to 499 are Fourth Year Honors Courses.

Courses numbered 500 or higher are offered within the Faculty of Graduate Studies.

A course number followed by "a" is offered in the first term only; followed by "b" in the second term only.

A half course is one which meets fewer than two hours a week throughout the academic year or fewer than four hours a week in one term.

Unless otherwise indicated, lecture and laboratory hours are listed on a weekly basis throughout the academic year.

GENERAL INFORMATION

Summer School and Extensions

In the summer of 1970, 3,300 students attended day and evening classes on the London Campus where over 100 courses were offered. In addition to the Summer School in London, summer classes were held at Owen Sound and Stratford. Two hundred students took the eleven courses on the Owen Sound Campus, and many participated in courses in Fine Art and Music offered at the Stratford Summer Session.

More than 3,000 students registered with the Summer School and Extension Department in 1970-71 for Extension courses offered during evenings and on Saturdays throughout the fall and winter on the London Campus and in nine Western Ontario centers. In addition, many courses, as well as seminars, workshops and conferences, were offered on a non-credit basis in the Continuing Education Program of the Summer School and Extension Department.

Trois-Pistoles Summer School

Since 1933, The University of Western Ontario has conducted a six-week summer school at Trois-Pistoles, 145 miles from Quebec City on the south shore of the St. Lawrence River. The courses offered include French for English-speaking students, landscape painting instruction in both French and English, and art history given in French.

For further information, write to The Director, Trois-Pistoles Summer School, The University of Western Ontario, London 72, Ontario.

Libraries

The general library is housed in the D.B. Weldon Memorial Building. Libraries and reading rooms are also located in the Josephine Spencer Niblett Faculty of Law Building, Alexander Charles Spencer Faculty of Engineering Building, Medical Sciences Building, Kresge Faculty of Nursing Building, Natural Sciences Centre, Richard Ivey School of Business Administration Building, A.E. Silverwood

Faculty of Music Building, Althouse College of Education and the School of Library and Information Science. The affiliated colleges (Huron College, Brescia College and King's College) each provide undergraduate libraries.

The book collections of the University total over 824,000 volumes and 700,000 microforms. Currently the University receives annually 9,570 periodicals in all subjects and in many languages.

Student Placement Service

The Placement and Off-Campus Housing Office (Room 23, Thames Hall) annually conducts a student employment program. Over 200 firms and agencies offering career and summer employment visit campus to interview both undergraduate and graduate students. The program is divided into two phases: Engineering and Science – November through December; Arts, Social Sciences and Law – January through February. Lists of companies and their interview dates are publicized throughout the University and in the student newspaper. Interviews are arranged through the Student Placement Office which operates in accordance with standards established by the University and College Placement Association.

As well as the scheduled program, the Office advertises career opportunities which become available during the year. In addition, there is a year-round employment service provided for students who wish part-time employment. The object of this service is to help students find such employment in the London area with hours compatible with their academic schedule.

Students who would like career information are invited to use the career counselling service. The Placement Office has a complete information library and there is a full-time career counsellor on staff.

Living Accommodation

RESIDENCES FOR WOMEN

The University of Western Ontario has three residences for women, Spencer Hall, Delaware Hall and Maitland Hall. Spencer Hall, 551 Windermere Road, with accommodation for 86, is situated on a 35-acre landscaped property less than two miles from the main campus. Regular bus service is provided to and from the University campus at no charge to residents. Delaware Hall, located on the main campus, accommodates 452 students. The Glenmore Residences complex on campus has accommodation for 600.

At Spencer Hall, two, three or four students occupy a room, while at Delaware Hall and Maitland Hall, there are single and double rooms only. The residences are handsomely appointed with dining facilities, study rooms and lounges. Towels and bedding, including two blankets, are supplied, with no charge for laundering of these items. Coin-operated washers, dryers and ironing facilities are available.

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.

RESIDENCES FOR MEN

Medway Hall and Sydenham Hall are Western's two men's residences and are located near the main campus of the University. Medway Hall accommodates 300 students and Sydenham Hall accommodates 292. In addition, the Glenmore complex has accommodation for 600. Medway Hall and Sydenham Hall are located on University Drive; the Glenmore Residences complex is located on Windermere Road, within five minutes' walking distance of the main campus.

Although the residences differ in design, each has its own kitchen and dining room. Each also contains study rooms, lounges, music rooms, laundries, TV rooms, hi-fi rooms, and single and double bedrooms. All residences are air-conditioned.

Three meals are served daily in the residences during the term. Towels and bedding are supplied, and there is no charge for the laundering of these items.

Application forms for the men's residences mentioned above may be obtained from the Residence Admissions Office, Saugeen Hall, 289 Windermere Road, London 72, Ontario.

NOTE: Students must be registered in the Constituent University to be eligible for accommodation in any of the above women's and men's residences.

MARRIED STUDENTS' APARTMENTS

The student housing complex, Windermere Road, has accommodation for married students, including 300 one-bedroom apartments and 100 two-bedroom apartments. For information and application forms write to The Business Manager, Married Students' Apartments, The University of Western Ontario, London 72, Ontario.

AFFILIATED COLLEGE RESIDENCES

Brescia College, for women, Western Road, has accommodation for 128 students. Only students enrolled in Brescia College are accepted for residence. For information write to: The Dean, Brescia College, Western Road, London 72, Ontario.

Huron College, adjacent to the University campus on Western Road, has accommodation for 200 men and 100 women registered at Huron College. A few students of other colleges are accepted. For information write to: The Warden, Huron College, Western Road, London 72, Ontario.

King's College, near the main campus, has accommodation for 310 students (men and women). For information write to: The Business Office, King's College, 266 Epworth Avenue, London 11, Ontario.

OTHER RESIDENCES

Westminster College

Westminster College is a co-educational residence for students at The University of Western Ontario. It is located on the north side of the campus and has accommodation for 118 men and 118 women. The College

has its own dining room and the usual furnishings and facilities of a university residence. For information write to: The Dean of Residence, Westminster College, London 72, Ontario, or telephone 434-8471 (area code 519).

OFF-CAMPUS HOUSING

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 Room 23, Thames Hall, The University of Western Ontario.

Students registered in an Affiliated College should apply to the Dean of Residence of their College for assistance in finding private accommodation.

Alumni Involvement on Campus

Alumni Hall is one of the most striking contributions Western's graduates have made to the University. Financed by one million dollars in gifts from Western alumni, and matched dollar-for-dollar by the Ontario Government, this multi-purpose building houses one of the finest concert halls in North America.

From its opening in March of 1967, Alumni Hall has become the cultural hub of the campus. The Alumni Great Artists' Concerts series has brought many of the world's most famous orchestras and entertainers to Western.

Much of student life centers around Alumni Hall. This is where the first year students begin their experience at University with the Formal Welcoming; on their final day, at graduation, they receive their degrees on its stage at either the Spring or Fall Convocations.

The hall itself, being multi-purpose, converts from its cultural uses to an excellent basketball court. Other athletic facilities in the building include a general activities room in the basement, as well as a number of handball courts and a rifle range.

Alumni Hall is also the headquarters of the Alumni Association, the organization that unites all Western graduates. The addresses, family and career data of Western's 33,600 graduates are kept on file here on a confidential basis. An informative magazine for the alumni, the *Alumni Gazette,* provides a communications link between the University and its graduates and between the alumni themselves. Homecoming Weekend, organized by the Alumni Association, is one of the highlights of campus social life, combining many social and cultural events and continuing education opportunities for returning alumni.

Decisions on alumni policies and activities are made and put into effect through a working body of alumni known as the Alumni Executive Council. Alumni members of this Council are elected and represent the various schools and faculties of the University. The Alumni Executive Council has working relations with all members of the University community, including students, faculty and administration, through the Department of Alumni Affairs and Information Services.

Western alumni have won recognition and representation on the University's two main decision-making bodies, namely the Board of Governors and the Senate. The Alumni Association alternately elects or appoints two voting members to the Board, while at least four of the six general community representatives on the academic Senate are alumni; one of these is always the Alumni Association President.

In general, the Alumni Association is ready to assist the activities of Western students individually and through their clubs and organizations, as well as their Students' Council. The Alumni Executive Council meets monthly to discuss matters of importance to the University, and is always willing to hear proposals from the students and help them achieve goals to the benefit of the University community.

Initiation

"Hazing" and/or "initiation" of University students is prohibited by virtue of a 1934 resolution of the Board of Governors.

Students may not engage in any public activity as a group or body representing the University or any organization within the University without the express permission of the Board of Governors; nor may the name of the University be used in the title of any publication without the permission of the Board.

Traffic and Parking

Information on traffic and parking on campus may be found in the University publication "Vehicle Parking and Traffic Regulations".

Health Services

PHYSICAL EXAMINATION

An Admission Medical Record completed 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 session. The submission of the Record on the form provided is the responsibility of the incoming student prior to registration.

Health Services on Campus

The Health Service clinic is in Somerville House 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.

Hospital Services Insurance

Hospital insurance is NOT provided by the University. Hospital insurance offered by the Ontario Hospital Services Commission is the only form of basic hospital insurance permitted in Ontario. It is the student's responsibility to obtain the necessary coverage under the Ontario Hospital Insurance Plan. Coverage does not become effective for three months from time of application for Ontario Hospital Insurance. The premium is $16.50 for three months for a single person and $33.00 for three months for a family, payable in advance.

Students from other provinces who already have hospital insurance are urged to ascertain, before coming to Ontario, if their policies will be honored in Ontario hospitals and for how long.

Students from outside Canada should apply for Ontario Hospital 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 will incur charges of approximately $65.00 per day.

Medical Services Insurance

The only medical services insurance allowed in Ontario at the present time is the Ontario Health Services Insurance Plan (OHSIP) administered by the provincial government. This plan is comprehensive and may be purchased through OHSIP directly or through one of its agents. Coverage does not become effective for three months from time of application. The premium is $17.70 for three months for a single person, $35.40 for three months for a couple, and $44.25 for three months for a family, payable in advance. Persons who have been resident in the Province for twelve months may receive assistance in paying premiums in accordance with regulations relating to personal income. More detailed information may be obtained from Health Insurance Registration Board, 2195 Yonge Street, Toronto 7, Ontario, telephone 482-1111 (area code 416).

Scholarships

A complete listing of all scholarships, bursaries and financial aid programs may be found in the *General Information Booklet* and in the individual Faculty sections of this Calendar.

Scholarships awarded by The University of Western Ontario shall be tenable only at the University or its Affiliated Colleges (Brescia College, Huron College, King's College), unless the provisions of a particular scholarship state otherwise.

Undergraduate Fees

FEES

Full-time Students (all years)

Faculty of Arts	$542.50
Faculty of Science	542.50
Faculty of Social Science	542.50
Faculty of Business Administration	542.50
Faculty of Engineering Science	542.50*
Faculty of Dentistry	†727.50
Faculty of Medicine	727.50
Medical Rehabilitation	517.50
Faculty of Nursing	517.50
Faculty of Music	552.50
Faculty of Law	552.50

*Second, third and fourth years $602.50

†Additional instruments fee is not included in this amount. For details, see the Faculty of Dentistry Section of this Calendar.

NOTE: The above fees include a $54.00 non-academic charge 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.

A $50.00 non-refundable tuition deposit is required of all full-time intramural freshman students and of first year students in the Faculties of Dentistry, Law and Medicine.

Part-time Intramural Students (three courses or fewer)

Tuition, each course	$105.00
Audit (non-credit), each course	50.00
Laboratory fee (where applicable), credit or audit	10.00

PAYMENT OF FEES

Fees for full-time undergraduates are due and payable at the time of registration. A student may pay a minimum of $300.00 ($400.00 for students in the Faculty of Medicine or the Faculty of Dentistry; $325.00 for an upperclassman in the Faculty of Engineering Science) 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. If a $50.00 tuition deposit has been paid prior to registration, this amount will be applied against the first term's tuition installment.

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

Application from outside Canada		$ 25.00
Late registration fee		$10.00 or 25.00
Transfer from Constituent University to Affiliated College		50.00
Withdrawal during registration week	(minimum penalty)	50.00
Supplemental examination		10.00
Supplemental examination at outside centre		15.00
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 their Faculty 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.

WITHDRAWAL

A student who wishes to withdraw from the University should consult the Dean of his Faculty or School. After consultation, withdrawal forms must be completed for the Office of the Registrar. 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 adjustments will be made on a pro rata basis. Refunds will be authorized if cancellation of registration is approved prior to March 15th for full-time students in the Winter Session.

Faculty of Arts

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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*

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, Latin, Philosophy, Russian, Spanish.

Four year Honors Programs leading to a BA degree: Classics, English and Drama, English and French, English and German, English and History, English Language and Literature, English and Latin, English and Philosophy, English and Russian, English and Spanish, Fine Art, French and German, French Language and Literature,French and Latin, French and Spanish, German Language and Literature, German and History, German and Russian, German and Spanish, Latin, Latin and Greek, Latin and Spanish, Philosophy, Philosophy and German, Philosophy and History, Philosophy and Mathematics, Philosophy and Psychology, Honors Philosophy with minor, Russian Studies, Russian and History, Russian and Spanish, Spanish Language and Literature, Fine Art and German.

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.

Availability of Options: The student's choice of options within any academic program is subject to the constraints both of the lecture and the final examination timetables.

CLASSICAL STUDIES

Chairman

Douglas E. Gerber, BA, MA, PhD *Toronto*

Honors Programs

CLASSICS

Requirements for Admission. First Year Program (Arts, Science or Social Science) with Greek 20, Latin 20 and one other course as principal courses, English and another modern language as recommended options.

SECOND YEAR

Principal Courses

Greek 230, 251
Latin 230, 251, 257

Subsidiary Course

One option

THIRD YEAR

Principal Courses

Greek 340, 351, 352
Latin 340, 351, 352
Greek 357 or Latin 457 (whichever is currently offered)

FOURTH YEAR

Principal Courses

Greek 450, 451, 452, 495*
Latin 450, 451, 452, 495*
Latin 457 or Greek 357 (the one not taken in the Third Year)

LATIN AND GREEK

Requirements for Admission. First Year Program (Arts, Science or Social Science) with Latin 20, Greek 2 or 10 and one other course as principal courses, English and another modern language as recommended options. The requirements for Greek 20 must be completed by the beginning of the second year. For grades required for admission and progression see page 31.

SECOND YEAR

Principal Courses

Greek 20
Latin 230, 251, 257

Subsidiary Courses

Two options

THIRD YEAR

Principal Courses

Greek 230, 251
Latin 340, 351, 352
Greek 357 or Latin 457 (whichever is currently offered)

*Comprehensive Examination in the Spring.

Subsidiary Course

One option

FOURTH YEAR

Principal Courses

Greek 340, 351, 352, 495*
Latin 450, 451, 452, 495*
Latin 457 or Greek 357 (the one not taken in Third Year)

LATIN

Requirements for Admission. First Year Program (Arts, Science or Social Science) with Latin 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 Greek 20 must be completed by the beginning of the Third Year. For grades required for admission and progression see page 31.

SECOND YEAR

Principal Courses

Greek 2 or 10
Latin 230, 251, 257

Subsidiary Courses

Two options

THIRD YEAR

Principal Courses

Greek 20
Latin 340, 351, 352
Greek 357 or Latin 457 (whichever is currently offered)

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Greek 230, 251
Latin 450, 451, 452, 495*
Latin 457 or Greek 357 (the one not taken in Third Year)

Subsidiary Course

One option

*Comprehensive Examination in the Spring

ENGLISH AND LATIN (see page 37)

FRENCH AND LATIN (see page 43)

LATIN AND SPANISH

Requirements for Admission. First Year Program (Arts, Science or Social Science) with Latin 20 and Spanish 20 or 21 (or 2 or 10) and one other as principal courses. Those who take Spanish 2 or 10 in the First Year are urged to take Spanish 20 or 21 in Summer School. If this is impossible they should consult with the Chairman of the Department concerning an alternative arrangement. For grades required for admission and *progression see page* 31.

After the first year, the program consists of a total of at least fifteen courses: a minimum of seven honors Latin courses, seven honors Spanish courses, and one option, to be taken normally in the Second Year.

The Latin courses must be taken as follows:

Second Year: Latin 230, 251, 257
Third Year: Latin 340 and one of: 351, 352
Fourth Year: Latin 495* and two of: 450, 451, 452

The Spanish courses must be taken as follows: two language courses, 231 and 341, are compulsory. Five others may be selected to suit individual interests, with representation from each of the following categories:

Modern Spanish Literature: 240, 260
Spanish American Literature: 248, 348
Classical Spanish Literature: 365, 460, 465

Note: Spanish 461. An advanced course in language and stylistics, may be taken by a student interested in further language study, provided at least one course is selected from each of the categories above.

General Courses

CLASSICS

(ability to read Greek and Latin not required)
The requirements for a concentration in Classical Studies in the Three-year program consist of Classics 27 (or permission of the Department) and any four senior Classics 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 — 8

30. Classical Rhetoric and Literary Criticism. A study of the formation of prose style; the influence of rhetoric on poetry and higher education; and the development of literary criticism.
2 hours — 1

*Comprehensive Examination in the Spring

33. Classics and the Contemporary Scene. A study of those elements of 20th century thought in the fields of natural science, social science, and arts which owe their ultimate existence to the ancient Greek and Roman civilizations.
2 hours – 33

37. Classical Mythology. A study of Greek and Roman mythology, with some reference to its influence in modern European literature.
2 hours – 18

40. Greek History. A survey of the history of Greece from the Minoan and Mycenaean period to Rome's ascendancy.
2 hours – 3

41. Roman History. A survey of the history of Rome from its beginnings to the fall of the Western Empire.
2 hours – 34

47. Classical Civilization. Greece and Rome, with emphasis on cultural and social life rather than political history.
2 hours – 21

GREEK

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 – 28

10. Intermediate Greek. Selections from Freeman and Lowe, Greek Reader; Plato, "Crito"; composition, sight translation.
Prerequisite: Grade 12 Greek or Greek 2
3 hours – 28

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 – 5

30. The Attic Orators. Selections from Lysias and Demosthenes; composition, sight translation. (Offered by arrangement with the Department)
Prerequisite: Greek 20
3 hours – 12

40. Greek Tragedy. One play each of Aeschylus, Sophocles, Euripides; composition, sight translation. (Offered by arrangement with the Department)
Prerequisite: Greek 30
3 hours – 12

LATIN

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 – 26

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 – 26

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 – 26

30. Selections from Catullus and Horace. (Not offered 1971-72).
Prerequisite: Latin 20
2 hours – 25

34. Cicero, "Pro Caelio"; composition, sight translation. (Not offered 1971-72).
Prerequisite: Latin 20
2 hours – 4

40. Selections from: Vergil, "Aeneid" I-VI; Horace, "Satires"; and Juvenal, "Satires". (Not offered 1971-72).
Prerequisite: Latin 30
2 hours – 14

44. Selections from: Livy, "History of Rome"; composition, sight translation. (Not offered 1971-72).
Prerequisite: Latin 34
2 hours – 34

Honors Courses

GREEK

230. The Greek Epic. Selections from Homer and Hesiod.
Prerequisite: Greek 20
2 hours – 12

251. The Attic Orators. Selections from Lysias and Demosthenes; composition, sight translation.
Prerequisite: Greek 20
3 hours – 21

257. Ancient Civilizations. The Near East, Greece and Rome. Identical with Latin 257.
3 hours – 24

340. Greek Tragedy. One play each of Aeschylus, Sophocles, Euripides; lectures on the theatre and the drama.
(Not offered 1971-72)
Prerequisite: Greek 230 or 251
2 hours – 12

351. (i) Introduction to the Greek Historians: Herodotus.
(ii) Greek Comedy: A play of Aristophanes.
(iii) Composition and sight translation.
(Not offered 1971-72)
Prerequisite: Greek 251
3 hours — 18

352. Introduction to Greek Philosophy. Plato, "Republic ".
(Not offered 1971-72)
Prerequisite: Greek 230 or 251
2 hours — 34

357. Study of a selected period in Greek History. Prescribed for students in Honors Classics, Latin and Greek, or Latin; optional with the consent of the instructor for other qualified students. Will be offered in 1971-72 and alternate years thereafter.
2 hours first term, half course

450. Greek Lyric Poetry. Selections from the early elegiac, iambic, and lyric poets
(Not offered 1971-72)
Prerequisites: Greek 340, 351 or 352
2 hours — 24

451. (i) The Greek Historians. Thucydides
(ii) Composition and sight translation.
(Not offered 1971-72)
Prerequisite: Greek 351
2 hours — 25

452. Greek Philosophy. The Pre-Socratics and Aristotle.
(Not offered 1971-72)
Prerequisite: Greek 352
2 hours — 35

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

LATIN

230. Selections from Catullus and Horace.
Prerequisite: Latin 20
2 hours — 25

251. Roman Oratory. Cicero, "Pro Caelio"; composition and sight translation.
Prerequisite: Latin 20
3 hours — 34

257. Ancient Civilizations. The Near East, Greece, and Rome. Identical with Greek 257.
3 hours — 24

340. Roman Epic. Vergil ("Eclogues"; selected books of the "Georgics" and "Aeneid"); Lucan (one book of the "Bellum Civile").
(Not offered 1971-72)
Prerequisite: Latin 230 or 251
2 hours — 13

351. Roman philosophical prose. Cicero, "De Amicitia"; selections from Seneca, "Epistulae Morales"; composition, sight translation.
Prerequisite: Latin 251
2 hours — 25

352. Roman Drama. One play each of Plautus, Terence, Seneca
Prerequisite: Latin 230 or 251
2 hours — 3

450. Roman Historians. With special reference to Livy and Tacitus.
Prerequisite: Latin 340, 351, or 352
2 hours — 19

451. (i) Propertius, Tibullus, Ovid (ii) Composition and sight translation.
Prerequisite: Latin 351
2 hours — 29

452. Lucretius, "De Rerum Nature" (Books I and V); Roman Satire (Selected works of Horace, Persius, Juvenal, and Seneca).
Prerequisites: Latin 340, 351 or 352
2 hours — 5

457. Study of a selected period in Roman History. Prescribed for students in Honors Classics, Latin and Greek, or Latin; optional with the consent of the instructor for other qualified students. Will be offered in 1970-71 and alternate years.
2 hours first term, half course

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

ENGLISH

Chairman

Paul Duncan Fleck, BA, MA, PhD *Belfast*

Associate Chairman

Donald S. Hair, BA, MA, PhD *Toronto*

ENGLISH AND DRAMA

Requirements for Admission. First Year Program with English 20, or English 24, or English 26, and French 20 or a foreign language 20, and one other course as principal courses. For grades required for admission and progression, see page 31. 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: 263 or 373; 280 or 380; 480 or 481
at least one of: 270, 360, 459
at least one of: 338, 438, 458
at least two of: 256, 291, 296
at least two of: 396, 406, 436
One other honors English course in Drama not previously chosen
any three honors English courses not previously chosen
Additional honors or general English courses may be chosen as options.

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal five-course load.

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.

ENGLISH AND FRENCH

Requirements for Admission. First Year Program with English 20, or English 24, or English 26 and French 20 and one other course as principal courses. For grades required for admission and progression, see page 31. 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, seven honors French courses, and two options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
any honors English course not previously chosen.

The French courses must be taken as follows:

Second Year: French 271, 290;
Third Year: French 381 and one or two of 378, 396, 398;
Fourth Year: French 491, 495* and one or two of 400, 410, 450 or any of 378, 396, 398 if not previously elected.

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 French courses may be chosen as options. Options are to be chosen in consultation with the Department concerned.
English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

ENGLISH AND GERMAN

Requirements for Admission. First Year Program with English 20, or English 24, or English 26 and German 20 or 22 and one other course as principal courses. For grades required for admission and progression, see page 31. 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, seven honors German courses, and two options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
any honors English course not previously chosen.

The German courses must be taken as follows:

Second Year: German 290 and 291 (or, as recommended by the Department, either 391 or 481);
Third and Fourth Years: German 333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

Note: There is to be a total of seven German Honors courses in the three senior years. Students

*Comprehensive Examination

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.

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 German courses may be chosen as options. Options are to be chosen in consultation with the Department concerned.

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

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 31. 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 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
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 constituted 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.

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

ENGLISH LANGUAGE AND LITERATURE

Requirements for Admission. First Year Program with English 20, or English 24, or English 26, and French 20 or a foreign language 20, and one other course as the principal courses. For grades required for admission and progression, see page 31. 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: 263, 373
at least one of: 280. 380
at least one of: 480, 481
at least one of: 270, 360
at least two of: 338, 438, 458, 459
at least one of: 256, 291, 296, 396, 436
any two honors English courses not already chosen.
Additional honors or general English courses may be chosen as options.

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal five-course load.

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 LATIN

Requirements for Admission. First Year Program with English 20, or English 24, or English 26, and Latin 20 and one other course as principal courses. For grades required for admission and progression see page 31. 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, seven honors Latin courses, and two options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
any honors English course not previously chosen.

The Latin courses must be taken as follows:
Second Year: Latin 230, 251, 257;
Third Year: Latin 340, and one of 351, 352
Fourth Year: Latin 495* and two of 450, 451, 452

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 Classics courses may be chosen as options. Options are to be chosen in consultation with the Department concerned.

English 299 (a six-week course in Bibliography) is required in Second Year in Addition to the normal course load.

ENGLISH AND PHILOSOPHY

Requirements for Admission. First Year Program with English 20, or English 24, or English 26, and French 20 or German 20 or Latin 20 and one other course as principal courses. For grades required for admission and progression, see page 31. 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 Philosophy 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 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396,436;
any honors English course not previously chosen.

The Philosophy courses must be taken as follows:

Second Year; Philosophy 254, 256 or 257;
Third Year: Philosophy 256 or 257; one 300 level course
Fourth Year: Two of: Philosophy 351 and the 400 level Philosophy courses.

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 may be chosen as options. Options are to be chosen in consultation with the Department concerned.

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

A student who wishes to qualify for a Type A certificate in English must choose additional Honors or General English courses as options after consultation with the Registrar of Althouse College of Education.

ENGLISH AND RUSSIAN

Requirements for Admission. First Year Program with English 20, English 24, or English 26 and Russian 2, 10, or 20 and one other course as principal courses. For grades required for admission and progression, see page 31. 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 Russian courses, and three options (two options only if Russian 20 is taken in the Second Year). The honors English courses may be taken in any sequence, but must be distrubuted as follows:

at least two of English 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
any honors English course not previously chosen.

The Russian courses will be distributed as follows:

Second Year: Russian 291, 20 (Unless taken in the First Year);
Third Year: Russian 391;
Fourth Year: Russian 491;

*Comprehensive Examination

And five additional Russian Honors courses including Russian 390 and 420 taken in any sequence during the three years of the Honors Program. In every one of the three years of the Program the student must take at least two Russian courses.

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

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

ENGLISH AND SPANISH

Requirements for Admission. First Year Program with English 20, or English 24, or English 26, and Spanish 20 and one other course as principal courses. For grades required for admission or progression, see page 31. 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, seven honors Spanish courses, and two options. The honors English courses may be taken in any sequence, but must be distributed as follows:

at least two of English 263 or 373; 280 or 380; 480 or 481;
at least one of English 270, 360, 459;
at least one of English 338, 438, 458;
at least one of English 256, 296, 396, 436;
any honors English course not previously chosen.

The Spanish courses must be taken as follows: Two language courses, Spanish 231 and 341, are compulsory. Five others may be selected to suit individual interests, with representation from each of the following categories:
Modern Spanish Literature: 240, 260
Spanish American Literature: 248, 348
Classical Spanish Literature: 365, 460, 465

Note: Spanish 461, an advanced course in language and stylistics, may be taken by a student interested in further language study, provided at least one course is selected from each of the categories above.

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

English 299 (a six-week course in Bibliography) is required in Second Year in addition to the normal course load.

Courses

Detailed description 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 — 11

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 — 16

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 — 16

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.

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 patterns, and the use of Biblical material in later literature.
3 hours — 20

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 — 16

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 – 17

Speech 39. 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 – 30

43. 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 – 35

45. 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 – 10

47. Contemporary Literature. An introduction to the poetry and prose of the contemporary scene.
3 hours – 13

Film 30. Film, 1895-1945. A study of the history of the film from 1895 to 1945, through an examination of the works of the major film-makers and of the aesthetic and technological influences of their works.
3 hours – 28

Film 32. Contemporary Film, 1945 to the Present. 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.
3 hours – 3

Film 40. Problems. Prerequisite: Film 30 or Film 32, or permission of the Department. (Not offered in 1971-72).
3 hours – 14

Note: Film 30, Film 32, and Film 40 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.

256. Shakespeare.
3 hours – 11

263. Old English Language and Literature. With special emphasis on Beowulf.
3 hours – 2

270. Literature of the Romantic Revival (1798-1832).
3 hours – 8

280. Literature of the Sixteenth Century excluding drama.
3 hours – 24

291. Greek and Roman Theatre and Drama.
3 hours – 28

296. Medieval to Jacobean Drama (1300-1642) excluding Shakespeare.
3 hours – 33

299. Bibliography and Methods. An introduction to scholarly practice in research and in the preparation of manuscripts; the use of reference and bibliography collections; the principles of textual criticism.
(1 hour a week for 6 weeks)

338. Literature of the United States to 1885.
3 hours – 6

346. Dramatics. Studies in the principles and theories of directing, acting and design.
2 hours lectures, 2 hours laboratory
(Offered in the Summer Session only)

354. Criticism. A survey of the major critics, and problems in terminology and practical criticism.
3 hours – 22

360. Literature of the Victorian Period (1832-1900).
3 hours – 7

373. Chaucer and His Age.
3 hours – 36

380. Literature of the Seventeenth Century excluding drama.
3 hours – 12

396. The Drama: Restoration to Romantic
3 hours – 26

400. 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 G. D. Parker, Chairman, Committee on Undergraduate Studies, Department of English. This course is for third or fourth year students only.

401. Problems Course. This course is for third or fourth year students only. (Not offered in 1971-72)
3 hours — 4

406. Problems Course: Drama. This course is for third or fourth year students only. (Not offered in 1971-72)
3 hours — 1

436. Modern Drama
3 hours — 23

438. Literature of the United States from 1885.
3 hours — 27

444. The Novel.
3 hours — 33

458. Canadian Literature.
3 hours — 10

459. Modern Literature (1890-1945).
3 hours — 9

480. Literature of the Restoration and Early Eighteenth Century (1660-1727).
3 hours — 31

481. Literature of the Eighteenth Century (1727-1790).
3 hours — 20

FINE ART

Chairman: William Scott Abell Dale, BA, MA *Toronto,* PhD *Harvard,* FRSA

Honors Program

Requirements for Admission: First Year Program (Arts or Social Sciences) 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.

*To meet the requirements of the Department of Education for the High School Assistant's Certificate, Type A, in Art, students are expected to take a roughly equal number of Principal Courses in art history and studio practice and at least one Subsidiary Course should be in Fine Art.

FINE ART AND GERMAN

Requirements for Admission. First Year Program (Arts, Science or Social Science) with German 20 or 22 (or 2 or 10) and Fine Art 20 and one additional course as principal courses. Those who take German 2 or 10 in the First Year will take German 20 or 22 in the Second Year and will elect German 291 as one of their options.

After the First Year, the program consists of a total of at least fifteen courses: a minimum of seven honors German courses, a minimum of seven honors Fine Art courses including at least two from art history and two from studio practice, and one option, which may be an additional German or Fine Art course.

GERMAN PORTION OF COMBINED HONORS PROGRAM

SECOND YEAR

Principal Courses

German 290 and 291 (or, as recommended by the Department, either 391 or 481)

THIRD AND FOURTH YEARS

German 333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

*To meet the requirements of the Department of Education for the High School Assistant's Certificate, Type A, in Art, students are expected to take a roughly equal number of Principal Courses in art history and studio practice and at least one Subsidiary Course should be in Fine Art.

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.

Fine Art courses must be taken as follows:

SECOND YEAR

Principal Courses

Two Fine Art courses from the 200 series

THIRD YEAR

Principal Courses

Two Fine Art courses from the 300 series

FOURTH YEAR

Principal Courses

Two Fine Art courses from the 300 and 400 series
One option from Fine Art 200, 300, or 400 series, which can be taken in any one of the three senior years.

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 and the visual analysis of works of art.
2 lecture hours, 3 studio hours – 21

Note: Registration will be limited to 50 students, selected on the basis of a small portfolio. Priority will be given to students who intend to enter The Honors Program in Fine Art or to concentrate in Fine Art. Fine Art 20 is the prerequisite for all studio courses.

21. Art History Survey. A chronological survey of Western Art, including architecture, painting and sculpture. For students who do not intend to enroll in the Honors Program or to concentrate in Fine Art in the Three-year Program.
3 hours – 21

N.B. Students in the Three-year Program may enroll in senior Honors courses with the permission of the Department, provided that they have already taken Fine Art 20 or Fine Art 21.

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

Honors Courses

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.
4 studio hours

221. Basic Drawing. Drawing from the live model as an exercise in the perception and control of contour, volume and mass.
4 studio hours

222. Basic Ceramics. A studio course in the creative use of clay. (Not offered 1971-72)
4 studio hours

230. Ancient and Mediaeval Art. Architecture, sculpture, painting and minor arts from prehistoric times to the end of the 14th century.
3 hours – 14

232. Renaissance and Modern Art. Architecture, painting and sculpture in Europe and North America from the fifteenth century to the present day.
3 hours – 4

237. Art in North America. Painting, architecture and sculpture in the United States and Canada from the 17th century to the present. (Not offered 1971-72)
3 hours – 1

310. Art Theory. An introduction to art theory and criticism, with particular reference to present-day art. (Not offered 1971-72)
3 hours – 2

320. Contemporary Expression II. A continuation of the three-dimensional aspect of 220, with greater emphasis on originality and quality.
4 studio hours

321. Painting I. A continuation of related aspects of 220 and 221.
4 studio hours

323. Print-Making I. The expressive use of silk-screen, still photography and lithography.
4 studio hours

330. Classical Art and Archaeology. Architecture, sculpture, painting and minor arts of Greece and Rome from the Bronze Age to the reign of Constantine.
3 hours – 10

331. Gothic Art. Architecture, sculpture, painting and minor arts in Northern Europe from the early 12th century to the end of the 14th.
3 hours – 32

332. Italian Renaissance Art. Architecture, painting and sculpture in Italy from Giotto to Titian.
3 hours – 28

333. Baroque Art. Painting, architecture, and sculpture in southern and northern Europe in the 17th century.
3 hours – 22

336. Modern Art. Architecture, painting, sculpture and graphic arts in Europe and North American since 1850.
(Not offered 1971-72)
3 hours – 16

337. The Group of Seven. The rise of the national school of painting in Canada.
3 hours – 19

338. Oriental Art. The art of China, Japan and India. (Not offered 1971-72)
3 hours – 33

410. Museology. Seminar on the history and function of Art Museums with practical exercises in curatorial duties.
3 hours – 2

420. Contemporary Expression III. Advanced 3-dimensional projects.
4 studio hours

421. Painting II. Advanced projects in painting and drawing.
4 studio hours

423. Print-Making II. Etching and experimental techniques, including use of film.
4 studio hours

430a. and b. Selected topics in Ancient Art. Subjects to be announced. Half courses. Fall and Spring terms.
3 hours – 33

431a. and b. Selected topics in Mediaeval Art. *Half courses. Fall and Spring terms.*
3 hours – 13

432a. Selected topics in Renaissance Art. Subject to be announced. Half course, Fall term.
3 hours – 17

433b. Selected topics in Baroque Art. Subject to be announced. Half course. Spring term.
3 hours – 17

436a. and b. Selected topics in Modern Art. Half courses. Fall and Spring terms. (Not offered 1971-72)
3 hours – 26

FRENCH

Chairman

Carl Paul Barbier, BA, MA *Leeds*

FRENCH AND ENGLISH **(see page 35).**

FRENCH AND GERMAN

Requirements for Admission: First Year Program (Arts, Science or Social Science) with French 20 and German 20 or 22 (or 2 or 10) and one other course as principal courses. Those who take German 2 in the First Year will take German 20 or 22 in the Second Year and will elect German 291 as one of their options. For grades required for admission and progression see page 31. After the First Year, the program consists of a total of at least 15 courses: seven honors French courses, seven honors German courses, and one option.

The French Courses must be taken as follows:

SECOND YEAR

French 271, 290

THIRD YEAR

French 381 and one or two of 378, 396, 398

FOURTH YEAR

French 491, 495* and one or two of 400, 410, 450 or any of 378, 396, 398 if not previously elected.

The German Courses must be taken as follows:

SECOND YEAR

German 290 and 291 (or, as recommended by the Department, either 391 or 481).

THIRD AND FOURTH YEARS

German 333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

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.

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* Comprehensive Examination in the Spring.

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 31. 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 381, 396, 378, 398

Subsidiary Course

One Option

FOURTH YEAR

Principal Courses

French 400, 410, 450, 491, 495*

Subsidiary Course

One Option

FRENCH AND LATIN

Requirements for Admission. First Year Program (Arts, Science, or Social Science) with French 20 and Latin 20 and one other course as principal courses. For grades required for admission and progression see page 31. After the first year the program consists of at least 15 courses: seven honors French courses, seven honors Latin courses, one option to be chosen in consultation with a Departmental adviser.

SECOND YEAR

Principal Courses

French 271, 290
Latin 230, 251, 257

THIRD YEAR

Principal Courses

French 381 and one or two of 378, 396, 398
Latin 340 and one of 351, 352

*Comprehensive Examination in the Spring.

FOURTH YEAR

Principal Courses

French 491, 495* and one or two of: 400, 410, 450 or any of 378, 396, 398 if not previously elected.

Latin 495* and two of 450, 451, 452

FRENCH AND RUSSIAN

Requirements for Admission. First Year Program (Arts, Science or Social Science) with French 20 and Russian 20 (or 2 or 10) and one other course as principal courses. Students who begin Russian in the University will take Russian 2 in the First Year and Russian 20 in the Second Year. For grades required for admission and progression see page 31.

After the First Year, the program consists of at least 15 courses: seven honors French courses, six honors Russian courses and two options to be chosen in consultation with a Departmental adviser.

The French Courses must be taken as follows:

SECOND YEAR

French 271, 290

THIRD YEAR

French 381 and one or two of 378, 396, 398

FOURTH YEAR

French 491, 495* and one or two of 400, 410 or any of 378, 396, 398 if not previously elected.

The Russian principal courses will be distributed as follows:

SECOND YEAR

Russian 291, 20 (unless taken in the First Year).

THIRD YEAR

Russian 391

FOURTH YEAR

Russian 491

And five additional Russian Honors courses including Russian 390 and 420 taken in any sequence during the three years of the Honors Program. In every one of the three years of the Program the student must take at least two Russian courses.

*Comprehensive Examination in the Spring.

Subsidiary Courses

2 options, one in the Second Year, the other one in either the Second or Third Year.

FRENCH AND SPANISH

Requirements for Admission. First Year Program (Arts, Science or Social Science) with French 20 and Spanish 20 or 21 (or 2 or 10) and one other course as the principal courses. Those who take Spanish 2 or 10 in First Year are urged to take Spanish 20 or 21 in Summer School in order to be qualified for Second Year Spanish courses. If this is impossible, students should consult with the Chairman of the Spanish Department regarding an alternative. For grades required for admission and progression see page 31.

After the First Year, the program consists of a total of at least 15 courses: a minimum of seven honors French courses, seven honors Spanish courses, and one option to be taken normally in the second year.

The French courses must be taken as follows:

SECOND YEAR

French 271, 290

THIRD YEAR

French 381 and one or two of: 378, 396, 398

FOURTH YEAR

French 491, 495*, and one or two of: 400, 410, 450 or any of 378, 396, 398 if not previously elected.

The Spanish courses must be taken as follows: Two language courses, Spanish 231 and 341, are compulsory. Five others may be selected to suit individual interests, with representation from each of the following categories:
Modern Spanish Literature: 240, 260
Spanish American Literature: 248, 348
Classical Spanish Literature: 365, 460, 465
Note: Spanish 461, an advanced course in language and stylistics, may be taken by a student interested in further language study, provided at least one course is selected from each of the categories above.

COURSES

The requirements for a concentration in French in the Three-year Program consists of: French 271, 290 and at least 2 of the following 232, 378, 381 (strongly recommended), 396, 398.

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

*Comprehensive Examination in the Spring.

2. 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 – 16

10. 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 – 23
(Not offered intramurally in 1971-72)

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. Lectures, tutorials and language laboratory.
Prerequisite: French 2, 10 or Grade 13 French.
4 hours per week – 23

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 – 21

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 – 23

32. French Civilization and Conversation. 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 – 31

36. French Poetry. A study of representative French poems from the Mediaeval period to the present.
Prerequisite: French 20 or by permission of the Department
3 hours per week – 36

38. French-Canadian Literature. A study of typical examples of French-Canadian Literature from its beginnings to the present day.
Prerequisite: French 20 or by permission of the Department
3 hours per week – 9
(Not offered in 1971-72)

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 – 23

42. French-Canadian Civilization and French Conversation. A series of readings drawn from material concerned with French-Canadian civilization, and discussion based on them.
Prerequisite: French 20 or by permission of the Department
3 hours per week – 28

43. Commercial French. Translation of commercial correspondence, reading. (For students in Secretarial Science).
Prerequisite: French 31, 271 or by permission of the Department
3 hours per week – 22

45. Scientific French. Reading of scientific French from textbooks and journals, supplemented by individual reading in the special field of study of each student.
Prerequisite: French 2, 10 or Grade 13 French
1 hour; half course – 27

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 – 32

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 – 17

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 – 14

338. French-Canadian Literature. Survey of the literature of French Canada covering characteristic material from 1845 to the present; intensive study of selected modern novels and poems; representative writings from the "ancien régime" may be included.
Prerequisite: French 270
2 hours – 9
(Offered in 1971-72 and not thereafter)

350. French Literature of the Mediaeval and Renaissance Periods. Reading lectures, discussion, reports.
Prerequisite: French 270
3 hours – 27
(Offered in 1971-72 and not thereafter)

378. Literature of the 17th and 18th Centuries. Selected authors and texts.
Prerequisite: French 290
3 hours – 9

380. French Literature of the Eighteenth Century. Lectures, reading, discussion, reports.
Prerequisite: French 270
2 hours – 24
(Offered in 1971-72 and not thereafter)

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 – 15

396. History and structure of the French Language.
Prerequisite: French 271
2 or 3 hours – 4

398. Literature of the 19th and 20th Centuries and of French Canada. Selected authors and texts, one of which must be in the French Canadian Literature.
Prerequisite: French 290
3 hours – 31

400. Senior Seminars and Essay. Selected topics and critical essay.
Prerequisites: French 378 and 398
3 hours
(Not offered in 1971-72)

410. Supplementary Studies. Free choice of selected authors and texts not already chosen by the student for study in 378, 398, 400 or 450.
Prerequisite: French 396, 378 and 398
3 hours
(Not offered in 1971-72)

450. Literature to 1600. Selected authors and texts.
Prerequisite: French 396
3 hours – 6
(Not offered in 1971-72)

490. The Literature of the Nineteenth Century. Discussion, lectures, reading and reports.
Prerequisite: French 380
3 hours – 24
(Offered in 1971-72 and not thereafter)

491. Language. Composition, translation and oral practice; introduction to comparative stylistics.
Prerequisite: French 381
3 or 4 hours — 12

495. Comprehensive Examination. A written examination, which will test the students' general knowledge of French literature, plus a brief oral examination to test the students' fluency in French.

499. Contemporary French Literature. Study of some typical examples of the novel, drama, and poetry of the twentieth century; reading, discussion, reports.
Prerequisite: French 380
3 hours — 1
(Offered in 1971-72 and not thereafter)

GERMAN

Chairman

R.M. Immerwahr, AB *Swarthmore College;* MA *Northwestern;* PhD *California (Berkeley)*

Admission to Honors Programs in German (Single or Combined). Students may enter such honors programs only if they have completed:
German 20 (or German 22 and have received the approval of the Department)

GERMAN AND ENGLISH (see page 35)

GERMAN AND FRENCH (see page 42)

GERMAN AND FINE ART (see page 40)

GERMAN LANGUAGE AND LITERATURE

Requirements for admission. First Year Program (Arts, Social Science, or Science) with German 20 or 22 and two other courses as principal courses. For grades required for admission and progression see page 31.

SECOND YEAR

Principal Courses

German 290 and 291 (or, as recommended by the Department either 391 or 481)

Subsidiary Courses

Three Options

THIRD AND FOURTH YEARS

Principal Courses

German 333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of nine in the three senior years (see note below)

Subsidiary Courses

Three Options

Note: There is to be a total of nine German Honors courses in the three senior years and a 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 481. Students fully proficient in spoken and written German are required to include as the only language course German 481.

GERMAN AND RUSSIAN

Requirements for admission. First Year Program (Arts, Science or Social Science) with German 20 or 22 (or 2 or 10) and Russian 20 (or 2 or 10) and one other course as principal courses. For grades required for admission and progression see page 31. After the First Year the program consists of a total of at least fifteen courses: a minimum of seven honors German courses, six honors Russian courses (in addition to 20) and two options.

The German courses must be taken as follows:

Second Year:	290 and 291 (or, as recommended by the Department, either 391 or 481).
Third and Fourth Year:	333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

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.

Russian principal courses will be distributed as follows:

Second Year:	Russian 291, 20 (unless taken in First Year)
Third Year:	Russian 391
Fourth Year:	Russian 491

And five additional Russian Honors courses including Russian 390 and 420 taken in any sequence during the three years of the Honors Program. In every one of the three years of the Program the student must take at least two Russian courses.

GERMAN AND SPANISH

Requirements for admission. First Year Program (Arts, Science or Social Science) with German 20 or 22 (or 2 or 10) and Spanish 20 or 21 (or 2 or 10)

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*Comprehensive Examination in Spring

and one other course as principal courses. Those who take German 2 in the First Year will take German 20 or 22 in the Second Year and will elect German 291 as one of their options. Those who take Spanish 2 or 10 in the First Year should take Spanish 20 or 21 in Summer School. If this is impossible they should consult the Chairman of the Department concerning an alternative. For grades required for admission and progression see page 31. After the First Year, the program consists of a total of at least 15 courses: seven honors German courses, seven honors Spanish 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 481).
Third and Fourth Years:	333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

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.

The Spanish courses must be taken as follows: Two language courses, Spanish 231 and 341 are compulsory. Five others may be taken to suit individual interests, with representation from each of the following categories:

Modern Spanish Literature:	240, 260
Spanish American Literature:	248, 348
Classical Spanish Literature:	365, 460, 465

Note: Spanish 461, an advanced course in language and stylistics, may be taken by a student interested in further language study, provided at least one course is taken from each of the categories above.

GERMAN AND HISTORY

Requirements for admission. First Year Program (Arts, Science or Social Science) with History 20 and German 20 or 22 and one other course as principal courses. For grades required for admission and progression see page 31. 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 481).
Third and Fourth Year:	333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

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.

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 (an additional) in the Second Year.

GERMAN AND PHILOSOPHY

Requirements for admission. First Year Program (Arts, Science or Social Science), English 20 or 24 or 26 and German 20 or 22 and one other course as principal courses. For grades required for admission and progression see page 31. After the First Year the program consists of a total of at least fifteen courses, a minimum of seven honors German courses, six honors Philosophy courses, and two options.

The German courses must be taken as follows:

Second Year:	290 and 291 (or, as recommended by the Department, either 391 or 481).
Third and Fourth Year:	333, 390, 391, 420, 430, 444, 480, 481, 482 as required to make a total of seven in the three senior years.

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.

Philosophy courses must be taken as follows:

Second Year:	Philosophy 254, either 256 or 257
Third and Fourth Years:	Philosophy 256 or 257, one 400 level course, two more 300 or 400 level courses.

Subsidiary Courses: 2 options, one in the Second Year, the other one in either the Third or Fourth Year.

Courses

The requirement for a concentration in German in the three-year program consists of 4 senior courses in German. These may be one language course and three literature courses or two language courses and two literature courses. These 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.

1. Introductory German. Study of the sounds and structure of the language. Intensive oral and written practice. Readings in prose and poetry.
3 hours – 36

2. Intensive German for Beginners. A more intensive course than German I. 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 – 36

5. Elementary Scientific German. The elements of German grammar and readings in scientific German.
3 hours – 23

10. 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 permission of the Department.
3 hours – 36

20. German Language and Literature. Survey of German literature, given in German.
Prerequisite: Grade 13 German or German I (with A standing) or 2 or 10 or permission of the Department.
3 hours – 36

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)

30. The German Novelle from Goethe to the Present.
Prerequisite: German 20 or permission of the Department.
3 hours – 5

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 – 23

German 36. Modern German Literature 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, Brecht. Grass. Dürrenmatt).
3 hours – 29

40. German Drama from the Classical Period to the Present.
Prerequisite: German 20 or permission of the Department.
3 hours – 24

42. German Lyric Poetry.
Prerequisite' German 20 or permission of the Department.
3 hours – 15

44. A study of some major German novels of the nineteenth and twentieth centuries.
3 hours – 20

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 – 23

Honors Courses

Students may enter such honors courses only if they have completed German 20 (or German 22 and have received the approval of the Department).

290. German Prose and Poetry of the Nineteenth Century.
Prerequisite: German 20 or 22
3 hours – 35

291. Conversation, Composition, Linguistic problems.
Prerequisite: German 20 or 22
2 hours – 24

333. History of the German Languages. Readings in Middle High German Literature.
2 hours – 4

390. German Drama of the nineteenth Century.
2 hours – 26

391. Conversation, Composition. (Much of the discussion will deal with the contemporary society, political and public affairs of the German-speaking countries.)
Prerequisite: German 291
2 hours – 34

420. German literature of the Twentieth Century.
2 hours – 16

430. German literature of the Sixteenth and Seventeenth Centuries.
2 hours – 34

444. The German Novel from the Seventeenth Century to the Present.
3 hours – 25

480. German Classicism. Goethe and Schiller.
2 hours – 6

482. Lessing and the German Enlightenment.
2 hours – 10

481. Conversation, Composition. (Aspects of the intellectual and cultural history of the German-speaking countries will be the basis of much of the discussion and writing.)
2 hours – 19

German 495. A written examination which will test the student's general knowledge of German literature as well as his critical and evaluative ability.

HEBREW

For course description see Huron College

LINGUISTICS

Linguistics at the University of Western Ontario is a cooperative program within the Faculty of Arts. It is administered by a Linguistics Group drawn from departments of the faculty and is being developed in consultation with interested groups throughout the University. The following courses are offered at the undergraduate level by participating departments:

English 43 Introduction to Linguistics
English 37 History of the English Language
French 396 History and Structure of the French Language
German 333 History of the German Language
Russian 393 History of the Russian Language
Spanish 461 Spanish Language and Civilization

PHILOSOPHY

Chairman

Robert Earl Butts, BA, MA *Syracuse:* PhD *Pennsylvania.* (On leave, 1971-72)

Acting Chairman 1971-72

Robert W. Binkley, BA *Colorado;* PhD *Minnesota*

Acting Assistant Chairman, 1971-72

Ausonio Marras, BA *Colgate;* PhD *Duke*

Three-year Program

There is no special departmental requirement for concentration in Philosophy. Philosophy 20 is recommended in first year, however, and it is also recommended that the student include at least some courses from Philosophy 31, 36, 47 and 48 in the second and third years. Students concentrating in Philosophy should consult with the assistant chairman of the department each year before registration.

Honors Programs

Students in or entering any of the Philosophy honors programs should consult with the assistant chairman of the department each year before registration.

Note: All Philosophy honors programs are being revised. Students are asked to consult the Department for details.

PHILOSOPHY

Requirements for Admission. First Year Program (Arts, Social Science, or Natural Science) with, at minimum, three principal courses which should include Philosophy 20. With departmental approval, a student who has not taken Philosophy 20 may enter this program.

SECOND YEAR

Principal Courses

Philosophy 254, 256, 257

Subsidiary Courses

A senior course from Division A or Division B
Two options, one of which must be a senior course

THIRD YEAR

Principal Courses

Philosophy 357, 362
Two 300 level Philosophy courses (351 must be taken if not elected in second year)

Subsidiary Courses

A senior course (which must be a Division B course, if not previously taken).
One senior option

FOURTH YEAR

Principal Courses

Two of: Philosophy 456, 458, 466, 467, 477
Two of: Philosophy 450, 451, 454, 464, 474

Subsidiary Courses

One senior option

PHILOSOPHY, with MINOR

Requirements for Admission. First Year Program (Arts, Social Science, or Natural Science) with a minimum three principal courses which should include Philosophy 20 and whatever principal courses are required by the Minor Department. With departmental approval, a student who has not taken Philosophy 20 may enter this program. Any student selecting this program must consult with the Philosophy Department Chairman and with the Minor Department Chairman concerning his minor courses.

SECOND YEAR

Principal Courses

Philosophy 254; 256 or 257
Two courses from the Minor

Subsidiary Courses

Two senior options, one from Division A and one frm either Division B or C

THIRD YEAR

Principal Courses

Philosophy 351
One of: Philosophy 337, 344, 353, 355, 362, 350*
One of: Philosophy 256 or 257, 338, 357, 350*
Two courses from the Minor

Subsidiary Course

One senior option

FOURTH YEAR

Principal Courses

One of: 456, 458, 466, 467, 477
One of: 450, 451, 454, 464, 474
One further 300 or 400 level Philosophy course
One course from the Minor

Subsidiary Course

One senior option

PHILOSOPHY AND ENGLISH (see page 37)

*can be taken in either sequence

PHILOSOPHY AND GERMAN (see page 47)

PHILOSOPHY AND MATHEMATICS

Requirements for Admission. First Year Program (Arts, Social Science or Natural Science) with Mathematics 24 or Mathematics 27 and two others as principal courses.

SECOND YEAR

Principal Courses

Philosophy 254; either 256 or 257
Mathematics 250, 256, 278

Subsidiary Course

One course from Division A, B, or C

THIRD YEAR

Principal Courses

Philosophy 351; either 256 or 257, or one 300 level Philosophy course
Mathematics 350, 356
One of: Mathematics 340, 351

Subsidiary Course

One senior course from Division A or B

FOURTH YEAR

Principal Courses

Two of: 400 level Philosophy courses
Mathematics 470
One of Mathematics 450, 456, 460
One additional Mathematics or Philosophy course at 300 or 400 level, subject to approval of the Departments

PHILOSOPHY AND HISTORY

Requirements for Admission. First Year Program (Arts or Social Science) with History 20 and Philosophy 20 and one other as principal courses.

SECOND YEAR

Principal Courses

The History department **recommends** the following courses, History 231, 236. Students are free to choose others from the 300 series
Philosophy 254; either 256 or 257

Subsidiary Courses

One course in English
One option (History 20 if not taken previously)

THIRD YEAR

Principal Courses

Two History courses to be chosen from the 300 series,or, with the permission of the instructor, from the 400 series
Either Philosophy 256 or 257; one 300 level *Philosophy* course

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Two or three courses chosen from the History 300 or 400 series
Two or three of: Philosophy 351 and the 400 level Philosophy courses

PHILOSOPHY AND PSYCHOLOGY

Requirements for admission. First Year Program (Arts or Social Science) with Psychology 20 and Philosophy 20 and one other as principal courses. If Psychology 20 was not taken in the First Year, it must be selected as an option in the Second Year.

SECOND YEAR

Principal Courses

Philosophy 254; either 256 or 257
Psychology 235, 236, 255

Subsidiary Course

One option

THIRD YEAR

Principal Courses

Either Philosophy 256 or 257; and one 300 level *Philosophy course*
Psychology 338, 349
One of: Psychology 331, 337, 343

FOURTH YEAR

Principal Courses

Two of: Philosophy 351 and the 400 level Philosophy courses
Psychology 445, 459
One of: Psychology 446, 448

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 — 1

30. Philosophical Classics. An introduction to philosophy through a historical survey of classic writings. Readings will be chosen from Plato, Aristotle, Descartes, Hume, Kant, and one recent or contemporary philosopher.
3 hours — 1

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 — 20

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 — 9

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, artistic criticism, fiction, metaphor, appreciation, and the logic of value judgments.
2 hours — 3

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 — 28

37. Social, Political and Legal Philosophy. The first term of this course will be devoted to a critical study of contemporary social and political thought. The second half of the year will be given to a critical analysis of current and classical legal philosophy.
2 hours — 8

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 — 17

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 — 31

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 – 12

44. Philosophy of the Social Sciences and the Philosophy of History. The first term of this course 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 hours – 22

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 – 35

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 – 14

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 – 33

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.

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 – 3

256. Ancient Philosophy. A critical examination of the major philosophers and philosophical schools from the Presocratics to Plotinus.
3 hours – 15

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.
3 hours – 31

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 – 8

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 – 22

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 – 22

350. Philosophical Texts. An examination of selected source materials in Ancient, Modern and Contemporary Philosophy; critical works will also be studied. The texts vary from year to year; more detailed information may be obtained from the department.
3 hours – 13

351. Logic and Problems of Philosophical Analysis. First term: formal logic-propositional calculus; quantification theory. Second term: modal logic, problems of meaning and ontology.
3 hours – 20

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 – 12

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 – 34

357. Modern Philosophy. Later modern philosophy with particular emphasis on the philosophy of the 19th century.
Prerequisite: Philosophy 257
3 hours – 5

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 — 29

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 — 29

451. Formal Logic. Various systems of deductive logic will be reviewed and theoretical properties of these systems will be established. Specimen topics: systems of natural deduction, axiom systems and their properties, naive set theory and problems in the philosophy of logic.
Prerequisite: Philosophy 351 or permission of the Chairman.
3 hours — 32

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 — 4

456. Plato / Aristotle. Full year courses in Plato and Aristotle offered in alternate years. The later dialogues of Plato and selected works of Aristotle will receive special attention.
3 hours — 36

458. Dewey, Bergson and Whitehead. A critical study of these 20th century philosophers.
3 hours — 14

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 — 25

466. Mediaeval Philosophy. A survey of the principal currents in philosophy from the breakdown of classical culture to the Renaissance (350 A.D. to 1500). Primary emphasis will be placed on the critical examination of representative works. (Offered alternate years.)
Prerequisite: Philosophy 256
3 hours — 18

467. Rationalism / Empiricism. Full year courses in rationalism and empiricism are offered in alternate years. In the course on rationalism emphasis is placed on the philosophies of Descartes, Leibniz and Spinoza, and in the course on empiricism emphasis is placed on Locke, Berkeley and Hume. In both courses, however, attention is given to the minor figures of the period.
3 hours — 22

474. Problems of Philosophy. A study of selected philosophical problems. The problems vary from year to year; more detailed information may be obtained from the department.
3 hours — 13

477. Hume / Kant. Full year courses in selected writings of Hume and of Kant are offered in alternate years. In each case an intensive study of several major works of the philosopher will be undertaken.
3 hours — 24

RUSSIAN STUDIES

Chairman

Rudolf Neuhäuser, MA*Toronto;* PhD *Vienna*

THREE-YEAR PROGRAM

Area of Concentration

Students in the Three-year BA Program intending to concentrate in Russian Studies are required to take Russian 291, 390, 391 and any *one* additional literature course in the Department not previously taken. Language courses must be taken in sequence subject to prerequisites; literature courses may be taken in any sequence.

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.

HONORS PROGRAM

Requirements for Admission

First Year Program (Arts, Science, or Social Science) with one of 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 and Spanish: 2 or 10) 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 31.

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);

Third Year: Russian 391;

Fourth Year: Russian 491;

And five additional Russian Honors courses including Russian 390 and 490 taken in any sequence during the three years of the Honors Program. In every one of the three years of the Program the student must take at least two Russian courses. Students are advised to choose options in consultation with the Departments concerned.

The Department recommends that students take History 37 (Survey of Russian History) and Russian 290 (Introduction to Russian Literature and Culture) as two 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 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;

THIRD YEAR

Russian 391;

FOURTH YEAR

Russian 491;

And three additional Russian Honors courses including Russian 390 and 490 taken in any sequence during the three years of the Honors Program. In every one of the last three years of the Program the student must take at least two Russian courses. Students are advised to choose options in consultation with the Departments concerned.

ENGLISH AND RUSSIAN (see page 37)

FRENCH AND RUSSIAN (see page 43)

GERMAN AND RUSSIAN (see page 46)

HISTORY AND RUSSIAN

Requirements for Admission. First Year Program (Arts or Social Science) with History 20, Russian 20 (or 2), and one other course as principal courses. For grades required for admission and progression see page 31. 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 (page 54)

SPANISH AND RUSSIAN

Requirements for Admission. First Year Program (Arts, Science, or Social Science) with Russian 20 (or 2) and Spanish 20 or 21 (or 2 or 10) and one other course as principal courses. Those who take Spanish 2 or 10 in the First Year are urged to take Spanish 20 or 21 in Summer School. If this is impossible they should consult with the Chairman of the Spanish Department concerning an alternative arrangement.

For grades required for admission and progression see page 31.

After the First Year the program consists of a total of at least 15 courses: a minimum of six honors Russian courses, seven honors Spanish courses, and two options (one option only if Russian 20 is taken in the Second Year).

For Russian course requirements see above (page 26).

The Spanish courses must be selected as follows: Two language courses, Spanish 231 and 341, are compulsory. Five others may be selected to suit indivi-

dual interests, with representation from each of the following categories:

Modern Spanish Literature: 240, 260
Spanish American Literature: 248, 348
Classical Spanish Literature: 365, 460, 465

Note: Spanish 461, an advanced course in language and stylistics, may be taken by a student interested in further language study, provided at least one course is selected from each of the categories above.

There is also a system of required seminars.

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.

2. Intensive Russian for Beginners. An intensive course in written and spoken Russian for students with no previous knowledge of Russian. Students 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 – 10

2. Introductory Polish. A beginning course with concentration on conversational skill and reading of literary material.
No prerequisite
4 lectures, 1 laboratory hour – 7

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 – 10

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 – 34

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 – 13

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 English
No prerequisites
2 hours – 18

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 (Not offered 1971-72)
No prerequisites
2 hours – 6

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 or literature.
Readings and lectures in English
No prerequisites
2 hours – 16

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 – 14

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 – 4

HONORS COURSES

Students in the Three-year Program who concentrate in Russian Studies and students registered in one of the Honors Programs of the Department may not take the following two hour literature courses in fulfilment of degree requirements: 30, 32, 34, 36, 39, 49. Such students will take the corresponding three hour courses which include a tutorial during which students will discuss material read in the original. These three hour 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 – 31

391. Composition, Translation, and Oral Practice. Advanced syntax.
Prerequisite: Russian 291
3 hours and 1 hour for oral practice – 29

491. Advanced Composition and Oral Practice. Stylistics: study of various literary and non-literary styles.
Prerequisite: Russian 391
3 hours – 25

493. History of the Russian Language. The development of the Russian language to the present.
Prerequisite: Russian 20
2 hours – 12

SURVEYS OF 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.
Some readings in Russian.
2 hours and 1 tutorial hour – 13

390. Prose of the 19th Century. The Great Masters of the 19th Century from Pushkin to Chekhov.
Some readings in Russian.
2 hours and 1 tutorial hour – 14

490. Prose of the 20th Century. A study of Russian Literature from Gorky to the present.
Some readings in Russian.
2 hours and 1 tutorial hour – 4

AUTHORS AND GENRES IN RUSSIAN LITERATURE

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 and 1 tutorial hour – 18

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. (Not offered 1971-72)
2 lecture hours and 1 tutorial hour – 6

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 and 1 tutorial hour – 16

492. Seminar in Russian Drama and the History of the Russian Theatre. Authors and plays will be selected by the instructor.
Some readings and lectures in Russian.
Prerequisite: Russian 291
2 hours – 16

494. Poetry of the 19th and Early 20th Centuries. From Pushkin to Symbolism.
Readings in Russian.
Prerequisite: Russian 291
2 hours – 21

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

SPANISH AND ITALIAN

Chairman

Weston Flint, BA *Harvard;* MA, PhD *North Carolina*

The Department offers courses in Italian, Portuguese and Spanish, with an honors program in Spanish and an opportunity to select an area of concentration in the Three-year Program in Italian and Spanish.

General Courses

ITALIAN COURSES

Students in the Three-year Program who choose Italian as their area of concentration must select Italian 30, 31, 34 and 40.

2. Intensive Italian. Introduction to understanding, speaking, reading and writing Italian. Audio-lingual techniques are combined with required practice in the language laboratory.
Prepares student directly for Italian 20
5 hours – 9

20. Advanced Italian. Introduction to Italian literature with grammar review and practice in composition. Reading and discussion of short stories by Alberto Moravia are used to improve facility in spoken Italian.
Prerequisite: Italian 2, Grade 13 or permission of the Department
3 or 4 hours – 9

30. Literature of the 'Rinascimento'. Study of representative writers of the 15th and 16th centuries.
Prerequisite: Italian 20 or permission of the Department (Not offered 1971-72)
3 hours – 26

31. Italian Language and Civilization. Grammar review and composition, with study of selected aspects of Italian civilization.
Prerequisite: Italian 20 or permission of the Department
3 hours – 4

34. Modern Italian Literature. Selected works of the nineteenth and twentieth centuries.
Prerequisite: Italian 20 or permission of the Department
3 hours – 19

36. Italian Literature in Translation. A course designed to introduce the student to selected highlights of Italian literature (e.g. Dante, Petrarch, Boccaccio, Ariosto, Machiavelli, Manzoni, Leopardi, etc.) This course will be given in English and will not count toward an Italian concentration.
3 hours – 34

40. Dante, Petrarca, Boccaccio and Their Period.
Prerequisite: Italian 20 or permission of the Department
3 hours – 16

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.
Prerequisite: Permission of the Department
4 hours – 19

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 – 1

SPANISH COURSES

Students in the Three-year Program who choose Spanish as their subject of concentration must elect Spanish 31.

It is recommended that students who concentrate in this department elect at least four senior courses in the subject of concentration.

Students who begin Spanish at the University and who desire to qualify for senior courses are urged to take Spanish 20 or 21 in Summer School. Those unable to do so should consult the Chairman of the Department concerning an alternative.

1. Elementary Spanish. Introduction to understanding, speaking, reading and writing Spanish. Audio-lingual techniques are combined with required practice in the language laboratory. Spanish 1 is offered in Summer School only.

2. 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 – 29

10. Intermediate Spanish. Readings in Spanish literature with grammar review and oral practice. Spanish 10 is offered in Summer School only.
Prerequisite: Spanish 1 or Grade 12 Spanish.

20. 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 eighteen class, plus eighteen 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 – 28

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 and covers the grammar in 36 classes plus 18 laboratory hours.
Prerequisite: Spanish 2, 10, Grade 13 Spanish or permission of the Department.
4 hours – 29

31. Spanish Language and Civilization. For students who have completed Spanish 20 or 21. Concentration is on grammar review, oral practice and a study of Spanish civilization. Credit will not be given for both Spanish 31 and Spanish 231.
Prerequisite: Spanish 20, 21, or permission of the Department
3 hours – 28

34. Modern Peninsular Literature. Selected works of the nineteenth and twentieth centuries.
Prerequisite: Spanish 20, 21 or permission of the Department
3 hours – 2

36. Hispanic Literature in Translation. This course is designed to introduce the student to selected highlights of Hispanic literature (e.g. Cervantes, Lope de Vega, Calderón, Fray Luis de León, Unamuno, Garcia Lorca, Ortega y Gasset, Jorge Luis Borges, Miguel Angel Asturias, etc.). The course will be given in English and will not count towards a Spanish concentration.
3 hours – 8

44. Literature of the Golden Age. Selected works of the sixteenth and seventeenth centuries.
(Not offered 1971-72)
Prerequisite: Spanish 20 or 21 or permission of the Department
3 hours – 22

45. Scientific Spanish. A course designed to guide students in the techniques of translation from Spanish to English. The course is particularly recommended for the advanced student in other disciplines who needs a reading proficiency in Spanish for his higher degree. The materials for translation will be decided according to the field

of interest of the student. Before enrolling in this course a student should have some previous knowledge of Spanish.
(Not offered 1971-72)
Prerequisite: Permission of the Department
1 hour – 19

48. 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 or 21 or permission of the Department
3 hours – 12

Note: Students in the Three-year Program may elect an Honors Course if necessary to complete their requirements.

SPANISH LANGUAGE AND LITERATURE

Requirements for Admission. First Year Program (Arts, Science of Social Science) with one of Spanish 2, 10, 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. If this is impossible they should consult the Chairman of the Department. 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 Spanish courses and six options. There is also a system of required Seminars.

The nine Spanish courses are to be chosen from the following: Spanish 231, 240, 248, 260, 341, 348, 365, 460, 461, 465. Spanish 231, 341 and 461 are obligatory.

SPANISH HONORS COURSES

231. Spanish Language and Civilization. A course in guided free composition, translation and practical phonetics, supplemented by 15 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
2 or 3 hours – 29

240. Spanish Prose of the Nineteenth and Twentieth Centuries. A study of selected prose works from Larra to the present with special attention paid to methods of literary criticism. Emphasis will be placed on Galdós, Unamuno, Azorin, Baroja, Valle-Inclán and Cela.
Prerequisite: Spanish 20, 21 or permission of the Department.
2 hours – 14

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 – 4

260. Spanish Poetry of the Nineteenth and Twentieth Centuries. A critical study of the works of selected poets from Espronceda to the present.
Prerequisite: Spanish 20, 21 or permission of the Department
2 hours – 5

341. Spanish Language. A course in guided free composition, translation, syntax and oral practice.
Prerequisite: Spanish 231 or permission of the Department
3 hours – 35

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 15 seminars on Latin-American Civilization from 1700 to the present.
2 or 3 hours – 12

365. Hispanic Poetry from its origins to 1700. A critical analysis of poetic texts from the early "jarchas" to Sor Juana Inés de la Cruz.
2 hours – 19

460. Spanish Drama From the "Celestina" to the Present. A study of Spanish drama from its origins to the present day.
3 hours – 31

461. Spanish Language and Civilization. History of the Spanish Language with special emphasis on stylistic evolution through the ages and dialectic variations. Two hours of language study will be amplified by a series of fifteen seminar periods which will examine Spanish civilization prior to 1700.
2 or 3 hours – 21

465. Spanish Prose of the Golden Age. A study of major prose works of this period including the picaresque novel and the **Quijote.**
3 hours – 8

Combined Honors Programs

ENGLISH AND SPANISH (see page 38)

FRENCH AND SPANISH (see page 44)

GERMAN AND SPANISH (see page 46)

LATIN AND SPANISH (see page 32)

RUSSIAN AND SPANISH (see page 54)

Note: Students may normally progress to an MA program in Spanish on satisfactory completion of the Spanish Language and Literature Program or of any Combined Honors Program of which Spanish forms a part.

MEMBERS OF THE FACULTY OF ARTS

CLASSICAL STUDIES

Professors

Gerber, D.E., BA, MA *UWO;* PhD *Toronto* Chairman of Department

Raymond, A.E., BA *UWO;* MA *Toronto;* PhD *Chicago,* W. Sherwood Fox Professor of Classics

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*

Lecturer

Carbone, M.E., BA, MA *UWO*

ENGLISH

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., DSO, BA, MA *UWO;* AM, PhD *Harvard*

Fleck, P.D., BA, MA *UWO;* PhD *Belfast* Chairman of Department

Graham, J.W., BA *Manitoba;* MA, PhD *Toronto*

Hieatt, A.K., AB *Louisville;* PhD *Columbia*

Hieatt, Constance B. (Mrs.), BA, MA *Hunter College;* PhD *Yale*

Klinck, C.F., BA *UWO;* MA, PhD *Columbia;* FRSC Senior Professor

Rajan, B., BA, MA, PhD *Cantab* Senior Professor

Rans, G., MA *Cantab;* PhD *Leeds*

Reaney, J., BA, MA, PhD *Toronto*

Sanborn, C.E., BA, MA, PhD *Toronto*

Woodman, R.G., BA *British Columbia;* MA *Manitoba;* PhD *Toronto*

Associate Professors

Bandeen, Betty, BA *UWO;* AM, PhD *Radcliffe*

Bolgan, Anne C., BA *D'Youville;* MA, PhD *Toronto*

Buckley, G.E., BA *Mount Allison;* MA *Columbia*

Chapin, D.F., BA, MA, PhD *Toronto*

Collins, T.J., BA, MA *UWO;* PhD *Indiana*

Devereux, E.J., BA, MA *Newfoundland;* DPhil *Oxon*

Hair, D.S., BA *UWO;* MA, PhD *Toronto* Associate Chairman

Kaula, D., 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

Arnold, L.E., BA *Leeds;* MA *Simon Fraser*

Bieman, Elizabeth (Mrs.), BA, MA *UWO*

Brown, Mary M. (Mrs.), BA, MA *UWO*

Dragland, S.L., BA, MA *Alberta;* PhD *Queen's*

Garber, L., BA, MA *Toronto*

Gaudet, P.M., BA *Toronto;* MA Princeton

George, D., BA, MA *Manchester;* PhD *London*

Good, J.M., BA, MA *UWO*

Gordon, I.R.F., BA *Cantab;* MA, PhD *California (Los Angeles)*

Hensley, D.H., BA, MA *Oregon;* PhD *Wisconsin*

House, G.S., AB, MA *California (Berkeley)*

Lundgren, B.R., BA *Manitoba;* MA *UWO*

Mellamphy, E.N., BA *Dublin;* MA *Manitoba*

Redekop, E.H., BA *Manitoba;* MA *Toronto*

Smith, M.E., BA *Texas;* MA *Columbia;* MA *Yale*

Straulman, Ann Therese, BA *Wellesley;* MA *Kansas City;* PhD *Wisconsin*

Surette, Leon, BA *Queen's;* MA, PhD *Toronto*

Tausky, T.E., BA *McGill;* BA *Cantab;* MA *Yale*

Young, A.M., BA *Toronto*

FINE ART

Professor

Dale, W.S.A., BA, MA *Toronto;* PhD *Harvard;* FRSA. Head of Department

Associate Professors

Hart, W.S., BA, MA *California (Berkeley)*

Urquhart, A.M., BFA *Buffalo*

Assistant Professor

Bonario, B., BS *Texas;* MA *Michigan*

Cameron, M.A.S., BA, MA *Liverpool*

Lecturers

Bonham, D.E.

de Kergommeaux, D.

Fenwick, W.R.

Hughes, T.W., NDD *Middlesbrough College of Art;* Post NDD *Leeds College of Art*

Stubbs, M.C., AOCA (Part-time)

FRENCH

Professors

Barbier, C.P., BA, MA *Leeds* Chairman of Department

Bush, W.S., BA *John B. Stetson University;* MA *South Dakota;* DU *Paris*

Sanders, J.B., BA, MA *Manitoba;* DU *Paris*

Tuchmaier, H., PhD *Laval*

Venesoen, C., DèsL *Laval*

Associate Professors

Balse, M.L., BA, MA, PhD *Bombay;* DU *Paris*

Creighton, D.G., BA, MA *Toronto;* PhD *Columbia*

Harper, F.K., BA, MA *Manitoba*

Heller, L.M., BA, MA, PhD *Wisconsin*

Jones, Dorothy 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;* DU *Nancy*

Brunet, J.P., LèsL, DES *Sorbonne*

Cameron, J.L., BA *New Zealand;* MA *Canterbury;* MA, PhD *Princeton*

Davies, B., BA *McMaster;* MA *Harvard*

Forsyth, Louise H., BA *Sask.;* MA, PhD *UWO*

Ly, Thi N., DU *Paris*

Ross, Margaret H., BSc *Dalhousie;* LèsL *Orléans-Tours;* MA *Dalhousie;* DLLLeC *Orléans-Tours*

Saraydar, Alma C., BA *California (Los Angeles);* MA *Chicago;* PhD *California (Berkeley)*

Tatilon, C.D., LèsL *Aix-en-Provence*

Vilquin, J.C., LèsL *Paris*

Westgate, D.E., BA *Nottingham;* MA *McMaster;* PhD *UWO*

Lecturers

Andrieu, Jacqueline, LèsL, DES *Aix-en-Provence*

Bowker, Carolyn, BA, MA *Toronto*

Dupraz, J.Y., LèsL, MèsL *Grenoble*

Holmes, G., BA *Leeds*

Jones, R.F., BA *Dublin;* MA *Queen's*

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*

Schluetter, H.J., PhD *Kiel*

Assistant Professors

Seufert, G.H., Staatsexamen *Tübingen*

Spencer, Hanna (Mrs.), PhD *Prague*

Lecturer

Purekevich, Renata (Mrs.), BA, MA *UWO*

Instructor

Beutler, B., PhilPaed *Munich*; Staatsexamen *Hamburg;* MA *UWO*

LINGUISTICS

Associate Professors

Asensio, J., Lic, Dr, Fil y Let *Madrid* (Spanish)

Avotins, I., BA *Toronto;* AM, PhD *Harvard* (Classical Studies)

Bandeen, Betty, BA *UWO;* AM, PhD *Radcliffe* (English)

Wilson, H.R., BA, MA *Toronto;* PhD *Michigan* (English) Group Chairman

Assistant Professors

Brunet, J.P., LèsL, DES *Sorbonne* (French)

Tatilon, C.D., LèsL, *Aix-en-Provence* (French)

Lecturers

Eramian, G.M., BA *Brown;* MA *Columbia* (Russian Studies)

PHILOSOPHY

Professors

Binkley, R.W., BA *Colorado;* PhD *Minnesota* Acting Chairman, 1971-72

Butts, R.E., BA, MA *Syracuse;* PhD *Pennsylvania* Chairman of Department (on leave, 1971-72)

Davis, J.W., BA, MA, PhD *Boston*

Johnson, A.H., BA *Mt. Allison;* MA, PhD *Toronto;* FRSC Senior Professor

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*

Freed, B., BA *Kenyon College;* PhD *California (Berkeley)*

Henry, W.C., BA, MA *UWO;* PhD *Toronto*

Hockney, D.J., BA *McMaster;* PhD *Cornell*

Hooker, C.A., BSc, BA, PhD (Physics) *Sydney;* PhD (Philosophy) *York*

Johnson, H.J., BA *Alfred;* PhD *Chicago*

Assistant Professors

Beaman, E., BA *Cincinnati*

Harper, W.L., BS *Rensselaer*

Marras, A., BA *Colgate;* PhD *Duke*

Maynard, P., BA *Chicago;* PhD *Cornell*

Muehlmann, R.G., BA *Indiana;* PhD *Iowa*

Nicholas, J.M., BSc, MSc *Sussex*

Pearce, G., BA *William and Mary*

Schrecker, Anne, BA *Kalamazoo;* MA *Wellesley;* PhD *Bryn Mawr*

Shorten, Sarah J., MA *St. Andrews;* MA *Washington*

Williams, Martha E., BS *William and Mary;* MA, PhD *Bryn Mawr*

RUSSIAN STUDIES

Associate Professor

Neuhauser, R., MA *Toronto;* PhD *Vienna* Head of Department

Assistant Professors

Bernotas, Nina S. (Mrs.), BA, MA *Toronto*

Eramian, G.M., BA *Brown;* MA *Columbia*

Froese, Erna V. (Mrs.), BA *Simferopol*

Wilson, R.K., BA *Harvard;* MA *Berkeley*

SPANISH AND ITALIAN

Professors

Flint, W., BA *Harvard;* MA, PhD *North Carolina* Chairman of Department

Shervill, R.N., BA *UWO;* MA, PhD *North Carolina*

Smieja, F.L., BA *National, Ireland;* MA, PhD *London*

Associate Professors

Asensio, J., Lic, Dr, Fil y Let *Madrid*

Marti, A., Lic, Dr, Fil y Let *Barcelona*

Assistant Professors

Brizio, M.V., Dott Fa *Bologna*

Burghardt, W., BA, MA *Toronto*

Lopez-Pacheco, J., Lic, Fil y Let *Madrid*

Munn, B.W., MA *Cantab*

Newman, J.C., BA *McGill;* MA *Radcliffe;* Dra. Fil y Let *Madrid*

Lecturer

Belladonna, R., BA *London;* Dott Ling e Lett Mod *Genoa*

Faculty of Dentistry

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ACADEMIC CALENDAR

1971

August 6	Last day for receiving applications for examinations for removal of conditions.
August 27	Examinations for removal of conditions begin at 9:00 a.m. in the Dental Sciences Building.
September 7	Clinical Orientation—Third Year (8:00 a.m. Dental Sciences Building)
September 13	Registration in Thames Hall for all dental students who have not registered by mail. (9:00 a.m. to 12:00 noon).
	Issue of student instrument kits to First, Second and Fourth Years – Dental Stores, Lower Ground Floor, Dental Sciences Building (10:00 a.m. to 2:00 p.m.)
September 14	Lectures begin for all years.
October 11	Thanksgiving Day—Holiday with classes cancelled.
October 29	Autumn Convocation.
November 5	First Quarter ends for all years.
November 8	Second Quarter begins for all years.
December 17	Christmas Vacation for all years begins at 5:00 p.m.

1972

January 3	Lectures resume for all years.
January 14	Second Quarter ends for all years.
January 17	Third Quarter begins for all years. Payment of final instalment of fees is required on or before this date.
March 10	Third Quarter ends for all years.
March 13	Fourth Quarter begins for First, Second and Third Years. Study Week begins for Fourth Year.
March 20	Examinations begin for Fourth Year.
March 27	Fourth Quarter begins for Fourth Year.
March 31	Good Friday—Holiday with classes cancelled.
May 5	Classes end for First, Second and Third Years.
May 8	Study Week begins for First, Second and Third Years.
May 15	Examinations begin for First, Second and Third Years.
May 19	Fourth Quarter ends for Fourth Year.
May 22	Victoria Day—Holiday.
May 23	Summer Clinic commences for Third Year.
June 2	Spring Convocation—Dentistry.
June 23	Summer Clinic ends. Third Year.

Regular meetings of the Council of the Faculty of Dentistry or its Executive Committee are held on the fourth Monday of every month, September to June, inclusive.

History

As early as October, 1947, the Board of Governors of The University of Western Ontario had approved, in principle, the development of a Faculty of Dentistry. This was endorsed by the Canadian Dental Association and the Royal College of Dental Surgeons of Ontario in 1949. In 1950, however, it became obvious there was need to expand the existing facilities in the province. The Royal College of Dental Surgeons accordingly recommended the creation of new and expanded premises for the existing dental school.

In 1962, the RCDS, in a report to the Minister of Health, recommended two sites for the establishment of a second dental school in Ontario. One of these was within The University of Western Ontario. The Honorable John P. Robarts, Prime Minister of Ontario, announced on October 29, 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.

On November 20, 1964, the Board of Governors officially established the Faculty of Dentistry, effective January 1, 1965, and at the same meeting appointed its Dean, who took office on February 1, 1965.

The first class in the Faculty of Dentistry was enrolled in September, 1966.

On September 27, 1966, the Honorable Dr. M.B. Dymond, Minister of Health of Ontario, officiated at the Ground Breaking Ceremony for the Dental Sciences Building and on October 20, 1967, the cornerstone was placed by Col. 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 October 25, 1968.

The undergraduate dental program was fully approved by the Council on Education of the Canadian Dental Association on February 21, 1970.

The degree of Doctor of Dental Surgery was first conferred by The University of Western Ontario on the seven graduates of the first class on May 29, 1970.

Indicative of the rate of progress made by this relatively young faculty is the achievement of full enrolment of 52 students in the 1970-71 freshman class. Earlier predictions did not envisage full enrolment until, perhaps, the mid-1970s.

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 practise 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 89,000 books. Approximately 1,200 journals 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. – 11:00 p.m., Sat 8:30 a.m. – 5:00 p.m. and Sundays 1:00 p.m. – 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 complete successfully 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, 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.

Applicants from other recognized universities who have acquired equivalent qualifications are also eligible for consideration for admission.

Application for Admission

Application for admission to the Faculty of Dentistry must be made upon the regular application form obtainable from the Registrar's Office, The University of Western Ontario, London 72, Canada. The completed forms and supporting documents (originals) are to be mailed to The Director of Admissions, The University of Western Ontario, London 72, Canada. Applications should be submitted not later than March 1, 1972.

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.

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' Fee (Subject to Change)..... $727.50*
If paid in two installments —
With Registration 400.00
First day of Second Term 332.50

* (Includes Student Activity and Health Service Fees Totalling $54.00)

Instrument Fee

(Estimate only) — Payable with Registration
First year $850.00
Second Year 515.00
Third Year 380.00
Fourth Year 105.00
Advanced Standing Student $1275.00
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.

Student Housing

For students who will not be living in residence, the Off-Campus Housing Office provides a listing service of housing accommodation available in London by the following categories:
Rooms (with or without breakfast)
Rooms with Board
Light Housekeeping
Apartments
Houses

To use this service students should apply in person to Room 23, Thames Hall; lists of available accommodation are not produced for distribution by mail. An estimate of Room and Board (two meals) would be $20 to $25 per week or $650 or $825 per session per student.

Financial Aid

Western's student-aid program makes it possible for any able and motivated student to balance his educational budget. Bursaries, grants, and loans are available for those students with genuine financial need.

Application for assistance should be made to the Director of Financial Aid, as outlined in the General Information Booklet.

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, provided they can demonstrate financial need. There is no "academic average" requirement. Application forms, which are obtainable at all secondary and post-secondary institutions, should be completed in duplicate and sent to the Financial Aid Office, Room 103, Thames Hall. Completion of this one form automatically secures consideration for the majority of awards administered by the University.

Restricted and Unrestricted 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.

The following bursaries are restricted by residence, sex, course, year, as indicated:

The Maude Gordon Educational Fund. Up to $500 each. 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.

The Greek Ladies' Philoptochus Society Award. $100. This bursary is provided annually to a student of Greek descent.

The Kathleen Gordon Hanna Educational Fund. Up to $500 each. 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.

Huron County Bursaries. Up to $250 each. This bursary is available to students who have lived in Huron County for at least three years.

IODE (Nicholas Wilson Chapter) Bursary. $100. Students entering the final year of any Honors or Professional course are eligible for this bursary.

Leonard Foundation Bursaries. Up to $400 each (for from one to four years). 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 Lieut.-Colonel and Mrs. Reuben Wells of St. Catharines, Ontario. Application forms may be obtained from the Awards Officer and must be filed by February 15th of the year preceding the award.

Ontario Dental Association Bursaries. The Ontario Dental Association has provided $500 for bursaries which may be awarded to students in any year of the course. Academic standing must be satisfactory and there must be a demonstrated financial need. The maximum value of any one bursary is $250. Applications should be made to the Dean.

Oxford County Bursaries. Up to $250 each. Students from Oxford County, excluding Ingersoll and Woodstock, are eligible.

Perth County Bursaries. Up to $250 each. Students from Perth County, excluding St. Mary's and Stratford, are eligible.

Royal Canadian Legion (London) Student–Aid Fund. Up to $200 each. Deserving undergraduates who are veterans or dependents of veterans are eligible.

Wellington County Bursaries. Up to $250 each. Students from Wellington County, excluding Guelph, are eligible.

The following bursaries are unrestricted:

Atkinson Charitable Foundation Student-Aid Funds. Up to $200 each. Students who are residents of Ontario are eligible.

A.T.A. Trucking Industry Educational Foundation Fund. Up to $250 each.

The Circle "K" Club Award. $100.

H.M.C.S. Prevost Student-Aid Fund. $75.

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. (Overseas Chapter) Bursary. $100.

I.O.D.E. (Princess Patricia Chapter) Bursary. $100.

I.O.D.E. (The Colonel G. Eric Reid Chapter) Bursary. $100.

I.O.D.E. (Nicholas Wilson Chapter) Bursary. $100.

The Interprovincial Pipe Line Company Bursaries. Up to $250 each.

The Local 27 U.A.W. Bursary. $250.

The Proctor and Gamble Company of Canada Bursaries. Up to $250. each.

The W.F. Thomas Student-Aid Fund. Up to $300 each. Preference is given to applicants whose residence is in St. Thomas or Elgin County.

The U.W.O. Alumni Association Bursary. Up to $400 each.

Walter Wright Scholarships. Up to $250 each.

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 sections:

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.

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.

Canada Student Loan 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 and secondary schools in Ontario. (Ontario residents see Ontario Student Awards).

University Loan Funds. Up to $400. Available to full-time students in any 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.

Funds, Scholarships and Awards

The Dean's Discretionary Fund.

A fund established by the Royal College of Dental Surgeons of Ontario and administered by the Dean of the Faculty of Dentistry. Its aim, to the extent of its limited resources, is to assist deserving dental students through a period of financial difficulty caused by circumstances beyond their control.

FIRST YEAR

The Royal College of Dental Surgeons Scholarship. A scholarship valued at $150 established in the Faculty of Dentistry by the Royal College of Dental Surgeons of Ontario will be awarded to the student ranking highest in honors (an average of at least 80%) at the annual examinations of the first year. Applications are not required.

Mosby Book Awards.
Book awards established in the Faculty of Dentistry by the C.V. Mosby Company. The awards are made by the Council of the Faculty to the members of the first year selected by the Examinations Committee in the following subjects: anatomy, occlusion and physiology. Applications are not required.

SECOND YEAR

The Royal College of Dental Surgeons Scholarship.
A scholarship valued at $150 established in the Faculty of Dentistry by the Royal College of Dental Surgeons of Ontario will be awarded to the student ranking highest in honors (an average of at least 80%) at the annual examinations of the second year. Applications are not required.

Hamilton Academy of Dentistry Award in Oral Medicine.
An award, in the form of a plaque, is established in the Faculty of Dentistry by the Hamilton Academy of Dentistry. The award shall be presented annually to the member of the second year class 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.

Mosby Book Awards.
Book awards established in the Faculty of Dentistry by the C.V. Mosby Company. The awards are made by the Council of the Faculty to the members of the second year selected by the Examinations Committee in the following subjects: oral pathology and restorative dentistry. Applications are not required.

THIRD YEAR

International College of Dentists Award.
$100 plus certificate is established in the Faculty of Dentistry by the International College of Dentists (Canadian Section). The scholarship shall be awarded annually on the recommendation of the Promotions Committee to a member of the third year class who exhibits the highest degree of both academic proficiency and participation in extra-curricular activities. An application is not required.

Centennial Paediatric Dentistry Award.
An award in the amount of $100 is established in the Faculty of Dentistry by the Ladies' Auxiliary to the London and District Dental Society. The scholarship shall be awarded annually to the member of the third-year class 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.

Oral Surgery Award.
$50 plus a plaque is established in the Faculty of Dentistry by the Elgin Dental Association. The award shall be presented annually on the recommendation of the Department of Oral Surgery to the third year student who shows the greatest proficiency in Oral Surgery. No application is required.

Restorative Dentistry Award.
$100 and a plaque is established in the Faculty of Dentistry, by Dr. D.B. Gilboe in memory of Dr. Erick T. Anderson. The award shall be presented annually on the recommendation of the Department of Restorative Dentistry to the third year student who shows the greatest proficiency in Restorative Dentistry. No application is required.

W.B. Saunders Book Award.
A one-year subscription to the *Dental Clinics of North America.* The award shall be presented annually on the recommendation of the Department of Social Dentistry to the third year student who shows the greatest proficiency in Social Dentistry. Application is not required.

FOURTH YEAR

The University Western Ontario Medal
Gold medal awarded to the fourth-year student for general proficiency throughout the entire four years of the program.

London & District Dental Society Award.
A gift, awarded annually to the senior student for general proficiency in the fourth dental year. No application is required.

Dental Sciences Research Award
Plaque and a one year subscription to the *Journal of Dental Research* donated by the Department of Restorative Dentistry on behalf of Dean W. Scott Hamilton and awarded to the senior student who has demonstrated outstanding interest and activities in research related to the dental sciences throughout his undergraduate program. No application is required.

American Association of Endodontists Award
A one year membership in the American Association of Endodontists, which includes a subscription to *Oral Surgery, Oral Medicine, Oral Pathology;* awarded annually on the recommendation of the Division of Endodontics, Department of Restorative Dentistry, to the senior student who has shown the greatest interest and proficiency in the field of Endodontics. An application is not required.

The American Academy of Oral Medicine Award.
Certificate plus a copy of the *Journal of the American Academy of Oral Medicine* in which the student's name will appear; awarded annually to the fourth year student who on the recommendation of the Department of Oral Medicine shows the greatest proficiency in Oral Medicine. An application is not required.

The American Association of Orthodontists Award in Oral-Facial Growth.
Certificate; awarded annually to the senior 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.

Canadian Society of Dentistry for Children Award.
A textbook with application to dentistry for children, and a one year subscription to the *Journal of Dentistry for Children;* awarded annually to the senior student who on the recommendation of the Department of Paediatric Dentistry is proficient in subjects relating to dentistry for children. No application is required.

Clinical Paedodontic Award.
Medal; 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 senior student who on the recommendation of the Division of Paedodontics, Department of Paediatric Dentistry has shown the greatest proficiency in clinical paedodontics. No application is required.

The American Academy of Periodontology Award.
Certificate and a one year subscription to the *Journal of Periodontology-Periodontics;* awarded annually to the senior 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.

Canadian Academy of Periodontology Award
Medical Dictionary; awarded annually to the 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.

The American Academy of Dental Radiology Award.
Certificate; awarded annually to the senior 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.

The Senior Award in Oral Surgery
A plaque 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.

The Canadian Society of Oral Surgeons Award
A textbook in Oral Surgery or the equivalent in cash; presented 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.

The Removable Prosthodontics Award
A plaque 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 senior student who has shown the greatest proficiency in Removable Prosthodontics throughout his undergraduate dental program. An application is not required.

The Fixed Prosthodontics Award
A plaque 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 senior student who has shown the greatest proficiency in Fixed Prosthodontics throughout his undergraduate dental program. An application is not required.

Pro Liberis Prize
$50 accompanied by a key; established in the Faculty of Dentistry by the Dental Public Health Committee of the Ontario Dental Association. Awarded annually to the senior 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.

Prizes

The Ontario Dental Association Honorary Members Prize.
$40; 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.

Student Regulations

Any statement in this Brochure applies only to the session of 1971-72. Students registering in the Faculty of Dentistry are subject to any decisions which may be made by the Council of the Faculty of Dentistry and by the Senate or Board of Governors of the University.

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 session. The submission of this report on the pro forma supplied is the responsibility of the incoming student prior to registration.

Health Services on Campus.

The Health Service clinic in Somerville House 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.

Hospital Services Insurance.

Hospital insurance is not provided by the University. Hospital insurance offered by the Ontario Hospital Services Commission is the only form of basic hospital insurance permitted in Ontario. It is the student's responsibility to obtain the necessary coverage under the Ontario Hospital Services Insurance Plan. Coverage does not become effective for three months from time of application for Ontario Hospital Insurance. The premium is $16.50 for three months for a single person and $33.00 for three months for a family, payable in advance.

Students from other provinces who already have hospital insurance are urged to ascertain, before coming to Ontario, if their policies will be honored in Ontario hospitals and for how long.

Students from outside Canada should apply for Ontario Hospital 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 will incur charges of approximately $50 per day.

Medical Services Insurance.

The only medical services insurance allowed in Ontario at the present time is the Ontario Health Services Insurance Plan (OHSIP) administered by the provincial government. This plan is comprehensive and may be purchased through OHSIP directly or through one of its agents. Coverage does not become effective for three months from time of application. The premium is $17.70 for three months for a single person, $35.40 for three months for a couple, and $44.25 for three months for a family, payable in advance. Persons who have been resident in the Province for twelve months may receive assistance in paying premiums in accordance with regulations relating to personal income. More detailed information may be obtained from Health Insurance Registration Board, 2195 Yonge Street, Toronto 295, Ontario. Telephone: 482-1111.

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. 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 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-In-Council, 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 course, 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 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 under exceptional circumstances, and then only when a vacancy is available in that year. The work of the complete year must be repeated; credit for any completed course or courses in a failed year shall not be allowed.

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 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

Academic Rights of Students

The Senate has established procedures for petitions and appeals.

PETITION

A petition is an instrument whereby a student may seek to have a regulation of the University waived on academic or compassionate grounds.

Procedure. The student may institute a petition in the Office of the Dean of his Faculty on a form provided for the purpose, and will be notified later of the Dean's decision.

Reconsideration by Senate. A student shall have the right to require the Senate to consider the decision of the Dean by making application to the Secretary of the Senate on a form provided for the purpose.

APPEAL

An appeal is an instrument by which a student is protected against an error in grading or in final standing, unfair prejudice of a professor, or serious negligence in instruction.

Procedure. A student is required to make a formal complaint to the Chairman of the Department concerned. If the problem cannot be solved in this way a written appeal setting forth the grounds of the complaint may be instituted to the Dean of the academic unit concerned who may appoint or request an appropriate committee composed of students and faculty to advise him.

Reconsideration by Senate. A student shall have the right to require the Senate to consider the decision of the Dean by making application to the Secretary of the Senate on a form provided for the purpose.

First Year Curriculum, 1971-1972

DEPARTMENT OF ANATOMY

Gross Anatomy

(a) A course of lectures on the core content of systemic anatomy.

(b) A course of lectures and demonstrations in the regional anatomy of the head and neck mainly. The important developmental changes in human embryology are discussed, together with the regional anatomy and functional systems of the brain and spinal cord.
120 hours

A laboratory course involving a detailed dissection of the head and neck and a study of the thoracic and abdominal viscera and the extremities, by students working in small groups.
112 hours

2. Histology
(a) A course of lectures, demonstrations and laboratory periods in cytology and the histology of the fundamental tissues, followed by the microscopic anatomy of the major components of the various bodily systems.
(b) A lecture and laboratory course in the microscopic anatomy of the oral cavity and related structures. The embryology of the oro-facial region is included.
144 hours (Total)

3. Human Genetics. A short course stressing the application of several genetic principles to medicine and dentistry and acquainting the student with the basic terminology of the various branches of human genetics.
16 hours

DEPARTMENT OF BIOCHEMISTRY

1. Biochemistry. A course of lectures in general biochemistry: chemistry of carbohydrates, lipids and proteins; protein structure; chemistry of tissues; chemistry of the cell; blood; enzymes; cellular metabolism; structure and function of nucleic acids; biochemical genetics, lipid metabolism; protein metabolism and synthesis; mineral metabolism and chemistry and function of hormones.
88 hours

A laboratory course illustrating the lecture material and involving "project" exercises for small groups.
64 hours

DEPARTMENT OF ORAL MEDICINE

1. Oral Diagnosis. The technique and importance of taking an emergency case history will be discussed and applied. Also the importance of the general physical and psychological appraisal of the patient will be emphasized and demonstrated. The relationship of dentistry to medicine and what a short case history should elicit will be covered.
4 hours

2. Periodontics. In the first quarter, nine lectures are given on personal oral health. At this time it is demonstrated how a knowledge of basic sciences such as physiology, histology, pathology and bacteriology is necessary, and how it is applied to the retention of one's teeth. Preventive periodontics, the significance of the dental plaque, caries reduction and the importance of proper nutrition and home care are stressed. During the other quarters, orientation, theory, instrumentation and laboratory procedures are taught. The methods used in the examination of the oral cavity will be stressed.
28 hours

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Paediatric Dentistry. This is an introductory program devoted to the general topic of facial growth and illustrated with clinical demonstrations.
8 hours

DEPARTMENT OF PHYSIOLOGY

A course of lectures, tutorials, demonstrations and laboratories designed to enable the student to acquire a basic knowledge of the principles of Human Physiology. Emphasis is placed on the development by the student of individualized learning and self evaluation, and he is expected to be able to evaluate physiological data in terms of changes in the homeostatic processes in response to alterations in the internal and external environment. The content includes: the general properties of the living cell and tissue, excitable tissue and muscle, blood, metabolism and nutrition, digestion, circulation, respiration, kidney and body fluids, acid-base balance, endocrinology, reproduction, growth and development.
160 hours

DEPARTMENT OF RESTORATIVE DENTISTRY

Restorative Dentistry (General). This course represents a combined approach to the traditional subjects of Operative Dentistry and Dental Materials Science. A lecture series introduces the student to fundamental principles involved in the treatment of diseases of the calcified dental tissues. Dental caries and basic restorative technological procedures are considered in detail. The physical and mechanical properties of human teeth are described and compared differentially with those of the various materials used in dental restorative procedures. The theoretical aspects of various topics included in the course will be supported by practical laboratory demonstrations and exercises.
Lectures 40 hours; Laboratory 112 hours

DEPARTMENT OF SOCIAL DENTISTRY

Social Dentistry I

1. Professional Conduct. A short course designed to encourage the development of responsible professional attitudes and to emphasize that dentistry is an integral part of society and that its practitioners, accordingly, have obligations and responsibilities in respect of it.

2. 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.

3. Scientific Writing. An outline of requirements for guidance in the preparation of manuscripts for publication in scientific journals.
8 hours (Total)

INTERDEPARTMENTAL

1. Conjoint Course in Occlusion. This course is composed of three 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 external morpholgy 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 involves the study of Human Growth and Development and provides an opportunity to understand how the human face and dentition grow. Emphasis is placed on normal growth both prenatally and postnatally. Deviations from normal growth and development are introduced principally to illustrate the terminology involved.

The final 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 Departments of Restorative Dentistry and Paediatric Dentistry cooperate in this program.
112 hours

Second Year Curriculum, 1971-1972

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 chemotherapy; 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. Continuation of case history taking and what information should be ascertained. Lectures and demonstrations of the principles and procedures employed in oral diagnosis will be given. Examination of the oral region will be discussed and demonstrated. Diagnostic aids will be covered in order that the dental student will learn to make a complete examination. The relationship of oral and systemic conditions will be stressed.
16 hours

2. Periodontics. Instruction in instrumentation will be given and simple therapeutic measures will be demonstrated. The lecture series on periodontal diseases will cover the history, histological and anatomical definitions and clinical examples, etiology, clinical classification, periodontal traumatism, subgingival curettage, calculus formation, simple gingival surgery and other periodontal procedures, clinical practice in periodontal examination and diagnosis.
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.
20 hours

DEPARTMENT OF ORAL SURGERY

1. Local Anaesthesia. A course of lectures and demonstrations which will include a review of the anatomy, physiology, and pharmacology pertaining to local anaesthesia; detailed instruction and demonstration of intra-oral techniques of administration and emergency resuscitation.
12 hours

2. Oral Surgery. A short introduction to practical oral surgical procedures that apply to students prior to commencing clinical instruction in the third year.
4 hours

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Paediatric Dentistry. A pre-clinical paedodontic and orthodontic laboratory program will prepare the student in the technical procedures he will be required to perform clinically, in his junior and senior years.
48 hours

DEPARTMENT OF PATHOLOGY

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 postmortem 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 dentistry, 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

1. Pharmacology. The course of lectures will outline the principles involved in the absorption, metabolism and excretion of drugs and the mechanism of action, therapeutic uses and toxic effects of the major groups of drugs used clinically. In the laboratory the effects of important drugs will be demonstrated.
72 hours

DEPARTMENT OF RESTORATIVE DENTISTRY

1. Restorative Dentistry (Fixed). The aim of this course is to prepare the student for the clinical practice of Restorative Dentistry as it relates to the restoration of the calcified dental tissues with materials that are permanently secured to the teeth. This course combines those subjects traditionally taught in Operative Dentistry and Fixed Prosthodontics. It is a continuation of the course in Restorative Dentistry offered in the first year. Particular emphasis is placed on cariology, pulp biology, caries control, advanced restorative techniques and the differential choice of restorative materials.

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 extra-coronal 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 lecture series is supplemented by practical laboratory assignments, slide and film presentations, television demonstrations and appropriate reading assignments.
Lectures 56 hours; Laboratory 128 hours

2. Restorative Dentistry (Removable). 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. Endodontics. A series of lectures designed to introduce the student to the treatment of pulp diseases and sequelae. The lectures include biological principles and basic clinical endodontic techniques.
Lectures 8 hours

DEPARTMENT OF SOCIAL DENTISTRY

Social Dentistry II

1. Orientation to Public Health. Relationships of dental health to total personal health and community health. The historical and philosophical background, evolution, organization and functions of public health are covered.

2. Dental Public Health and Preventive Dentistry. The concept of community dental health with the major emphasis on the role of dentistry in public health services is introduced. The development, growth and current status of principles, legislation and practices related to dental public health are discussed. The application of dental public health procedures including dental health education, elementary statistics, epidemiological techniques and administrative practices in the prevention and control of dental diseases will be introduced.

3. Behavioral Science. Introduction to general principles and concepts of this discipline with clinical illustrations where possible. The concept of behavioral science depends upon the interaction of a large number of variables. From a knowledge of these factors and their interactions, the dentist should be better able to understand his own behavior as well as the behavior of others. Social determinants of dental care will be discussed.
24 hours (Total)

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 artifical 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 basic sciences. Indications, objectives, principles, 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. Neurophysiology, and special biochemistry, functional anatomy, and physiology of the oro-facial area are considered.
48 hours

Third Year Curriculum, 1971-1972

DEPARTMENT OF ORAL MEDICINE

Within the regular academic year a total of 80 hours of lecture and seminar instruction is combined with 168 hours of clinical and related experience in respect of the disciplines of this Department.

1. Oral Diagnosis. A lecture and practical course is given in the practice and procedure of oral diagnosis. General appraisal of the patient, use of diagnostic aids, laboratory tests and diagnosis of oral lesions and treatment planning are discussed. Again specific emphasis is placed on the relationship of systemic diseases to oral diseases and oral diseases to the body. The student is also assigned to the oral diagnosis division to learn the concept of total patient care.

Also the students are assigned to the emergency clinic where they will treat a variety of acute oral complaints, and to treatment planning seminars where discussion of interesting and difficult diagnostic and treatment planning cases will take place.

2. Oral Medicine. Principles of general medicine will include special emphasis on the oral manifestation of systemic and emotional diseases and physician dentist inter-relationship. Management of oral lesions will be covered. Seminars with various disciplines participating will be most helpful to the students' understanding of oral medicine, and general principles of medicine. Members of the Department of Medicine of the Faculty of Medicine will participate in the teaching program.

3. Periodontics. Specific diagnosis, prognosis, treatment planning and instrumentation and also therapy of the periodontally involved mouth are covered. Therapeutic measures including temporary splinting, various periodontal surgical procedures, as well as conservative therapy are taught by demonstrations, seminars and clinic experience. Periodontal research is briefly discussed. Training in the removal of the multitude of etiological factors is emphasized. Practical applications of previous principles in previous courses are given.

4. 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 and pathologic 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.

DEPARTMENT OF ORAL SURGERY

1. Oral Surgery. A preliminary course of lectures and demonstrations on the principles of exodontics will be given which will prepare the student for subsequent clinical experience in exodontic procedures.

Following this, a course of lectures in Oral Surgery will commence and continue into the fourth year.
20 hours — Clinic 90 hours

2. General Anaesthesia. During the first and second quarters lectures on the principles of general anaesthesia, emergency procedures and resuscitation will be given.

Practical demonstrations will complement the lectures during the student's clinical experience.
12 hours

3. General Surgery. A core course of lectures on the basic principles of surgery. These are given by the Department of Surgery, Faculty of Medicine.
14 hours

DEPARTMENT OF PAEDIATRIC DENTISTRY

1. Orthodontics. (a) A course of lectures on diagnostic methods and treatment procedures is designed to complement the accompanying clinical experience.
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 dealing with general growth and emotional growth. In addition, the management of the more common clinical problems occurring in children will be included.
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. Restorative Dentistry (Fixed). A series of lectures devoted primarily to the clinical application of various treatment techniques and procedures involved in the management of hard tissue lesions. Particular emphasis is placed on a biological approach to general restorative dentistry. The following topics are considered in detail: esthetic fixed restorations; clinical diagnosis relative to Operative Dentistry; preventive periodontics in restorative procedures; clinical control of dental caries; choice of restoration; occlusion; composite systems and adhesives. Differential diagnosis, treatment techniques and preventive procedures are stressed.
Lectures 40 hours; Laboratory 32 hours

2. Restorative Dentistry (Removable). 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

3. Endodontics. A series of lectures dealing with the etiology, diagnosis and treatment of diseases of the dental pulp and associated structures. Practical clinical procedures, both surgical and non-surgical, are discussed in detail.
Lectures 24 hours

DEPARTMENT OF SOCIAL DENTISTRY

Social Dentistry III

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 utilization of auxiliary personnel.

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. Field visits and exercises to acquaint students with community programs for various groups. The area of preventive dentistry will be further expanded as an extension of material covered in Social Dentistry II.
Total – 48 hours (including field experience)

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 interdepartmental teaching program. Interesting cases are discussed from the standpoint of clinical, radiographic and pathological findings.

Conjoint Occlusion

Weekly interdisciplinary seminars with active student participation including discussion of more advanced problems of occlusion, particularly those with temporomandibular joint involvements; psychological implications in patients with temporomandibular joint problems and their treatment is discussed.

Clinical experience in occlusal equilibration and treatment of temporomandibular joint patients is provided.

DEPARTMENT OF CLINICS

1. Clinical Orientation. A one-week session without assigned patients to familiarize the student with routine clinic procedures and administration and with the operation and maintenance of cubicle equipment.
28 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. The student will also be assigned to the various clinical departments where he will carry out the normal procedures involved and observe the more advanced techniques demonstrated by the instructors.
768 hours

3. Summer Clinic. A continuation of the periods of clinical practice. The student may have the opportunity of concentrating on selected aspects of the treatment services.
162 hours

Fourth Year Curriculum, 1971-1972

DEPARTMENT OF ORAL MEDICINE

A total of 40 lecture hours is combined with 96 hours of clinical and related experience in respect of the disciplines of this department.

1. Oral Diagnosis. Seminars cover the prognosis and more advanced principles for the rationale and outline of treatment plans, identification keys as diagnostic aids, differential diagnosis of oral diseases, and clinical findings in disease.

2. Oral Medicine. A series of seminars will discuss the case management and treatment of specific oral diseases. Included will be therapeutics, geriodontics, nutrition, oral manifestations of diseases of occupational origin, and laboratory aids in dentistry.

3. Periodontics. A series of lectures and seminars devoted to the didactic aspects of management of more advanced Periodontal Disease. It involves discussion of treatment planning, including mucogingival surgery, management of osseous

defects, soft and hard tissue implantation, minor tooth movement and combined periodontal-endodontic problems; also splinting of teeth for periodontic purposes. A discussion of office management of the periodontal phase of practice is included. The students will be encouraged to become involved in periodontal research.
12 hours

Clinical experience and demonstrations re: periodontal patient management, occlusal equilibration, and treatment of TMJ cases.
70 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

A comprehensive course of lectures, seminars and demonstrations will be given on the principles and practice of Oral Surgery.
Lectures 32 hours, Clinic 72 hours

After demonstrating competence in exodontics, students will be allowed to undertake suitable cases of minor oral surgery under local anaesthesia.

Students will assist in the out-patient operating room where oral surgical procedures are carried out under general anaesthesia. A review of emergency procedures, closed heart massage and mouth-to-mouth resuscitation on a manikin will be given.

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

Social Dentistry IV

1. Emergency and Disaster Preparedness. Introduction to principles of emergency medical care and the role of the dentist in emergency and disaster situations which would not be part of the usual dental training.

2. Ethics and 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. 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 efficient physical organization of a dental office, dental office procedures, insurance and investments, etc., as well as the effective utilization of dental auxiliaries.

4. Dental Economics. Discussion of measures which will help and encourage every economic level of society to receive regular dental care. Trends and emerging patterns in types, organization and administration of plans for providing and financing dental services as well as blocks to dental care will be considered.

5. Dental Public Health and Preventive Dentistry. Development of dental public health programs and the role of the private practitioner in community dental programs will be considered. When possible, field experience will be arranged to complement the lecture content. The area of preventive dentistry in private practice and dental public health programs will be discussed.
Total — 40 hours (including field experience)

INTER-DEPARTMENTAL

The program introduced in the Third Year will continue for the second and third quarters of the Fourth Year.
64 hours

Hospital Experience. To enable the future dental practitioner to practise within the hospital environment and to experience the protocol that exists within the hospital in such matters as admitting and discharging of patients; writing of orders; operating room protocol; participation in hospital rounds and clinics; intensive care and resucitation procedures.
60 hours

Conjoint Occlusion. Lectures 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.

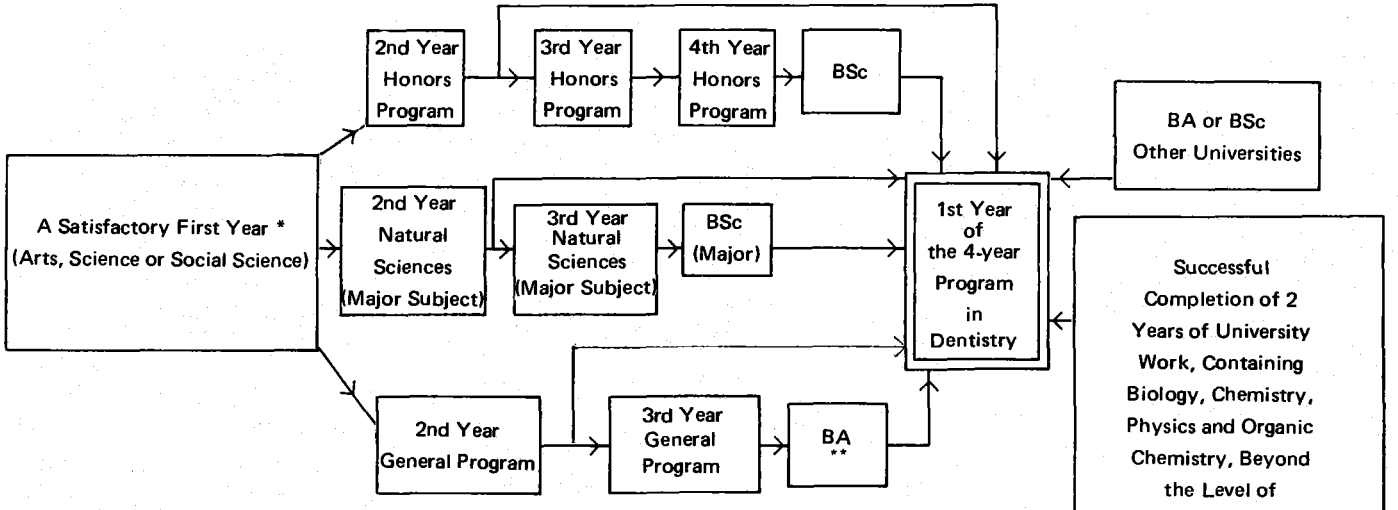
DEPARTMENT OF CLINICS

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.
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.

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.

ACADEMIC PREPARATION FOR ADMISSION



*The University of Western Ontario students who have not completed a degree program must include in their program a minimum of 1 course in Biology, 2 courses in Chemistry including Organic Chemistry 203, 250, 313, 353, or 453, and 1 course in Physics to be eligible to apply for admission to 1st year Dentistry.

**The University of Western Ontario graduates with BA, or BSc, degrees must have demonstrated their ability to succeed in Science courses and must have credit for at least Organic Chemistry to be eligible for admission to 1st year Dentistry.

THE UNIVERSITY OF WESTERN ONTARIO

Faculty of Dentistry

TEXTBOOKS 1971-1972

The decision to purchase or not to purchase any textbook is one to be made by the student. For those textbooks listed under the heading "Assigned" it is expected that rather frequent reference will be made to them and that at least portions of the various courses will be based on the contents of these textbooks.

Unless otherwise indicated it is the latest edition of any textbook which will be employed.

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recommended	Reference
Anatomy							
Genetics	*Genetics in Medicine*	Thompson & Thompson	Saunders	1		X	
Gross	Essentials of Human Anatomy	Woodburne	Oxford Univ. Press	1		X	
	Oral Anatomy	Sicher	Mosby	1		X	
	Atlas of Anatomy	Grant	Williams & Wilkins	1		X	
	Medical Embryology	Langman	Williams & Wilkins	1		X	
Histology	Histology	Ham	Lippincott	1		X	
	Histology	Leeson & Leeson	Saunders	1		X	
	Textbook of Histology	Bloom & Fawcett	Saunders	1		X	
	Oral Histology & Embryology	Sicher	Mosby	1	X		
Neuro-Anatomy	The Neural Basis of Human Behavior	Barr	UWO (Watt Letter Service)	1		X	
Bacteriology							
	Oral Microbiology and Infectious Disease	Burnett & Scherp	Williams & Wilkins	2	X		
	Review of Medical Microbiology	Jawetz, Adelberg, Melnick	Lange	2		X	
	Oral Microbiology	Nolte	Mosby	2		X	

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recommended	Reference
Biochemistry							
	Principles of Biochemistry	White, Handler & Smith	McGraw-Hill	1,2	X		
	Dental Biochemistry	Lazzari	Lea & Febiger	1,2	X		
	Outlines of Biochemistry	Conn & Stumpf	Wiley	1		X	
	Biochemistry	Orton & Newhause	Mosby	1		X	
	Textbook of Biochemistry	Harrow & Mazur	Saunders	1		X	
	Review of Physiological Chemistry	Harper	Lange	1		X	
	Molecular Insights into Living Processes	Green & Goldberger	Academic	1		X	
	Introduction to Modern Biochemistry	Karlson	Academic Press	1			X
	Textbook of Biochemistry	West & Todd	MacMillan	1			X
	Diseases of Metabolism	Duncan	Saunders	1			X
	Metabolic Basis of Inherited Disease	Stanbury, Wyngaarden & Fredrickson	McGraw-Hill	1			X
	Biological Chemistry	Mahler & Cordes	Harper & Row	1			X
	Basic Biological Chemistry	Mahler & Cordes	Harper & Row	1			X
	Hawk's Physiological Chemistry	Oser	McGraw-Hill	1			Lab.
	Experimental Biochemistry	Clark	Freeman	1			Lab.
	Laboratory Instructions in Biochemistry	Kleiner & Dotti	Mosby	1			Lab.

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recommended	Reference
Oral Medicine							
Oral Diagnosis	Oral Diagnosis	Kerr, Ash & Millard	Mosby	1,2,3,4	X		
	Synopsis of Oral Pathology	Bhaskar	Mosby	1,2,3,4	X		
Oral Medicine	Accepted Dental Therapeutics		Amer. Dent Assoc	3,4		X	
	Oral Medicine	Burket	Lippincott	2,3,4	X		
	Internal Medicine in Practice	Collins & Crane	Lea & Febiger	3,4	X		
Perio-dontics	Clinical Periodontics	Glickman	Saunders	3,4		X	
	Orban's Periodontics	Grant, Stern Everett	Mosby	3,4		X	
	Periodontal Therapy	Goldman & Cohen	Mosby	1,2,3,4	X		
	The Science of Nutrition and Its Application to Clinical Dentistry	Nizel	Saunders	1,2,3,4		X	
Radiology							
	Principles and Practice of Oral Radiologic Interpretation	Worth	Year Book Med, Publish (Wiley)	2,3,4		X	
	Oral Roentgenographic Diagnosis	Stafne	Saunders	2,3,4			X
Oral Surgery							
Anaesthesia	Local Anaesthesia and Pain Control in Dental Practice	Monheim	Mosby	2	X		
Oral Surgery	The Extraction of Teeth	Howe	Macmillan	3,4	X		
	Minor Oral Surgery	Howe	Macmillan	3,4	X		
	Oral Surgery	Kruger	Mosby	3,4		X	
	The Impacted Wisdom Tooth	Killey & Kay	Livingstone	3,4			X
	Benign Cystic Lesions of the Jaw	Killey & Kay	Livingstone	3,4			X
Hospitals	A Guide to Hospital Dental Procedure		Amer. Dental Assoc.	4	X		

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recommended	Reference
Paediatric Dentistry							
Orthodontics	Handbook of Orthodontics	Moyers	Year Book Med. Publish	1,3,4,	X		
Paedodontics	Dentistry for the Child and Adolescent	McDonald	Mosby	3,4	X		
Pathology							
	Pathology	Robbins	Saunders	2		X	
	A Textbook of Oral Pathology	Shafer, Hine & Levy	Saunders	2	X		
Pharmacology							
	Medical Pharmacology	Goth	Mosby	2		X	
	The Pharmacological Basis of Therapeutics	Goodman & Gilman	Macmillan	2		X	
	A Handbook of Dental Pharmacology and Therapeutics	Goulding	Heinmann	2			X
	Dental Pharmacology and Therapeutics	Francis & Wood	Saunders	2			X
	Drug Therapy for Dentists	Dille	Year Book (Wiley)	2			X
	Pharmacology and Oral Therapeutics	Dobbs	Kimpton				X
	Pharmacotherapeutics of Oral Disease	Kutscher, Zegarelli & Hyman	McGraw-Hill	2			X
Physiology							
	Review of Medical Physiology	Ganong	Lange	1	X		
	Paperback Series	Comroe, Davenport, Burton, Pitts, Tepperman	Year Book Med. Publish	1		X	
	An Introduction to Human Physiology	Green	Oxford Medical Publications	1		X	
	The Physiology of the Mouth	Jenkins	Blackwell Sci.	2	X		

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recommended	Reference
Restorative Dentistry							
Dental Materials Science	*Restorative Dental Materials*	Peyton	Mosby	1,2,3,	X		
	Dental Materials: A Programmed Review of Selected Topics	O'Brien & Ryge	Saunders	1		X	
	The Science of Dental Materials	Skinner & Phillips	Saunders	1,2,3,			X
Fixed Prosthodontics	Introduction to Occlusal Anatomy	Lundeen	Lundeen	1	X		
	Practical Crown and Bridge Prosthodontics	Wilson & Lang	McGraw-Hill	1,2,3,4	X		
	Modern Practice in Dental Ceramics	Johnston Mumford & Dykema	Saunders	2,3,4	X		
Operative Dentistry	Cavity Preparation for Elementary Operative Dentistry Technique	Stibbs	Univ. of Washington Press	1		X	
	Textbook of Operative Dentistry	Gilmore	Mosby	2,3,4	X	X	
	The Art and Science of Operative Dentistry	Sturdevant	McGraw-Hill	1,2,3,4		X	
Endodontics	Endodontics	Ingle	Lea & Febiger	3,4	X		
Removable Prosthodontics	Swenson's Complete Dentures	Boucher	Mosby	2,3,4	X		
	Partial Denture Construction	McCracken	Mosby	2,3,4	X		
Social Dentistry							
	The Story of Dentistry	Bremner	Dental Items of Interest Pub. Co. (Henry Kimpton)	1			X
	The Dentist, His Practice and His Community	Young & Striffler	W.B. Saunders Company	2,3		X	

	Title of Text	Author(s)	Publisher	Year(s) Applic.	Assigned (see note above)	Recom-mended	Reference
	Principles of Dental Public Health	Dunning	Harvard Univ. Press	3,4		X	
	Dental Jurisprudence	Sarner	Saunders	3,4		X	
	Dental Practice Management	Stinaff	Mosby	4		X	
Inter-Departmental							
Occlusion	Dental Anatomy & Occlusion	Kraus, Jordan Abrahams	Williams & Wilkins	1		X	
	Introduction to Occlusal Anatomy (also in Rest. Dent'y)	Lundeen	Lundeen	1		X	
	Physiology of Occlusion and Rehabilitation	Posselt	Blackwell	1,2,3,4	X		
	Occlusion	Ramfjord	Saunders	2,3,4	X		
	A Textbook of Dental Anatomy and Physiology	Wheeler	Saunders	1	X		
General	The Scientific Bases of Dentistry	Shapiro (Ed)	Saunders	1,2,3,4		X	
	Review of Dentistry	Hine (Ed)	Mosby	1,2,3,4			X

Members of the Faculty of Dentistry

Dean of the Faculty

Dunn, W.J., DDS *Toronto;* FACD

Director of Clinics

Baird, K.M., OBE, CD; DDS *Toronto;* FICD

DEPARTMENT OF ANATOMY

Professors

Barr, M.L., SM, BA, MSc, LLD *Queen's, Toronto, Alberta and Dalhousie;* MD *UWO;* Dr med hc *Basel;* FRCP(C), FACP, FRSC

Buck, R.C., MSc, PhD *London;* MD *UWO.* Chairman of the Department

Hoshino, K., MD, DMedSc *Tokyo*

Montemurro, D.G., BA, MSc, PhD *UWO*

Associate Professors

Gwinnett, A.J., LDS, RCS(Eng); BDS *Birmingham;* PhD *Bristol*

Gwyn, D.G., MRCS(Eng); LRCP, MBBS *London;* PhD *Birmingham*

Hollenberg, M.J., BSc(Med), MD *Manitoba;* MSc, PhD *Wayne State*

Soltan, H.C., BA, PhD *Toronto;* MD *UWO* (Human Genetics)

Wilson, A.S., MB, ChB, MD *Glasgow*

Assistant Professors

Altmann, G.G., BSc *Dalhousie;* MSc, PhD *McGill*

Donisch, E.W.K.F., MD *Bonn;* MSc *UWO*

Gammal, E.B., MB, Bch *Cairo;* PhD *UWO*

Sergovich, F.R., BA *McMaster;* PhD *UWO*

Shaver, Evelyn L., BSc, MSc, PhD *UWO*

Singh, R.P., BA, MSc, PhD *UWO*

Honorary Lecturers

Robinow, C.F., MD *Hamburg;* FRSC

Walden, D.B., BA *Wesleyan;* MSc, PhD *Cornell*

Lecturers

Clattenburg, R.E., BSc, MSc *Acadia*

Cline, Aileen, MD *UWO*

Instructors

Goldberg, A.H., MBBS *Dublin;* LRCPI, LRCSI

Jory, T.A., MD *UWO;* FRCS(C), FASC

Leyshon, G.A., MS *Illinois;* BA *UWO*

Warma, S.K., MBBS *Calcutta;* FRCS(Eng); CRCS(C), FACS

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Professors

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

Murray, R.G.E., BA, MA *Cantab;* MDCM *McGill;* FRSC. Head of the Department

Robinow, C.F., MD *Hamburg;* FRSC

Associate Professors

Ebisuzaki, K., MS, PhD *Wisconsin;* BSc *UWO*

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*

Assistant Professors

Cheevers, W.P., BA *Colorado;* PhD *Mississippi*

Rozanis, J., MSc *Hebrew University, Jerusalem;* PhD *McGill*

Sinclair, N.R.S., BSc, MD, PhD *Dalhousie*

Singhal, S.K., BSc *Arga, India;* PhD *McGill*

Strejan, G.H., MSc *Romania;* PhD *Hebrew University, Jerusalem*

Wilkins, P.O.B., MS, MB *Hawaii;* PhD *Penn.*

Clinical Professor

Hatch, L.A., MBBS, DipBact&Immun. *London;* FCPath

Clinical Associate Professor

Bakerspigel, A., BA, MA *McMaster;* PhD *UWO*

Clinical Assistant Professor

Campsall, E.W.R., BA *Queen's;* MDCM *McGill*

Honorary Lecturers

Chodirker, W.B., BSc(Med), MD *Manitoba*

Hannay, C.L., BSA *Toronto;* DIC, PhD *London*

Roslycky, E.B., BSc, MSc *Manitoba;* PhD *Wisconsin*

Toogood, J.H., MD *Toronto;* DipIntMed *McGill;* FRCP(C)

Clinical Lecturer

Black, W.A., MB, ChB *Glasgow;* MRCPath

Instructor

Galsworthy, Sarah B., BA *Pamona;* PhD *Wisconsin*

DEPARTMENT OF BIOCHEMISTRY

Professors

Bigelow, C.C., BASc *Toronto;* MSc, PhD *McMaster*

Carroll, K.K., BSc, MSc *New Brunswick;* MA *Toronto;* PhD *UWO*

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

McCarter, J.A., BA, MA *British Columbia;* PhD *Toronto;* FRSC

McMurray, W.C., BSc, PhD *UWO*

Rossiter, R.J., BSc *W.Aust.;* BA, MA, DPhil, BM, BCh, DM *Oxon;* FRIC(Eng); FRSC

Smith, D.B., BA, MA *British Columbia;* PhD *Toronto*

Stewart, H.B., MD, PhD *Toronto;* PhD *Cantab.* Head of the Department

Strickland, K.P., BSc, MSc, PhD *UWO*

Associate Professors

Ball, Judith K., BSc *Mount Allison;* MSc, PhD *Dalhousie*

Heagy, F.C., MD, MSc, PhD *UWO*

Magee, W.L., BSc, MSc, PhD *UWO*

Walker, I.G., BA *Saskatchewan;* MA, PhD *Toronto*

Webling, D.D., BSc, MBBS, PhD *Adelaide;* DTM&H *Sydney*

Assistant Professors

Cook, R.A., BSc, MSc, PhD *Manitoba*

Donisch, Valentine, MD *Bonn;* PhD *UWO*

Galsworthy, P.R., BSc *Queen's;* PhD *Wisconsin*

Gatfield, P.D., MD *Queen's*

Gordon, B.A., MDCM, MSc, PhD *Queen's*

Guthrie, J.P., PhD *Harvard;* BSc *UWO*

Haines, D.S.M., PhD *Toronto;* BA, MD *UWO*

Trevithick, J.R., BSc *Queen's;* PhD *Wisconsin*

Honorary Lecturers

Chefurka, W., BSc *Manitoba;* MSc *Montana State;* PhD *Harvard*

Hudson, A.J., MD, BSc *Toronto;* FRCP(C)

Krupka, R.M., MA *Saskatchewan;* PhD *McGill*

Spencer, E.Y., BSc, MSc *Alberta;* PhD *Toronto;* FCIC

DEPARTMENT OF ORAL MEDICINE

Professor

Moore, D.S., DDS, DipPerio *Toronto;* FRCD(C) Chairman of the Department

Associate Professor

Zulqar-nain, B.J., BDS *Panjab;* MS, CertPerio *Rochester;* CertDPH *Harvard*

Assistant Professors

Kogon, S.L., DDS *Toronto*

Reid, J.A., DDS *Toronto. Acting Chairman of Division of Radiology*

Petersen, K.B., DDS, LDS *Copenhagen*

Clinical Lecturers

Cappa, C.F., BA, DDS *Toronto*

Jack, R.N., DDS DipPerio *Toronto;* FRCD(C)

Klein, W.C., DDS *Toronto*

Pellow, W.R., BA *Queen's;* DDS *Toronto*

Thompson, E.S., DDS *Toronto*

Wainwright, R.J., DDS *Toronto*

Whitman, C.S., BSc, DDS *McGill;* DipPerio *Toronto;* FRCD(C). Acting Chairman of Division of Periodontology

Wright, K.H., DDS, B.Comm. *McGill;* DipPerio *Toronto*

Instructors

Beam, L., DDS *Toronto*

Cornish, Eleanor, BA *UWO;* DDS *Toronto;* DipPerio *New York*

Hunter, J.K., DDS *Toronto*

Morris, R.W., DDS *Toronto*

Whiteman, D.E., DDS *Toronto*

DEPARTMENT OF ORAL SURGERY

Professor

Parnell, A.G., LDS, RCS *(Eng);* FDS, RCS *(Eng).* Chairman of the Department

Associate Professor

Schofield, I.D.F., DDS, DipOS&Anaes *Toronto;* BA *UWO;* FRCD(C)

Clinical Lecturer

Glennie, G.D., MBBS *London;* DA *McGill;* MRCS *(Eng);* LRCP *(London);* CRCP(C)

Instructor

McFarlane, N.A., DDS *Toronto;* BA *UWO*

DEPARTMENT OF PAEDIATRIC DENTISTRY

Professors

Eastwood, A.W., DDS *Dalhousie;* BDS *Liverpool;* MS(Ortho) *Michigan*

Feasby, W.H., DDS, DipPaed *Toronto;* FRCD(C). Chairman of the Department

Hunter, W.S., DDS *Toronto;* MS, PhD *Michigan.* Chairman of Division of Orthodontics

Assistant Professor

Wright, G.Z. BSc *Manitoba;* DDS *Toronto;* MSD *Indiana*

Clinical Lecturers

Parrott, H.C., DDS, DipOrth *Toronto*

Scott, R.L., DDS, DipPaed *Toronto;* FRCD(C)

Instructors

Campbell, D.A., DDS, DipOrth *Toronto*

Frey, G.C., DDS *Toronto*

King, D.A., BSc, DDS *Alberta;* MS *Rochester*

Smith, B.R.W., DDS, DipOrth *Toronto*

Way, D.C., DDS *Toronto;* MS *Michigan;* FRCD(C)

DEPARTMENT OF PATHOLOGY

Professors

Haust, M. Daria, MD *Heidelberg;* MSc *Queen's;* CRCP(C)

Paterson, J.C., OBE; MD, BSc(Med) *Toronto*

Wallace, A.C., BA, MD *UWO;* FACP, CRCP(C). Head of the Department

Associate Professors

Frei, J.V., MDCM *Queen's;* MSc, PhD *McGill;* CRCP(C)

Gardner, D.G., DDS *Toronto;* MSD *Indiana.* Chairman of Division of Oral Pathology

Warren, B.A., BSc(Med), MBBS *Sydney;* DPhil, MA *Oxford*

Assistant Professors

Jones, D.S., BA *Albion College;* MS *Michigan State;* PhD *UWO*

Lewis, F.N., BA, MD *UWO;* MCPath, CRCP(C)

Sapp, J.P., DDS *Dalhousie;* MS *Michigan*

Clinical Professors

Mills, D.M., BA, MD *UWO;* CRCP(C)

Smout, M.S., MD *UWO;* MCPath, FCAP

Clinical Associate Professor

Vigneault, M., BA *Sudbury;* MD *Laval;* FRCP(C)

Clinical Assistant Professors

Abdelnour, G.M., MB, ChB *Alexandria, Egypt;* CRCP(C)

Ball, M.J., MD *Toronto;* CRCP(C)

Davies, Eleanor M., MD *Toronto;* CRCP(C)

Enriquez, A.A., MD *Santo Tomas;* CRCP(C)

Saeed, I.R., MB, BCh, DMScPath, MDPath *Cairo;* FRCP(C)

Slinger, R.P., BA, MD *Toronto;* MCPath; CRCP(C)

Turnbull, D.I., BSc, MDCM *McGill*

Clinical Lecturer

Gursel, S., MD *Ankara;* MSc *Ohio State*

Instructors

Adilman, H.B., BA *Saskatchewan;* MD *Alberta;* CRCP(C)

Bell, J.H., DDS *Toronto*

Dietrich, M., MD *UWO;* CRCP(C)

Frishette, W.A., MD *UWO;* CRCP(C)

DEPARTMENT OF PHARMACOLOGY

Professors

Gowdey, C.W., BA, MSc, DPhil *Oxon.* Head of the Department

Parker, J.M., MD *Manitoba;* DPH, PhD *Toronto*

Associate Professors

Colhoun, E.H., BSA *Toronto;* PhD *Cantab*

Hamilton, J.T., BSc, PhD *Edinburgh*

Philp, R.B., DVM *Toronto;* PhD *UWO*

Assistant Professors

Hersey, M.L.W., BSc *McGill;* MD, PhD *UWO;* CRCP(C), FACA

Hirst, M., BSc, PhD *Liverpool;* PhD *UWO*

Honorary 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)

Instructors

Dinel, B., BScPhm *Toronto;* MSc *Ohio State*

White, D.F., MD *UWO;* FRCP(C)

DEPARTMENT OF PHYSIOLOGY

Professors

Armstrong, D.T., BSA *Toronto;* MS, PhD *Cornell*

Mogenson, G.J., BA, MA *Saskatchewan;* PhD *McGill.* Acting Chairman of the Department

Stevenson, J.A.F., BA, MA, MDCM *McGill;* FRSC

Associate Professors

Bondy, D.C., MD *UWO;* FRCP(C)

Calaresu, F.R., BA *Pavia;* MD *Milan;* PhD *Alberta*

Critz, J.B., BSEd, MA, PhD *Missouri*

Dellow, P.G., BDS, MBBS *Adelaide;* FACDS

Harding, P.G.R., MD, MSc *UWO;* FRCS(C)

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, PhD *McGill*

Assistant Professors

Cunningham, D.A., MSc *Alberta;* PhD *Michigan;* BA *UWO*

Girvin, J.P., PhD *McGill;* MD *UWO;* FRCS(C)

O'Hea, E.K., BAgrSc, MAgrSc *Dublin;* PhD *Illinois*

Stewart, D.J., BSc *British Columbia;* PhD *California*

Ziegler, W.H., MD *British Columbia;* MSc *Drexel Inst. of Tech.*

Honorary Lecturers

Chess, G.F.H., BASc *Toronto;* MEng *McGill*

Hart, J.S., BA, MA, PhD *Toronto;* FRSC

Hinton, G.G., BSc, MDCM *McGill;* DCh, FRCP(C)

Manning, G.W., MA, MD, PhD *Toronto;* FRCP(C)

Rounthwaite, F.J., BSc, MDCM *McGill;* FRCS(C), FACS

Steele, J.E., BSc *Dalhousie;* MSc *UWO;* PhD *Saskatchewan*

Lecturers (sessional)

Reese, L., MDCM *Queen's;* FRCS(C), FACS

Sellery, G.R., MD, DA *Toronto;* DA *England;* FRCP(C)

Instructors

Walker, Esme H., BA, MA *Toronto*

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Professor

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Johnson, L.N., BS *Pacific;* MS *Oregon;* PhD *Michigan.* Chairman of Division of Dental Materials Science

Ryan, J.E., DDS *Washington;* MSc *Ohio.* Chairman of Division of Removable Prosthodontics

Skinner, D.H., DDS *Toronto*

Teteruck, W.R., BSc, DDS *McGill;* MSD *Indiana.* Chairman of Division of Fixed Prosthodontics

Assistant Professors

Suzuki, M., DDS *Tokyo;* MS *Rochester;* DMD *Manitoba*

Bunston, H.G., DDS *McGill*

Visiting Assistant Professor

Goto, G., DDS, DDentSc *Tokyo*

Clinical Associate Professor

Guest, J.A., DDS *Toronto*

Clinical Assistant Professors

Bedrosian, G.A., DDS *Toronto;* BSA *Guelph*

Walker, W.J., DDS *Toronto*

Clinical Lecturer

Taylor, L.V., DDS *Toronto*

Instructors

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Gratton, D.R., DDS *Toronto*

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Reddon, J., DDS *McGill*

Sears, G.M., DDS *Dalhousie*

Seneshen, M.J., BSc (Chem.Eng), *DDS* Alberta

Setterington, K.R.P., DDS *Toronto*

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Associate Professors

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Dunn, W.J., DDS *Toronto;* FACD

Martinello, B.P., DDS, DDPH *Toronto.* Chairman of the Department

Assistant Professors

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Smith, J.M., CD; DDS *Toronto*

Instructors

Currie, P.E., DDS *Toronto*

Leake, J.L., DDS, DDPH *Toronto*

McKay, W.H., DDS *Toronto*

McParland, S.J., DDS, BSc *McGill*

Nordine, M.C., DDS *Toronto;* BA *Saskatchewan*

Faculty of Engineering Science

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Secretary of the Faculty: W.H. Davis, BASc, PEng

Student Services Officer: W.H. Peacock, BASc, MASc, PhD, PEng

Group Chairmen

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Civil Engineering: M.P. Poucher, BSc, MSc, DIC, PEng

Electrical Engineering: I.I. Inculet, Dipl Ing. MSc, PEng

Materials Science: J.D. Brown, BSc, PhD

Mechanical Engineering: J.E.K. Foreman, BASc, MME, PEng

Core Studies: G.S. Emmerson, BSc, ARCST, MSc, PEng

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D.C. Williams, President and Vice Chancellor, The University of Western Ontario.

W.A. Woodcock, Chief Engineer, General Motors of Canada Ltd., Oshawa.

Engineering Science Curriculum

This program is subject to changes introduced after the publication of this Calendar.

Core Studies

One of the consequences of the growth of Engineering Science has been the tendency to recognize certain specific streams of special interest to engineers which have hitherto fallen under the general headings of Civil, Chemical, Electrical, Materials, and Mechanical. None of these streams is completely isolated; they not only emerge from a common heritage but flow in contact and overlap one with the other.

The common source and the common currents form what is called the "core" at Western. This embraces in total the first two years of the four-year program, and extends into the later years. In practical terms it means that all Engineering Science students study the same subjects in the first two years of their course. A slight exception has had to be made in the case of those intending to specialize in Chemical Engineering.

Otherwise, our students do not choose a field of specialization until they enter third year, by which time, it is hoped, they shall have a better idea of what their tastes and aptitudes are. The First Year Engineering Science program is compatible with the First Year Natural Science enabling students to proceed in another program without loss of time.

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.

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, P. Eng., 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 Associations of the various provinces.

FIRST YEAR PROGRAM

		Hours/Week	
		Lecture	Laboratory/ Tutorial
Applied Math. 20	Engineering Mathematics 1	3	2
Chemistry 20	General Chemistry	2	3
E.S. 20	Engineering Graphics	1	3
E.S. 21	Engineering Mechanics 1	2	3
Physics 26	Introductory Modern Physics	2	3
One elective course		3	0

Notes: (i) One hour per week time tabled for Engineering Orientation.

(ii) Students may elect to defer E.S. 20 and take it as an extra course in Second Year.

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 – 2

E.S. 21. Engineering Mechanics I. 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 – 8

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 – 25

Appl. Math. 20. Engineering Mathematics I. 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.
– 29

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 – 22

SECOND YEAR PROGRAM

All Second Year Students		Hours/Week Lecture	Laboratory/ Tutorial
E.S. 20	Engineering Graphics (if not taken previously)	1	3
E.S. 203	Heat, Mass and Momentum Transfer	2	0
E.S. 205	Electrical Science	3	0
E.S. 208	Computer Programming for Engineers	1	0
E.S. 210	Engineering Laboratory	0	3
Appl. Math. 270	Engineering Mathematics II	3	0
	Option A – Chemical & Biochemical Engineering		
E.S. 204	Applied Thermodynamics	2	0
Chem. 213	Organic Chemistry	2	1½
Chem. 214	Elementary Physical Chemistry	3	0
and ONE of:			
E.S. 201	Engineering Mechanics II	2	3
E.S. 202	Mechanics of Materials I	2	0
E.S. 209	Materials Science	2	0
Biol. 21	Biology	2	2
Biol. 22	Biology	2	3
Botany 20	Introductory Botany	2	3
	Option D – Materials Science		
E.S. 202	Mechanics of Materials I	2	0
E.S. 209	Materials Science	2	0
and TWO of:			
Chemistry 213	Organic Chemistry	2	1½
Chemistry 214	Elementary Physical Chemistry	3	0
E.S. 201	Engineering Mechanics II	2	3
E.S. 204	Applied Thermodynamics	2	0
	Options B, C and E Civil, Electrical and Mechanical		
E.S. 201	Engineering Mechanics II	2	3
E.S. 202	Mechanics of Materials I	2	0
E.S. 204	Applied Thermodynamics	2	0
E.S. 209	Materials Science	2	0

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, 2 problem hours – 6

E.S. 202. Mechanics of Materials I. Stress and strain, elastic and inelastic material idealizations, behavior 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 – 30

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 – 25

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, 0 laboratory 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 – 35

E.S. 208. Computer Programming for Engineers. An elementary course in Fortran programming for the IBM 1130.
1 lecture 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 – 13

Chem. 211. Principles of Inorganic Chemistry. Inorganic Chemistry: A survey of the principles necessary to an understanding of atomic structure and the forces between atoms, and methods used in their study. Some aspects of chemical reactions in a variety of solvent media, coordination compounds, and a systematic study of the reactions and compounds of some of the elements.
2 lecture, 3 laboratory hours – 6

Chem. 213. Organic Chemistry.
2 lecture hours, 1½ laboratory hours–23

Chem. 214. Elementary Physical Chemistry. Kinetic theory and elementary thermodynamics.
3 lecture hours – 12

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 – 20

E.S. 210. Engineering Laboratory. Selected Experiments in Engineering Science.
3 laboratory hours

Biol. 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.
2 lecture hours, 2 laboratory hours – 7

Biol. 22. Biology. The fundamental principles of biology stressing the features common to all living organisms.
2 lecture hours, 3 laboratory hours – 8

Botany 20. Introductory Botany. General principles of botany.
2 lecture hours, 3 laboratory hours – 16

Chemical and Biochemical Engineering Option

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

		Hours/Week	
		Lecture	Laboratory/ Problem
E.S. 303	Fluid Mechanics (1st term)	2	0
E.S. 306	Electromechanics I (1st term)	2	0
E.S. 307	*Heat Transfer* (2nd term)	2	0
E.S. 305	Electronics (2nd term)	2	0
E.S. 310	Chemical Engineering Laboratory I	0	6
E.S. 311	Unit Operations I	2	0
E.S. 312	Industrial Process Chemistry	2	0
Appl. Math.370	Engineering Mathematics III	3	0
Chem. 313	Elementary Organic Chemistry	2	1½A*
Chem. 314	Intermediate Physical Chemistry	3	1½A
Humanities or Social Sciences Elective		3	0

"Any student may replace the Humanities or Social Science Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

*1½A indicates a 3-hour laboratory period on alternate weeks.

DESCRIPTION OF COURSES

E.S. 303. 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. 305. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term — 17

E.S. 306. Electromechanics. Characteristics and applications of dc generators and motors, ac power generation and transmission; ac motors; transformers.
2 lecture hours, first term

E.S. 307. Heat Transfer. Principles of heat transmission by conduction, convection and radiation.
2 lecture hours, second term — 3

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 process.
2 lecture hours — 36

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 — 11

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 solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, elementary probability theory, Fourier series.
3 lecture hours — 26

Chem. 313. Elementary Organic Chemistry. For Chemical Engineering students. Content similar to Chemistry 203.
2 lecture, 1½ laboratory hours — 23

Chem. 314. Intermediate Physical Chemistry. For Chemical Engineering students. Content similar to Chemistry 354.
3 lecture, 1½ laboratory hours — 7

FOURTH YEAR PROGRAM — OPTION A — CHEMICAL AND BIOCHEMICAL ENGINEERING		Hours/Week Lecture	Laboratory/ Problem
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 410	Chemical Engineering Laboratory II	0	3
E.S. 411	Unit Operations II	3	0
E.S. 412	Chemical Processes and Plant Design	2	3
E.S. 414	Instrumentation and Control	2	0
E.S. 415	Chemical Engineering Kinetics	2	0
and "Any two full courses or the equivalent chosen with the approval of the Chairman of the Undergraduate Division of the Executive Committee." chosen from Humanities or Social Sciences Elective, E.S. 300, 400 or 500 courses, or Faculty of Science 3rd or 4th year courses.		4/6	0/6

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.
2 lecture hours, second term — 17

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 — 7

E.S. 412. Chemical Process and Plant Design. A preliminary design is prepared of a process for making a selected chemical. This involves: size of the market; method of manufacture; raw materials and energy required; selection, size and cost of equipment; and evaluation of the profitability of the proposed venture. In this way an integrated application is achieved of economics and the principles of chemical engineering.
2 lecture, 3 problem hours

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 reactions, as well as the conditions under which they are to be operated for maximum efficiency.
2 lecture hours — 25

E.S. 414. Instrumentation and Control. Theory and application of automatic control of variables in industrial processes.
2 lecture hours — 21

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 laboratory 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 — 33

E.S. 418. Fluidized Bed Processes. Principles and operations of fluidized bed processes.
2 lecture hours per week for one term. — 14

Civil Engineering Option

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 buildings. 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

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THIRD YEAR PROGRAM — OPTION B — CIVIL ENGINEERING		Hours/Week Lecture	Laboratory/ Problem
E.S. 302	Mechanics of Materials II	2	0
E.S. 320	Civil Engineering Laboratory	0	6
E.S. 321	Structural Theory I	2	0
E.S. 322	Structural Design I	2	3
Appl. Math. 370	Engineering Mathematics III	3	0
E.S. 324	Surveying (2 weeks in Fall)		
E.S. 303	Fluid Mechanics (1st term)	2	0
Geol. 391	Geology for Engineers (1st term)	2	3
E.S. 323	Engineering Fluid Mechanics (2nd term)	2	0
E.S. 327	Soil Mechanics I (2nd term)	2	0
Humanities or Social Sciences Elective and TWO of:		3	0
E.S. 306	Electromechanics (1st term)	2	0
E.S. 305	Electronics (2nd term)	2	0
Appl. Math. 403b	403b (2nd term)	3	0

"Any student may replace the Humanities or Social Sciences Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

has been a widening application of other fields such as geophysics, geography and biology to Civil Engineering in recent years in an attack on the major 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 or mathematics.

Students intending to register for 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.

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 – 23

E.S. 303. 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. 305. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term – 17

E.S. 306. 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 – 36

E.S. 322 Structural Design 1. An introduction to structural engineering design including the use of manufactured and natural materials.
1 lecture hours, 3 laboratory hours – 31

E.S. 323. 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. 327. Soil Mechanics 1. Principles of particulate mechanics in relation to the properties of soils and rocks used as engineering materials and as load carrying strata. Introductory course emphasizing the principles of soil mechanics.
2 lecture hours, second term

Geol. 391. 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 laboratory 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, elementary probability theory, Fourier series.
3 lecture hours – 26

FOURTH YEAR PROGRAM – OPTION B – CIVIL ENGINEERING		Hours/Week Lecture	Laboratory/ Problem
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 421	Structural Theory II	2	0
E.S. 422	Structural Design II	1	3
E.S. 423	Engineering Hydraulics	2	0
E.S. 426	Soil Mechanics	2	0
E.S. 420	Civil Engineering Laboratory II	0	8
and			
"Any two full courses or the equivalent chosen with the approval of the Chairman of the Undergraduate Division of the Executive Committee."			
It is recommended that at least one of the following be taken.			
Appl. Math. 453	(With the approval of the instructor)	3	0
Appl. Math. 470	Engineering Mathematics IV	3	0
E.S. 425	Transportation Engineering	2	0
E.S. 427	Science of Structures	2	0

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 – 7

E.S. 422. Structural Design II. Design methods applied to reinforced concrete, steel and other structural media leading to design of a complete structural project.
2 lecture hours – 7

E.S. 423. Engineering Hydraulics. The fundamentals of hydraulics associated with hydrology, channel flow, sediment transport and flow through pipe networks.
2 lecture hours – 11

E.S. 425. Transportation Engineering. Planning, design and construction of highways and other transportation systems.
2 lecture hours – 25

E.S. 426. Soil Mechanics. Characteristics of soil particles with geological origin and textural classification. Investigation of soils with respect to structure, moisture content, void ratio, Attenberg limits, specific gravity, relative density, sensitivity, permeability, compaction, and stabilization. Analysis of bearing capacity, shear strength, settlement and unretained earth slopes. Design of spread foundations, pile foundations, and retaining walls.
2 lecture hours – 21

E.S. 427. 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 sufficiency of structures in relation to the actual loads imposed on them.
2 lecture hours – 25

E.S. 420. Civil Engineering Laboratory II. A combined laboratory period associated with E.S. 421, 423, 425 and 426.
8 laboratory hours

Appl. Math. 470. Engineering Mathematics IV. A sequel to Applied Mathematics 370 including the following topics. First Term: Vector calculus, ordinary linear differential equations with variable coefficients, orthogonal function expansions, introduction to partial differential equations. Second Term: Random variables and probability distributions, sample theory, statistical estimations, confidence intervals, curve fitting, experimental design.
3 lecture hours – 24

Electrical Engineering Option

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 behavior 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, 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

		Hours/Week	
		Lecture	Laboratory/ Problem
E.S. 451	Electronic Structures and Properties of Materials	3	0
E.S. 330	Electrical Engineering Laboratory I	0	8
E.S. 331	Electric Circuits	3	0
E.S. 332	Semiconductor Electronics	2	0
E.S. 333	Electromagnetic Field Theory	2	0
E.S. 334	Electrical Energy Conversion	2	0
Appl. Math 370	Engineering Mathematics III	2	0
Humanities or Social Sciences Elective		3	0

"Any student may replace the Humanities or Social Science Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

DESCRIPTION OF COURSES

E.S. 330. Electrical Engineering Laboratory I. 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, – 36

E.S. 332. Semiconductor Electronics. An introduction to semiconductor physics with applications to the circuit behavior of semiconductor diodes and transistors.
2 lecture hours – 23

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. Propagation of plane EM waves.
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 – 31

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, elementary probability theory, Fourier series.
3 lecture hours –26

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 – 2

FOURTH YEAR PROGRAM – OPTION C – ELECTRICAL ENGINEERING

		Hours/Week	
		Lecture	Laboratory
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 430	Electrical Engineering Laboratory II	0	9
E.S. 431	Digital Logic Systems	2	0
E.S. 433	Electric Power Systems	2	0
E.S. 436	Control Systems	2	0
E.S. 432a.	Radiation and Propagation (1st term)	2	0
E.S. 434a.	Electromechanical Energy Conversion (1st term)	2	0
E.S. 435a.	High Frequency Electronics (1st term)	2	0
E.S. 432b.	Microwave Systems (2nd term)	2	0
E.S. 434b.	Electrical Energy Conversion (2nd term)	3	0
E.S. 435b.	Communication Theory (2nd term)	2	0
Humanities or Social Sciences Elective		3	0

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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 II. 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. (1st term)
2 lecture hours

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. (2nd term)
2 lecture hours

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 – 7

E.S. 434a. Electromechanical Energy. Conversion Theory of AC machines, electric transients in AC machines, dynamics of electro mechanical systems. (1st term)
2 lecture hours

E.S. 434b. Electrical Energy Conversion. Other methods of energy conversion will be considered, fuel cells, thermoelectric generatory. (2nd term)
2 lecture hours

E.S. 435a. High Frequency Electronics. Low-pass and band-pass amplifiers, sinusoidal and non-linear oscullators. Principles of amplitude, frequency and phase moduation; modulators and demodulators; negative feedback; large signal amplifiers, microwave oscillators and amplifiers. (1st term)
2 lecture hours

E.S. 435b. Communication Theory. Introduction to communication systems and statistical communication theory. Deterministic and random signals; linear systems; special analysis; introduction to information theory. (2nd term)
2 lecture hours

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 – 21

Materials Science Option

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

		Hours/Week	
		Lecture	Laboratory/ Problem
E.S. 305	Electronics (2nd term)	2	0
E.S. 306	Electromechanics (1st term)	2	0
E.S. 350	Materials Science Laboratory I	0	6
E.S. 352	Phase Equilibria and Transformations	2	0
E.S. 353	Mechanical Properties of Materials	2	0
E.S. 356	Crystallography (1st term)	2	0
E.S. 357	*Structure of Real Materials (2nd Term)*	2	0
E.S. 452	Surfaces and Interfaces	1	0
Appl Math 370	Engineering Mathematics III	3	0
Humanities or Social Sciences Elective			
"Any student may replace the Humanities or Social Science elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."			
One of:			
E.S. 201	Engineering Mechanics II	2	3
Chem. 211	Principles of Inorganic Chemistry	2	3
Chem. 214	Elementary Physical Chemistry	3	0

DESCRIPTION OF COURSES

E.S. 305. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term – 17

E.S. 306. Electromechanics. Characteristics and applications 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. Metastable and non-equilibrium states. The application of this knowledge to the treatment and control of engineering materials.
2 lecture hours – 7

E.S. 353. Mechanical Properties of Materials. Elasticity, plasticity and fracture. Mechanical testing. The working and forming of materials.
2 lecture hours – 31

E.S. 356. Crystallography. Crystal classes, symmetry, point groups, space groups, X-ray methods, crystal structure determination.
2 lecture hours, first term

E.S. 357. 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 – 23

E.S. 452. Surfaces and Interfaces. Thermodynamics of surfaces, structure of surfaces, surface energy, adsorption, adhesion, surface area measurement. Sintering mechanisms and the sintering process. Friction, wear, lubrication, bearing materials.
1 lecture hours – 7

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, elementary probability theory, Fourier series.
3 lecture hours – 26

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 lecture, 1 tutorial, 2 problem hours – 6

Chem. 211. Principles of Inorganic Chemistry. Inorganic Chemistry: A survey of the principles necessary to an understanding of atomic structure and the forces between atoms, and methods used in their study. Some aspects of chemical reactions in a variety of solvent media, coordination compounds, and a systematic study of the reactions and compounds of some of the elements.
2 lecture, 3 laboratory hours – 6

Chem. 214. Elementary Physical Chemistry. Kinetic theory and elementary thermodynamics.
3 lecture hours – 12

FOURTH YEAR PROGRAM – OPTION D – MATERIALS SCIENCE

		Hours/Week Lecture	Laboratory
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 450	Materials Science Laboratory II	0	4½
E.S. 451	Electronic Structure and Properties of Materials	3	0
E.S. 358	Thermodynamics (1st term)	2	0
E.S. 359	Oxidation and Corrision (2nd term)	2	0
E.S. 455	Applications of Materials Science	2	0
E.S. 456	Properties of Engineering Materials (1st term)	2	0
E.S. 457	Transformations (1st term)	2	0
E.S. 458	Structure and Engineering Properties (2nd term)	2	0
E.S. 459	Transformation Structures (2nd term)	2	0
Humanities or Social Sciences Elective		3	0

"Any student may replace the Humanities or Social Science Elective by any other full course or its equivalent, provided that this change is approved by the Chariman of the Undergraduate Division of the Executive Committee."

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, 452, 456, 457, 458 and 459.
4½ 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, lielectrics, piezoelectricity, and superconductivity.
3 lecture hours – 2

E.S. 358. Thermodynamics. The laws of thermodynamics, the production of work from heat, statistical interpretation of entropy, free energy of reaction, solutions, phase equilibria, free energy of binary systems, defects in crystals.
2 lecture hours, first term – 36

E.S. 359. 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-I diagrams, types of corrosion, corrosion protection, electropolishing.
2 lecture hours, second term – 36

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 – 11

E.S. 456. 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 – 21

E.S. 457. 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 – 25

E.S. 458. 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 — 21

E.S. 459. 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 — 25

Mechanical Engineering Option

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 maintenance, 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 thermodynamics and 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 and 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, air-conditioning, 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

		Hours/Week	
		Lecture	Laboratory/ Problems
E.S. 302	Mechanics of Materials II	2	0
E.S. 304	Thermodynamics	2	0
E.S. 340	Mechanical Engineering Laboratory I	0	6
E.S. 341	Mechanical Analysis and Design I	3	3
E.S. 347	Manufacturing Processes	2	0
Appl. Math. 370	Engineering Mathematics III	3	0
E.S. 303	Fluid Mechanics (1st term)	2	0
E.S. 306	Electromechanics (1st term)	2	0
E.S. 305	Electronics (2nd term)	2	0
E.S. 307	Heat Transfer (2nd term)	2	0
Humanities or Social Sciences Elective		3	0

"Any student may replace the Humanities or Social Sciences Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

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 – 23

E.S. 303. 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 – 11

E.S. 305. Electronics. Characteristic behavior of vacuum tube and semiconductor devices, and their use in linear amplifiers, oscillators and measuring instruments.
2 lecture hours, second term – 17

E.S. 306. Electromechanics. Characteristics and applications of dc generators and motors; ac power generation and transmission; ac motors; transformers.
2 lecture hours, first term

E.S. 307. Heat Transfer. Principles of heat transmission by conduction, convection and radiation.
2 lecture hours, second term – 3

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.
6 laboratory hours

E.S. 341. Mechanical Analysis and Design I. 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. Analysis and principles of design of cams, gears, gear-trains, belt and rope transmissions, clutches and brakes.
3 lecture, 3 problem hours – 36

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 solutions of differential equations, direct and iterative methods for solving linear algebraic equations. Second Term: linear algebra, elementary probability theory, Fourier series.
3 lecture hours – 26

FOURTH YEAR PROGRAM – OPTION E
– MECHANICAL ENGINEERING

1971-72		Hours/Week Lecture	Laboratory
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 414	Instrumentation and Control	2	0
E.S. 440	Mechanical Engineering Laboratory II	0	6
E.S. 444	Experimental Measurement and Analysis	2	3
E.S. 347	Manufacturing Processes	2	0
Humanities or Social Sciences Elective and the equivalent of TWO full courses selected with the approval of the Chairman of the Mechanical Engineering Option from the courses listed below.		3	0
E.S. 442	Heat Transfer	2	0
E.S. 446	Mechanical Vibrations	2	0
App. Math. 470	Engineering Mathematics IV	3	0
Computer Science 405	Simulation Laboratory	2	2
E.S. 441a.	Design of Machine Components (1st term)	1	2
E.S. 443a.	Energy Conversion (1st term)	2	0
E.S. 445a.	Gas Dynamics (1st term)	2	0
E.S. 441b.	Creative Design (2nd term)	1	2
E.S. 443b.	Heating, Ventilating and Air Conditioning (2nd term)	2	0
E.S. 445b.	Fluid Machinery (2nd term)	2	0
E.S. 453	Corrosion and Wear (2nd term)	2	0
Appl. Math. 403b.	Engineering Mathematics IV (2nd term)	3	0

Any course offered for the other Engineering Science options.

Note: Optional courses will only be given provided that a sufficient number of students register for the course.

"Any student may replace the Humanities or Social Sciences Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

FOURTH YEAR PROGRAM – OPTION E – MECHANICAL ENGINEERING

1972-73		Hours/Week Lecture	Laboratory
E.S. 400	Project, Report and Seminar	0	5
E.S. 408	Engineering Practice	3	0
E.S. 414	Instrumentation and Controls	2	0
E.S. 440	Mechanical Engineering Laboratory II	0	6
E.S. 444	Experimental Measurement and Analysis	2	3
Humanities or Social Sciences Elective and the equivalent of THREE full courses selected with the approval of the Chairman of the Mechanical Engineering Option from the courses listed below:		3	0
E.S. 442	Heat Transfer	2	0
E.S. 446	Mechanical Vibrations	2	0
E.S. 353	Mechanical Properties of Materials	2	0
Appl. Math. 470	Engineering Mathematics IV	3	0
Computer Science 405	Simulation Laboratory	2	2
E.S. 441a.	Design of Machine Components (1st term)	1	2
E.S. 443a.	Energy Conversion (1st term)	2	0
E.S. 445a.	Gas Dynamics (1st term)	2	0
E.S. 441b.	Creative Design (2nd term)	1	2
E.S. 443b.	Heating, Ventilating and Air Conditioning (2nd term)	2	0
E.S. 445b.	Fluid Machinery (2nd term)	2	0
E.S. 453	Corrosion and Wear (2nd term)	2	0
Appl. Math. 403b.	Engineering Mathematics IV (2nd term)	3	0

Any course offered for the other Engineering Science Options.

Note: Option courses will only be offered provided that a sufficient number of students register for the course.

"Any student may replace the Humanities or Social Sciences Elective by any other full course or its equivalent, provided that this change is approved by the Chairman of the Undergraduate Division of the Executive Committee."

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 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 — 21

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 laboratory hours — 2nd term — 2

E.S. 442. Heat Transfer. Principles of heat transmission under conduction, convection and radiation. Discussion of boiling and condensation. Energy conversion and transmission involving fluids in the vapor state, with applications to steam power or process plant. Introduction to nuclear energy conversion.
2 lecture hours — 25

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 — 1st term

E.S. 443b. Heating, Ventillating 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 — 2nd 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 — 3 laboratory 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 ram-jet and rocket engines.
2 lecture hours — 1st 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 — 2nd term

E.S. 446. Mechanical Vibrations. Single and multi-degree of freedom systems, torsional vibrations, Holzer's method, matrix iteration, continuous systems, vibration of strings, rods and beams, Rayleigh's method, Rayleigh-Ritz method, Dunkerley's formula, whirling of shafts, Lagrange's equations.
2 lecture hours — 9

E.S. 347. Manufacturing Processes. The relationships between design, material selection and process choice in general manufacture as they apply to modern technology.
2 lecture hours

E.S. 453. Corrosion and Wear. Corrosion principles, types of corrosion, corrosion protection; friction, wear, lubrication, bearing materials.
2 lecture hours — 2nd term

Appl. Math. 470. Engineering Mathematics IV. A sequel to Applied Mathematics 370 including the following topics. First Term: Vector calculus, ordinary linear differential equations with variable coefficients, orthogonal function expansions, introduction to partial differential equations. Second Term: Random variables and probability distributions, sample theory, statistical estimations, confidence intervals, curve fitting, experiemental design.
3 lecture hours — 24

Graduate Studies

For information on Graduate Studies in Engineering Science see the Graduate section of this calendar.

Undergraduate Medals

Professional Engineers Gold Medal: 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 in his final year.

Harry Cross Medal: This medal is the gift of Mr. J.R. Cross in memory of his father, the late Harry Cross. The award, a silver medal, is made annually to the fourth year student enrolled in the Electrical option of Engineering Science with the highest aggregate percentage for the final examinations of the Third and Fourth years, provided that the student obtains first class honors standing in the work of the final year.

The Dr. James A. Vance Silver Medal. This silver medal 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 work of the final year.

The University of Western Ontario Medals: Silver medals may be awarded to those fourth year students obtaining highest standing in options other than Electrical Engineering Science and Civil Engineering. The regulations governing awards shall be similar to those applying to the Harry Cross Medal, and the Dr. James A. Vance Medal.

Awards and Prizes

Engineering Institute of Canada Prize: This award in the amount of $50 is 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.

Engineering Institute of Canada (London Branch) Best Paper Award: This award, in the amount of $50, is presented to the 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.

Canadian Construction Association Thesis Prize: $50 and an engineer's handbook awarded to the fourth year student in Engineering Science with the best thesis on the subject of construction. Prize winning theses 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 outstanding theses.

Chemical Institute of Canada Prize: $25 to the student with the highest academic standing in the penultimate year of Chemical Engineering.

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. The award include, a first prize of $1,000.00, second price of $600.00, third prize of $400.00 and a fourth prize of $200.00. 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 subjects but may coordinate the subject 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.

Bursaries and Scholarships for Engineering Students

The J.P. Bickell Foundation Bursaries. Up to $500 each. Students registered in the Department of Geology or in the Chemical and Biochemical Engineering Option are eligible.

Hydro Electric Power Commission of Ontario. $500. This bursary is available to students in the second year in Engineering, Business Administration, or Mathematics and Physics.

Association for Professional Engineers Scholarship. $250 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.

MEMBERS OF THE FACULTY OF ENGINEERING SCIENCE

Professors

*E.A. Beecroft, BA, MA *Toronto;* PhD *Yale*

W. Bulani, BSc, MSc *Saskatchewan;* PhD *McGill*

A.G. Davenport, BA *Cantab;* MASc *Toronto;* PhD *Bristol;* PEng

J.E.K. Foreman, BASc *Toronto;* MME *Cornell;* PEng. Chairman, Mechanical Engineering Group

G.A. Geach, BSc, MSc, PhD *Sheffield;* FIM, PEng

I.I. Inculet, Dipl Ing *Bucuresti;* MSc *Laval;* PEng. Chairman, Electrical Engineering Group

L.S. Lauchland, ED, BASc, MASc *Toronto;* PEng

E.S. Nowak, BEng *McGill;* MSME, PhD *Purdue;* PEng

M.P. Poucher, BSc, MSc, DIC *London;* PEng. Chairman, Civil Engineering Group

R.M. Quigley, BASc, MASc *Toronto;* PhD *MIT;* PEng

J.E. Zajic, BA *Kansas;* MS *Wisconsin;* PhD *Davis, California;* JD *Oklahoma.* Chairman, Chemical and Biochemical Engineering Group

Associate Professors

R.M. Dillon, MC, BA *UWO;* SM *MIT;* PEng. Dean of the Faculty of Engineering Science

S.H. Abu-Sitta, BSc *Cairo;* PhD *London;* PEng

J.M. Beeckmans, BSc *London;* MASc, PhD *Toronto*

M.A. Bergougnou, MS *Nancy;* PhD *Minnesota*

J.D. Brown, BSc *McMaster;* PhD *Maryland.* Chairman, Materials Science Group

G.F. Chess, CD, BASc *Toronto;* MEng *McGill;* PEng

W.H. Davis, BASc *Toronto;* PEng. Secretary of the Faculty of Engineering Science

G.S. Emmerson, BSc, ARCST *Glasgow;* MSc *London;* PEng. Chairman, Core Studies Group

K.Y. Lo, BSc *Hong Kong;* MSc, DIC, PhD *London;* PEng

M. Novak, Dipl Ing *Prague;* PhD, *Acad. Sc. Prague*

A.T. Olson, BSc *Queen's;* MSc *Birmingham;* PEng

C. Roy, BSc *Laval;* DIC, PhD *London;* PEng

K.A. Shelstad, BE *Saskatchewan;* MSc *Dalhousie;* PhD *Toronto*

J.W. Stewart, CD, BA, BSc *Saskatchewan;* MSc *Michigan;* PEng

R.K. Swartman, BSc, MSc *Queen's;* PEng

Assistant Professors

C.G.J. Baker, BSc, DIC, PhD *London*

T.E. Base, BSc *Bristol;* MSc *Brown;* PhD *Southampton*

T. Bonnema, BSc *Queen's;* MASc *Toronto;* PhD *Purdue;* PEng

G.S.P. Castle, BESc, PhD *UWO;* MSc, DIC *London;* PEng

S.M. Dickinson, BSc, PhD *Nottingham;* CEng. PEng

I.J. Duerden, BSc *Leeds;* DPhil *Oxon;* AIM

A.J. Frick, BE *Adelaide;* ScM, PhD *Brown*

N. Kosaric, MESc *Zagreb;* PhD *UWO*

C.E. Livingstone, MSc *British Columbia;* PhD *UWO*

J.A. MacDonald, CD, BE *N.S. Tech;* MSc *Michigan;* PEng

W.H. Peacock, BASc, MASc *Toronto;* PhD *Berkeley, California;* PEng

P.A. Rosati, BA, MA *Oxon;* MESc *UWO*

J.S. Sheasby, BSc *Birmingham;* PhD *New South Wales;* AIM

*M.H. Sherebrin, BSc *Manitoba;* MSc, PhD *UWO*

*P.J. Sullivan, BASc, MASc *Waterloo;* PhD *Cantab*

W.Y. Svrcek, BSc, PhD *Alberta;* PEng

J.D. Tarasuk, BASc, MASc *Toronto;* PhD *Saskatchewan*

*P.O. Wilkins, BMus *Roch;* MS *Hawaii;* PhD *Penn.*

Sessional Staff

Assistant Professors

N. Isyumov, BESc *UWO;* PEng

G.T. Knights, BSc, MSc *Queen's;* PEng

V. Vitols, PhD *Michigan*

Lecturers

A.M. MacKenzie, BASc *Toronto;* OLS *PEng*

Teaching Fellows

E. Hanff, BASc *Toronto;* MESc *UWO*

W. Lane, BESc, MESc *UWO*

*Joint Appointments

Faculty of Graduate Studies

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The University's "General Information" booklet presenting concise introductory information about the University may be obtained from the Office of the Dean of Graduate Studies or the Registrar's Office, The University of Western Ontario, London 72, Canada.

ACADEMIC CALENDAR
1971

June 11	Last day for registration and payment of fees for all graduate students.*
July 2	Last day for submitting course enrollments, Registrar's Office, Stevenson Hall, for Spring Term or Summer Session.*
August 6	Last day for submission of PhD theses to departments for examination in time for Autumn Convocation.
September 1	All applications for new students in the Faculty of Graduate Studies, and for students beginning work in a new degree program, should be received by this date. Applications received later than this date may not be processed in time for registration for the Fall Term.*
September 20	Lectures in undergraduate courses commence for the Fall Term.
September 24	Last day for registration and payment of fees for all graduate students.*
September 24	Last day for submission of Master's theses to departments for examination in time for Autumn Convocation.
October 8	Last day for oral examinations of PhD and Master's candidates for Autumn Convocation.
October 11	Thanksgiving Day.
October 13	Last day for submission of theses to appropriate library in time for Autumn Convocation.
October 15	Last day for submitting course enrollments.*
October 20	Meeting of the Executive Committee of the Council of the Faculty of Graduate Studies for approval of candidates for Autumn Convocation.
October 29	Autumn Convocation.
December 11	Last day of classes. Christmas vacation begins.

1972

January 3	Lectures resume after Christmas vacation.
January 8	Fall Term ends.
January 9	Winter Term begins.
January 14	Last day for registration and payment of fees for all graduate students for the Winter Term.*
January 28	Last day for submitting course enrollments.*
February 21-26	Conference Week.
March 10	Last day for submission of PhD theses to departments for examination in time for Spring Convocation.
March 31	Good Friday
April 15	Last day of classes. Winter term ends.
April 28	Last day for submission of Master's theses to departments for examination in time for Spring Convocation.
May 12	Last day for oral examinations of PhD and Master's candidates for Spring Convocation.
May 17	Last day for submission of theses to appropriate library in time for Spring Convocation.
May 24	Meeting of the Executive Committee of the Council of the Faculty of Graduate Studies for approval of candidates for Spring Convocation.
June 2	Spring Convocation.
June 2	Last day for registration and payment of fees for all graduate students.*

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*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.

FACULTY OF GRADUATE STUDIES

Officers of the Faculty

Dean of the Faculty

J.A.F. Stevenson, MD, CM

Assistant Deans

R.G. Kidd, PhD

W.H. Stockdale, PhD

Administrative Assistant

G.M. Taylor

Committees of the Faculty

EXECUTIVE COMMITTEE OF THE FACULTY, 1970-71

Chairman

Dean J.A.F. Stevenson

Ex officio Members: President, Vice President (Academic), Assistant Dean of Graduate Studies (Arts and Social Sciences), Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Chairmen of Standing Committees.

Members

Representatives of Faculty of Graduate Studies on Senate: H.W. Baldwin, C.C. Bigelow, J.H. Blackwell, F.R. Calaresu, P.A. Forsyth, M.J. Hollenberg, D.G.G. Kerr, W.J. L'Heureux, W.J. McClelland, J.E. Steele: *Chairmen of Divisional Committees:* W. Bush, G.F. Lyon, D.B. Walden, W.R. Wightman; *Chairmen of Professional Degree Committees:* J.M. Beeckmans, A.E. Griffin, R.C. Hodgson, G.R. Pendrill, D.A. McKellar, E.R. Plunkett; *Representatives of Divisions:* T.J. Courchene, P.W. Jacobs, W.C. McMurray, R.M. Stingle; *Graduate Students:* W.D. Butt, J.E. Bruni, B.W. Davies, D.G. Mills, S.E. Simpson, S.F. Spencer.

ARTS DIVISIONAL COMMITTEE

Chairman

W. Bush

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: W. Burghardt, W. Bush, N.B. Crowther, P.G. Downs, D.J. Hockney, H. Spencer, R.M. Stingle; *Representative of Professional Degree Committee:* D.A. McKellar; *Representative of Faculty of Graduate Studies on Senate:* None; *Graduate Student:* W.D. Butt.

BIOSCIENCES DIVISIONAL COMMITTEE

Chairman

D.B. Walden

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Dean of Medicine, Dean of Science, Dean of Social Science.

Members

Representatives of Departments: Y.S. Brownstone, R.C. Gardner, A.C. Groom, M.D. Haust, D.B. McMillan, W.L. Magee, E.L. Medzon, G.J. Mogenson, D.G. Montemurro, R.B. Philp, C.G. Rand, D.B. Walden, M.H. Yuhasz; *Representative of Professional Degree Committee:* E.R. Plunkett; *Representatives of Faculty of Graduate Studies on Senate:* C.C. Bigelow, F.R. Calaresu, M.J. Hollenberg, W.J. L'Heureux, W.J. McClelland, J.E. Steele; *Graduate Students:* J.E. Bruni, P. Lipsey, D.G. Mills, S.R. Rimmer.

PHYSICAL SCIENCES DIVISIONAL COMMITTEE

Chairman

G.F. Lyon

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: A.E. Beck, D. Borwein, J.K. Carroll, A.G. Davenport, A.S. Deacon, G.F. Lyon, J.M. Marlborough, P. de Mayo, J. Starkey; *Representative of Professional Degree Committee:* J.M. Beeckmans: *Representatives of Faculty of Graduate Studies on Senate:* H.W. Baldwin, J.H. Blackwell, P.A. Forsyth; *Graduate Student:* B.W. Davies.

SOCIAL SCIENCES DIVISIONAL COMMITTEE

Chairman

W.R. Wightman

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: R.N. Batra, J.R. Cartwright, F.A. Dreyer, J.E.W. Jackson, M.R. Leenders, R.W. Wightman; *Representatives of Professional Degree Committees:* A.E. Griffin, R.C. Hodgson, G.R. Pendrill; *Representative of Faculty of Graduate Studies on Senate:* D.G.G. Kerr; *Graduate Students:* A. Drory, W.D. Fletcher, S.E. Simpson, S.F. Spencer.

PROFESSIONAL DEGREE COMMITTEES OF THE FACULTY, 1970-71

MASTER OF BUSINESS ADMINISTRATION

Chairman

Not yet elected.

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Business Administration.

Members

W.D. Fletcher, G.R. Forsyth, J.F. Graham, R.C. Hodgson, J.A. Humphrey, D. Kuechle, J.C. Taylor

MASTER OF CLINICAL SCIENCE

Chairman

E.R. Plunkett

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Dean of Medicine.

Members

H.W. Barr, D.C. Bondy, D.S.M. Haines, R.B. Passi, J.M. Thompson.

MASTER OF ENGINEERING

Chairman

J.M. Beeckmans

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences), Dean of Engineering Science.

Members

E.A. Beecroft, I.I. Inculet. D.A. McLarty, K.A. Shelstad, J.E. Zajic.

MASTER OF LIBRARY SCIENCE

Chairman

G.R. Pendrill

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Library and Information Science.

Members

D.A. Bird, J. Fyfe, A.J. Jamieson, J.H. White.

MASTER OF MUSIC

Chairman

D.A. McKellar

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Music.

Members

P.G. Downs, G.K. Greene, C.F. Haenselman, J.S. McIntosh, R. Riseling, G. VanOstrand.

MASTER OF SCIENCE IN NURSING

Chairman

A.E. Griffin

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Dean of Nursing.

Members

E.N. Healey, D.M. Hibbert, E.M. Horn, J. Mantle, V. Wood.

Student Representative

S.E. Simpson

STANDING COMMITTEES OF THE COUNCIL OF THE FACULTY, 1970-71

ARTS AND SOCIAL SCIENCES AWARDS COMMITTEE

Chairman

K.H. Burley

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences).

Members

D.A. Chambers, D.F. Chapin, D.E. Gerber, J.J. Leach, J.C.M. Ogelsby, C.A. Venesoen.

BIOSCIENCES AND PHYSICAL SCIENCES AWARDS COMMITTEE

Chairman

H.C. Palmer

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Biosciences and Physical Sciences).

Members

W.H. Davis, H.I.S. Ferguson, M.J. Hollenberg, D.H. Hunter, P.W. Manuel, H.G. Murray, J.E. Steele.

INTERNAL APPRAISALS COMMITTEE

Chairman

E.G. Pleva

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Assistant Dean of Graduate Studies (Biosciences and Physical Sciences).

Members

J.C.D. Brand, R.G.E. Murray, B. Rajan, J.G. Rowe, D.H. Thain.

LONG-TERM PLANNING COMMITTEE

Chairman

C.C. Bigelow

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Assistant Dean of Graduate Studies (Biosciences and Physical Sciences).

Members

W.J. Cameron, G.K. Greene, W.J. McClelland, J.W. McGowan, V.W. Sim, J.A.B. Somerset. D.B. Walden, W.H. Wehlau.

COMMITTEE ON POST-DOCTORAL FELLOWS

Chairman

Not yet elected.

Ex officio Members: Dean of Graduate Studies, Assistant Dean of Graduate Studies (Arts and Social Sciences), Assistant Dean of Graduate Studies (Biosciences and Physical Sciences).

Members

A.E. Beck, G.F. Lyon, G.J. Mogenson, R.J. Wonnacott.

REPRESENTATIVES OF FACULTY OF GRADUATE STUDIES ON SENATE

Term expires 1972: F.R. Calaresu, D.G.G. Kerr, W.J. L'Heureux, W.J. McClelland, J.E. Steele; *Term expires 1971:* H.W. Baldwin. C.C. Bigelow, J.H. Blackwell, P.A. Forsyth, M.J. Hollenberg.

Graduate Student Representatives on Council of Faculty of Graduate Studies 1970-71: J.E. Bruni, W.D. Butt, B.W. Davies, A. Drory, W.D. Fletcher, P. Lipsey, D.G. Mills, S.R. Rimmer, S.E. Simpson, S.F. Spencer.

Graduate Student Representative to Senate: G. Brodkin.

Graduate Student Observer to Senate: H. Kreek.

THE SOCIETY OF GRADUATE STUDENTS (SOGS)

The Society of Graduate Students, which includes all full-time graduate students except those pursuing degrees in the Master of Business Administration Program, was established in 1963-64 to give graduate students a recognized organization to voice their opinions and to promote friendship and cooperation among members of the various departments. The Society works closely and actively with the University Students' Council, the Faculty Association and the Faculty of Graduate Studies. Policy decisions in the Society are made by a Council composed of officers and elected departmental representatives.

The Society's activities include academic planning, athletics, colloquia, cultural events, social events, "Happy Hour" (Grad Pub), Grad orientation, housing and publications. SOGS also has representation on more than 20 university committees and subcommittees and has the privilege of nominating members for election to the Senate committees. Graduate Student representative on Senate (1970-71): G. Brodkin (MBA); Graduate Student observer on Senate (1970-71): H. Kreek (Chemistry).

SENATE ELECTIONS 1970

Call for nominations of eligible candidates to represent the Faculty of Graduate Studies as required by The University of Western Ontario Act, 1967: Up to October 15, 1971.

Polling of Ballots – November 23-30, 1971.

DEGREES 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, Botany, Business Administration, Chemistry, Economics, Engineering Science, English, Epidemiology, French, Geography, Geology, Geophysics, German, History, Mathematics, Pathology, Pathological Chemistry, Pharmacology, Philosophy, Physics, Physiology, Political Science, Psychology, and Zoology.

Master of Arts (MA) in Classics, Economics, English, French, Geography, German, History, Mathematics, Musicology, Philosophy, Physical and Health 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, 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 Musciology, see Master of Arts above.)

Master of Science (MSc) in Anatomy, Applied Mathematics, Astronomy, Bacteriology and Immunology, Biochemistry, Biophysics, Botany, Chemistry, Computer Science, Epidemiology, Geography, Geology, Geophyiscs, Pathology, Pathological Chemistry, Pharmacology, Physics, Physiology and Zoology.

Master of Science in Nursing (MScN) in Nursing Administration and Nursing Education.

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.

GENERAL ADMISSION REQUIREMENTS

Programs leading to M.A., M.Sc., M.E.Sc. and Ph.D. Degrees

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 to Prerequisite Year may be recommended for students intending to proceed to a graduate degree, but who are graduates of an ordinary, general or three-year program of an accredited institution and are deficient in degree of specialization in their discipline. The courses taken in the Prerequisite Year are to be chosen on the recommendation of the departments concerned, and should normally include at least five undergraduate courses. Students in a Prerequisite Year are not considered degree candidates until, on satisfactory completion of the prescribed courses, their Department or Divisional Committee formally recommends to the Dean a change in their registration status. Retroactive credit for residence time toward degree requirements cannot be given.

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 with less than a "B" average in an ordinary (three-year) degree program (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 would 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 – or reapplication – to a professional program) are recommended to register as special students in an undergraduate Faculty.

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 classified as **Special Graduate Students** will be accorded all privileges of **Full Standing** and pay normal graduate fees.

Status of Degree Candidacy. 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 for all applicants except those in Business Administration)*

An Application for Admission form may be obtained from the Faculty of Graduate studies or from the Faculty or Department concerned. The completed form should be returned, together with two copies of certified official undergraduate and graduate transcripts covering all academic studies to date. It is the responsibility 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.

*For procedure in Business Administration, write directly to the School of Business Administration, The University of Western Ontario, London 72, Canada.

Language Proficiency

Applicants for admission to Graduate Studies may be asked 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 the Test of English as a Foreign Language administered by the U.S. Educational Testing Service. (Application forms for the latter are available in the Office of the Faculty of Graduate Studies, The University of Western Ontario.) The student will bear the cost of taking such examinations.

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 for Prospective Students from Outside North America

A general information booklet for prospective students from outside North America may be obtained from the Office of the Faculty of Graduate Studies.

REGULATIONS GOVERNING ADVANCED DEGREES

General

Academic Year

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 15, January 15, and May 15. The minimum residence requirement for an academic year is two terms. This does not reduce the requirement 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 enrollment" card, course changes may not be made except with the approval of the Departments concerned. A fee will be charged for each course change.

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 Other Than Regular Examinations

(a) **Graduate Students Taking Undergraduate Courses**

Supplemental Examinations: A graduate student may apply to the Dean of Graduate Studies for permission to write a Supplemental Examination on the recommendation of the Department responsible for the course in which the student is registered. To be eligible to write a Supplemental Examination the student must have

(i) passed two-thirds of the year's work
(ii) obtained at least 40% in the course concerned

Deferred Examinations: A graduate student may receive permission from the Dean of Graduate Studies to write a Deferred Examination only on compassionate grounds.

Special Examinations: A Special Examination is an examination other than a regular or Supplemental examination. 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.

(b) **Graduate Courses**

For graduate courses **Special Examinations** only are permitted. 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.

Reporting of Examination Results

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.

All examinations within the Faculty of Graduate Studies will be reported as follows:

Major Courses

Major courses are usually courses offered by the Department (or Departments if the student is registered in a joint program) in which the student is registered.

A	Above 80%
B	70 - 79% inclusive
C	60 - 69% inclusive
COMPLETE	(only for requirements other than full courses, 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.

Minor Courses

Minor courses are usually courses offered by a Department other than that in which the student is registered.

A	above 80%
B	70 - 79% inclusive
C	60 - 69% inclusive
D	50 - 59% inclusive
COMPLETE	(this may replace either "C" or "D")
F	Fail, i.e. less than 50%
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.

Doctor of Philosophy (Ph.D.)

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.

Academic Qualifications

A candidate must be a graduate of an approved university or hold equivalent qualifications. He must have received a Bachelor's degree with Honors (or its equivalent), or a Master's degree, or a degree in Medicine, Dentistry, or Veterinary Medicine.

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 shall be determined by the Chairman of the Department in which the candidate is working and shall be approved by the appropriate Committee on Graduate Studies.

For each candidate the Chairman of the Department 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 conducted by the language department concerned, except that in the case of French, German, Russian or Spanish, the examination shall 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.

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.

Thesis

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.

The regulations of the University Library as to the quality of paper, title page, margins, typing, bibliography, acknowledgements, etc., must be fulfilled. The U.W.O. Thesis Guide should be consulted in the General Library, the Health Sciences Library, or the Natural Sciences Library.

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, at least one of which shall be an original typewritten copy on 100 per cent rag paper (such as Superfine Linen Record available at the U.W.O. Bookstore, or Royal Record). The remaining four copies may be carbon copies of the original (on any good quality opaque paper) or electrostatic copies (such as Xerox, made on regular Xerox paper or on Provincial Bond, but not on the treated paper used by some electrostatic and chemical copiers). 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 TWELVEweeks 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 THREE weeks before Convocation, the candidate shall present FIVE copies of his thesis to the Chief Librarian (or to the Health Sciences Librarian in the case of theses in the Health Sciences) for acceptance and binding. The Librarian should also be consulted regarding a special bibliographical description which is required for the National Library.

The thesis shall become the property of the University and will be microfilmed by the National Library of Canada. Two copies of the bound thesis, the original and either the first carbon copy or an acceptable electrostatic copy will be filed in the General Library or the Health Sciences Library.

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 *University of Western Ontario 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 Library.

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 (M.A.)
Master of Science (M.Sc.), and
Master of Engineering Science (M.E.Sc.)

Academic Qualifications

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. 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 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 in Arts, Business Administration, Music, Natural Sciences, Social Sciences, or graduates in Medicine, Dentistry, Engineering Science or Veterinary Medicine. A minimum of two academic years will be required of candidates with a General Course degree. 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.

Course of Study

The course of study shall be determined by the Chairman of the Department, School or Faculty in which the candidate is working and shall be approved by the appropriate Committee on Graduate Studies. For each candidate the Chairman of the Department, School or Faculty shall appoint at least one adviser.

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 conducted by the language department concerned, except that in the case of French, German, Russian or Spanish, the examination shall 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.

Thesis

A Thesis, incorporating the results of an investigation in the field of the major subject, may be required.

The regulations of the University Library as to the quality of paper, title page, margins, typing, bibliography, acknowledgements, etc., must be fulfilled. The U.W.O. Thesis Guide should be consulted in the General Library, Health Sciences Library, or the Natural Sciences Library.

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 demanded by his Adviser or committee shall be completed. FIVE unbound copies of the completed thesis, at least one of which shall be an original typewritten copy on 100 per cent rag paper (such as Superfine Linen Record available at the U.W.O. Bookstore, or Royal Record), shall be submitted to the Chairman of the Department or to the Chairman of the appropriate Committee on Graduate Studies. The remaining four copies may be carbon copies (on any good quality opaque paper) or electrostatic copies (such as Xerox, made on regular Xerox paper or on Provincial Bond, but not on the treated paper used by some electrostatic and chemical copiers. 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 FIVE weeks before the date of that Convocation. Each copy of the thesis shall contain a technical Abstract of not more than three hundred words and the candidate's Vita.

Following a successful examination and at least THREE weeks before Convocation, the student shall present FIVE copies of his thesis to the Chief Librarian (or to the Health Sciences Librarian in the case of theses in the Health Sciences) for acceptance and binding. The Librarian should also be consulted regarding a special bibliographical description which is required for the National Library.

The thesis shall become the property of the University and will be microfilmed by the National Library of Canada. Two copies of the bound thesis, the original and either the first carbon copy or an acceptable electrostatic copy will be filed in the General Library or the Health Sciences Library.

Departmental Examinations

Oral or written examination on course work, as well as a comprehensive examination, may be required by the Department, School or Faculty concerned. Notice of the type of an examination required shall be given by the Chairman of the Department, or equivalent appropriate authority, 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 will be conducted under the supervision of the appropriate Faculty Committee on Graduate Studies, which will appoint a Chairman and an Examining Board on the recommendation of the Chairman of the Department, School or Faculty concerned. 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, in those Divisions or Departments which require it. 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 (M.B.A.)

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.

Period of Study

The course of studies normally covers two years. It is sometimes possible for a graduate of an Honours program in Business Administration or its equivalent to complete the M.B.A. program in less than two years.

Course of Study

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 (M.Cl.Sc.)

The objective of the M.Cl.Sc. degree is the attainment by medically trained people of a level of experience in clinical research and an association with a Basic Science Department not only to satisfy the need for special experience but also to serve as an encouragement to the development of the clinical investigator.

Admission

A candidate must have an M.D. or an equivalent degree in Medicine, from an institution recognized as suitable by the Biosciences Divisional Committee of the Faculty of Graduate Studies and must have one year of experience as a general or rotating 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 the registration of a suitable candidate for the M.Cl.Sc. shall appoint a supervisory committee to act in the academic guidance and direction of the work of the candidate. This supervisory committee 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 of of the Faculty, but shall be not less than one academic year. Course work shall be considered in terms of its particular appropriateness to the area of research.

Candidates are encouraged to have competence in at least one language other than English; this requirement may be satisfied by credit for a university course in a foreign language.

The candidate must sit for those examinations formally required for the course work assigned by the Biosciences Divisional Committee. A

general examination may be required and its form determined by the supervisory committee provided that the student is given a warning of at least three months. In all examinations a 60% mark will be required for passing.

A thesis shall be presented by the candidate in accordance with the standards and regulations outlined for the M.A., M.Sc. and M.E.Sc. 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 (M.Eng.)

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.

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, 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 U.S. Educational Testing Service.

Qualifying Students

An acceptable graduate whose background is such that he may not register immediately as a candidate for the degree may be registered in the Prerequisite Year of the Faculty of Graduate Studies. On the successful completion of an individually prescribed program of study, he will then be permitted to register as a candidate for the degree.

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.

Advisers

A faculty adviser shall be appointed for each candidate; additional advisers may be appointed as required.

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 (M.L.S.)

Admission

A candidate for admission to M.L.S. 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 three-year bachelor's degree may be admitted to the School's four-term program in the September following graduation or in any subsequent term beginning in January, May, and September. 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 M.L.S. or who hold a B.L.S. from another accredited library school or its equivalent may complete their M.L.S. after two terms. 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.

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 M.L.S. in four, three, or two consecutive terms. It is possible to earn the M.L.S. 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.

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 new 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 so as 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 successful classroom teaching.

This prerequisite does not apply to all courses, but it does apply to the music education seminar, advanced conducting, and the choral and instrumental technique courses.

Candidates in Composition must submit scores of their recent compositions and have them accepted by the Graduate Music Faculty.

Candidates in the area 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 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 thesis 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 Head 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 who register for applied music study.

Thesis

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 the makeup of the Examining Board that conducts the oral examination.

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 Head 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 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, ar least one of whom will be from another Department, School or Faculty. 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 Head 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.

Master of Science in Nursing (M.Sc.N.)

Programs offered, Periods of Study

Two graduate programs in nursing are offered. One program leads to the degree of 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).

Admission

A. Major in Administration

1. A Bachelor's degree in Nursing

   or

2. A Bachelor's degree in Arts or Science, in addition to graduation from an approved diploma 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

   and

3. An overall B average in undergraduate courses.

B. Major in Teaching

Entrance is to the final 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 prerequisite year or part thereof before acceptance into the program with a major in teaching.

Candidates for the M.Sc.N. are admitted conditionally for the first term. At the end of the first term each student's progress is evaluated and recommendations are made as required. Individual applicants or students may be required to complete additional or alternative courses, depending upon facility in the use of the English language, previous academic studies, nursing experience and /or the subject chosen for research.

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 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.

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 year one, and no student is allowed to continue into year two 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.

If a student fails a course, permission to continue in the program by passing a special examination and/or repeating the course, can be granted only by the Professional Degree Committee of the Faculty of Nursing in consultation with the particular professor involved, and with the permission of the Dean of Graduate Studies.

Special Examinations

There may be a final written comprehensive examination in nursing in the final year of the M.Sc.N. program.

If a student elects to do a thesis, the Coordinator of the Graduate programs will appoint two readers who will

(a) submit in writing to the adviser, suggestions for needed modification,
(b) discuss these with the student's chief adviser for her thesis, if she so requests,
(c) rate the thesis as acceptable or unacceptable.

The student has the option of defending or not defending her thesis before the readers in an oral examination.

REGISTRATION

Resident Students

First 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. Students accepted into a two-term Master's program must, however, register initially for the Fall Term only. Failure to register at the expected time will require Departmental approval for registering during the following three terms. 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 the Chairman of his Department concerning the program of study for which he will be required 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 a 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 Calender. All registration materials will be mailed to the student in care of the department in which he is to be enrolled, except for nonresident students, whose materials will be mailed to their homes. The fee bill and cheque should be mailed to the Fees Supervisor in the envelope provided, or may be submitted in person at the Cashier's Wicket, Stevenson Hall. Courses must be recorded on the Course Enrollment form and approved by the Department Chairman or Faculty Advisor. The completed course enrollment 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 and late Course Enrollment may be subject to additional fees as specified elsewhere in the Calendar.

Students are reminded that they may 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.

Non-Resident Students

A candidate for a graduate degree who (a) has fulfilled the residence requirements, (b) has completed all of the requirements for the degree with the exception of his thesis, (c) has paid the minimum degree fee, and (d) is no longer attending the University, must register each term as a Non-Resident student. The Non-Resident fee is $5.00 per term, and is due and payable on or before the designated registration day for each term. Non-Resident students who fail to register will be charged a reinstatement fee of $100.00 per annum.

A Non-Resident student who is a candidate for a Master's degree and who has not completed his thesis after three years of Non-Resident status, or a candidate for a Ph.D. who has not completed his thesis after five years of such status, shall cease to be enrolled in the Faculty of Graduate Studies. Such a student may apply to the Chairman of the Department for approval of the same or a different thesis topic and he may apply for readmission to the Faculty of Graduate Studies in the usual way. Such a student is eligible for readmission to the Faculty on payment of any outstanding Non-Resident fees.

The onus of maintaining Non-Resident status lies with the student. It is to the advantage of the student to mail or deposit the $5.00 fee each term, as it becomes due, rather than to allow the non-resident fees to accumulate into a large amount. The Fees Supervisor will not accept tuition fees for terms in advance of the current session.

FEES

At the time of printing this Calendar, the fees for graduate programs in Ontario universities are under discussion with the Department of University Affairs. When the Fee Schedule has been struck, it will be issued separately as Appendix GS-A.

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 Somerville House 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.

Hospital Services Insurance

Hospital insurance is NOT provided by the University. Hospital insurance offered by the Ontario Hospital Services Commission is the only form of basic hospital insurance permitted in Ontario. It is the student's responsibility to obtain the necessary coverage under the Ontario Hospital Services Insurance Plan. Coverage does not become effective for three months from time of application for Ontario Hospital Insurance. The premium is $16.50 for three months for a single person and $33.00 for three months for a family, payable in advance.

Students from other provinces who already have hospital insurance are urged to ascertain, before coming to Ontario, if their policies will be honoured in Ontario hospitals and for how long.

Students from outside Canada should apply for *Ontario Hospital Insurance as soon as possible* after arriving in Ontario. For the three-months waiting period, those who are landed immigrants may avail themselves of Blue Cross Insurance.

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 $50.00 per day.

Medical Services Insurance

Medical services insurance offered by Ontario Health Services Insurance Plan (OHSIP), is now the only form of basic medical insurance permitted in Ontario.

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 30 days of your 21st birthday, OHSIP protection will begin on the first day of the month following that in which your application is received by the Health Insurance Registration Board.

If you are covered as an eligible dependent on someone else's contract - and you apply within 30 days following your 21st birthday – there will be no break in your OHSIP protection: your own *contract will be effective on your 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 total taxable income for the year ending Dec. 31st., last. 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 by *writing* to: Health Insurance Registration Board, Medical Services Administration Section, 2195 Yonge Street, TORONTO 7, Ontario.

If you do not now have any form of Health Insurance, OHSIP coverage begins 3 months after your application and first Premium Payment is received.

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 and have lived in the province for at least 90 days but for less than 120 days, your OHSIP protection will begin on the first day of the month following that in which your application is received.

Students From Outside Canada

Students coming from outside Canada may make application for OHSIP coverage. OHSIP protection will begin on the first day of the month following that in which the application and premium payment are received.

The Student Health Service in Room 133, Somerville House, has application forms and is prepared to assist those students who wish to make application for Ontario Hospital Insurance or OHSIP.

RESEARCH FACILITIES

General

The courses of instruction available in the various Departments, Divisions, Schools, and Faculties are given on the following pages. 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.

Library Facilities

Robert Lee, Ph.D., Chief Librarian

Fundamental to all graduate research is the Library. The General Library of the University is housed in the Lawson Memorial 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, Eng-

ineering 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 total book collection of the University is more than 850,000 volumes and over 620,000 microforms which include some of the best resources for graduate research in the collections of the libraries. Currently the University receives annually over 9,000 periodicals in all subjects and in many languages.

Reading rooms in the University accommodate about 1,800 students, and there are more than 180 carrells in various stack areas. 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.

A new General Library, The D.B. Weldon Library, is under construction and should be available for use during 1971-1972. The collection will be primarily for Arts and Social Science faculties. Facilities will generally be more accessible than at present.

Cancer Research Laboratory

J.A. McCarter, Ph.D., 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 M.Sc. and Ph.D. 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, Ph.D., 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 researches, including the generation and detection of radio waves ranging down to submillimeter wavelengths, 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 interplanetary 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, Ph.D., Chairman
J.C.M. Ogelsby, Ph.D., 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, 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.

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, Ph.D., 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.

FELLOWSHIPS AND SCHOLARSHIPS

University Fellowships

The University awards a limited number of graduate fellowships, teaching fellowships, research assistantships, and demonstratorships tenable within the Departments in Arts, Biosciences, Physical Sciences, and Social Sciences. Prospective candidates should direct their inquires to the Chairman of the Department in which they wish to work.

Fellowships and Scholarships Tenable at the University

Many national and provincial organizations award fellowships and scholarships tenable at The University of Western Ontario, e.g. Canada Council, the National Research Council, the Medical Research Council, but there is a large list of foundations, companies, fraternal organizations, etc. which offer scholarships. Prospective graduate students should consult the biennial publication of the Donimion 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 given accommodation by the University. Candidates should obtain such assurance by direct communication with the Chairman of the Department in which they wish to work.

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 1971-72, 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
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
Pathological Chemistry
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.

Application forms for Ontario Graduate Fellowships are available from the Office of the Faculty of Graduate Studies. For 1971-72 applications will be available in December, 1970, and must be received in the above Office by February 15, 1971. Late applications will not be accepted.

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 $3,800 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 $3,200 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 AWARDS

The foregoing awards may be granted for study and research in the fields 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. To be eligible for a first scholarship award, *an applicant must not have reached his* 30th birthday by March 31, 1971. A scholarship application is considered to be for a first award if the applicant is not engaged in study and research under the terms of an NRC scholarship at the time of his application.

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 7, Ontario.

Application forms are made available through Departmental Offices in mid-October. The deadline for return of completed applications to the Chairman of the appropriate Department is usually *late November.*

Canada Council Doctoral Fellowships

The Canada Council awards Fellowships for Doctoral studies in the Arts and Social Sciences on the basis of an annual national competition.

General Conditions

Eligibility: Persons who, by the time of taking up the award can provide evidence that they:

(a) are registered in a program of studies leading to a doctoral degree or the equivalent and,

(b) have completed one year of graduate study beyond the Honors B.A. or its equivalent.

Applicants must be Canadian citizens or landed immigrants.

Value: up to $3,500 for students in the first two years of a doctoral program, and up to $4,500 for students who have completed the first two years of their program. An extra $1,000 will be granted **to teachers or the equivalent,** and to a very limited number of the most meritorious candidates not qualifying for the teacher or equivalent classification.

Additional details and application forms may be obtained from the Office of the Dean of Graduate Studies, or from The Canada Council, 140 Wellington Street, Ottawa 4, Ontario.

Completed applications, with documents, should be submitted to the Chairman of the Department concerned usually by the end of the first week in November. Students should consult their Department concerning the actual closing date for submission of applications and documents.

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.

Collip Medal for Graduate Students

A medal to be awarded at Spring Convocation to the most meritorious graduate student obtaining a Ph.D. 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.

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.

Note: No award will be made for 1971-1972.

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.

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 Ph.D. or M.Sc. 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.

Dow Chemical of Canada Limited Post Graduate Fellowship

Graduate Fellowship in Chemistry or Chemical Engineering, value $1,200 for the academic year. In addition, the Fellow will receive $800 if research is carried on during the summer months. Open to any graduate of a recognized university or college in Honors Chemistry or Chemical Engineering.

The Fellowship is granted on an annual basis. However, if in the opinion of the University and the Company a fellow shows by his progress that such a course is desirable, a fellowship may be awarded to the same person for a further term of one year.

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.

IBM Fellowship for Research in Computer Aided Instruction

Fellowship of $3,000 to be awarded to a graduate student in Computer Science engaged in C.A.I. research.

McIntosh Scholarships in Geography

Two scholarships of approximately $300.00 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.

Spruce Falls Power And Paper Company Graduate Fellowship in the Arts

Graduate Fellowship in the Arts, value $1,300 a year for two years; open to any Canadian citizen or landed immigrant originating from the units of the British Commonwealth for graduate study leading to the degree of M.A. or Ph.D. in any of the Arts. For the purposes of this Fellowship the Arts are considered to include the following departments: Classics, English, French, German, Philosophy, and Spanish. Applications should be submitted to the Dean of Graduate Studies not later than March 15.

INTER-UNIVERSITY CO-OPERATION

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 enrol 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.

CONSTITUTION OF THE FACULTY OF GRADUATE STUDIES

1. Composition

The Faculty of Graduate Studies shall be comprised of the following Divisions: Arts, Biosciences, Physical Sciences, and Social Sciences.

2. Divisions

The respective *Divisions* of the Faculty of Graduate Studies shall consist of all members of the Faculty of Graduate Studies in the following departments, faculties, schools, or professional degree programs:

(a) Arts — Classics, English, French, German, Music, Mus. M. Program, Philosophy and Spanish.

(b) Biosciences — Anatomy, Bacteriology and Immunology, Biochemistry, Biophysics, Epidemiology, MCISc Program, Pathology, Pathological Chemistry, Pharmacology, Physical and Health Education, Physiology, Plant Sciences (Botany), Psychology, and Zoology.

(c) Physical Sciences — Applied Mathematics, Astronomy, Chemistry, Computer Science, Engineering Science, Geology, Geophysics, Mathematics, MEng Program, and Physics.

(d) Social Sciences — Business Administration, Economics, Geography, History, MBA Program, MLS Program, MScN Program, Political Science and Sociology.

Admission to Division

Admission of other departments, faculties, schools or professional degree programs to the Faculty of Graduate Studies shall require the following steps:

(i) application of the department, faculty, school, or professional degree program to the desired Divisional Committee, which committee shall make a detailed study of the proposed application and the resources (faculty, space, library, laboratory facilities, etc.) available.

(ii) approval of this application by the Council of the Faculty of Graduate Studies, after consideration of a recommendation from the Divisional Committee concerned.

(iii) approval of this application by the Senate, after consideration of a recommendation from the Council of the Faculty of Graduate Studies and after consultation with any other faculty that may be concerned.

Meeting of Divisions

Each Division shall meet at least once a year and at such other times as the Division, Divisional Committee, or Council may prescribe.

3. Dean and Assistant Deans

The academic and administrative head of the Faculty shall be the *Dean* of the Faculty of Graduate Studies. The Dean shall be assisted by four *Assistant Deans* representing the four Divisions of the Faculty of Graduate Studies.

Appointment of the Dean shall be made in accordance with current University policy. Appointments to the positions of Assistant Dean shall be for a term of three years, renewable. Recommendations shall be made to the Vice-Chancellor by a selection committee constituted as follows:

(i) The Vice President (Academic)

(ii) The Dean of Graduate Studies (who shall be chairman)

(iii) Four members of the Faculty of Graduate Studies elected by the Division to be represented

(iv) Two members of the Faculty of Graduate Studies from the other Divisions elected by the Council of the Faculty of Graduate Studies.

4. Appointment to Faculty

Recommendations for appointment to the Faculty of Graduate Studies shall be upon nomination from the department, faculty, school, or professional degree committee, and shall be made to the Dean by the Divisional Committee, which Divisional Committee shall give careful consideration to nominations.

5. Membership of Faculty

Members of the Faculty of Graduate Studies shall be those persons appointed to the Faculty by the Board of Governors on the recommendation of the Dean. They shall normally be of the rank of assistant professor or above and shall be of such academic achievement and distinction as to enable them to offer instruction to students registered in the Faculty.

6. Graduate Students

Graduate Students shall be those students admitted to the Faculty of Graduate Studies by the Dean on the advice of the appropriate Divisional Committee, and formally registered in the Faculty.

7. Faculty Council

There shall be a Council of the Faculty of Graduate Studies responsible to the Senate and composed of:

(a) the following *ex officio* members:

(i) the Vice Chancellor

(ii) the Vice President (Academic) and such other Vice Presidents as the Senate may determine

(iii) the Dean (who shall be Chairman of the Council) and Assistant Deans of the Faculty of Graduate Studies

(iv) the Deans of Arts, Business Administration, Engineering, Library and Information Science, Medicine, Music, Nursing, Science, and Social Science

(v) such other *ex officio* members as the Senate may, from time to time, determine.

(b) (i) all members of the Faculty of Graduate Studies

(ii) eight full-time graduate students, two from each of the four Divisions of the Faculty of Graduate Studies, plus one additional student for each 100 students or major part thereof over and above the first 100 students registered in the Division as of December 1st of the preceding year, elected by the full-time students of the Division concerned. There shall be not more than one student representative from each department, faculty, school or professional degree program, as defined in Clause 2.

(iii) such other members as the Senate may, from time to time, determine.

8. Meetings of Council

The Council shall meet at least three times each year and at such other times as the Council, Chairman or Senate may prescribe.

9. Quorum of Council

At meetings of Council a quorum shall consist of 75 members.

10. Duties of Council

The Council shall advise Senate on all matters concerning the Faculty of Graduate Studies and on matters referred to the Council by the Senate.

11. Committees of Council

The Council shall establish an Executive Committee and such other committees as it considers necessary. The Council may delegate authority to its committees, but such committees shall be responsible to the Council.

Executive Committee

1. The Executive Committee of the Council of the Faculty of Graduate Studies shall be composed of:

(a) the following *ex officio* members:

(i) the Vice Chancellor

(ii) the Vice President (Academic)

(iii) the Dean (who shall be Chairman of the Executive committee) and Assistant Deans of the Faculty of Graduate Studies.

(iv) the Chairmen of the following five Standing Committees: Arts and Social Sciences Awards, Biosciences and Physical Sciences Awards, Long-Term Planning, Post-Doctoral Fellowship, and Internal Appraisals.

(b) (i) the ten representatives of the Faculty of Graduate Studies on the Senate

(ii) the Chairmen of the four Divisional Committees of the Faculty of Graduate Studies

(iii) the Chairmen of Professional Degree Committees

(iv) four full-time members of the Faculty of Graduate Studies, one from each of the four Divisions of the Faculty of Graduate Studies and elected by them for a two-year term, once renewable

(v) eight full-time graduate students on the Council of the Faculty of Graduate Studies, two from each of the four Divisions of the Faculty of Graduate Studies, elected by the full-time students of the Division concerned.

Meetings of Executive and Quorum

2. The Executive Committee shall meet at such times as the Council or Chairman may prescribe. A minimum of 50% of the members of the Executive Committee shall constitute a quorum.

12. Divisional Committees

There shall be four Divisional Committees within the Faculty of Graduate Studies: Arts, Biosciences, Physical Sciences, and Social Sciences. Each Divisional Committee shall be responsible to the Council. It shall be composed of:

(a) the following *ex officio* members:

(i) the Dean of the Faculty of Graduate Studies

(ii) the Assistant Dean representing the Division concerned

(iii) the Deans of those faculties and schools with membership in the Division concerned.

(b) (i) one member of the Faculty of Graduate Studies elected by each department, faculty, school, or professional degree committee within the Division, one of whom shall be elected Chairman by the Divisional Committee

(ii) those representatives of the Faculty of Graduate Studies on the Senate from the Division concerned

(iii) the graduate students on Council from the Division concerned.

13. Meetings of Divisional Committee and Quorum

The Divisional Committee shall meet at least four times each year and at such times as the Division, Chairman, or Council may prescribe.

A special meeting of the Divisional Committee shall be called on the written notice of 12 of the members of the Division concerned, and shall be convened within seven days thereafter, to consider the matter(s) set out in the notice.

A minimum of 50% of the members of the Divisional Committee shall constitute a quorum.

14. Duties of Divisional Committees

The Divisional Committee shall advise Council on appointments to Faculty, new graduate programs, admission of students, and on other matters concerning the Division (e.g., progress of students, appointment of examiners, etc.), and on matters referred to the Divisional Committee by the Council.

15. Divisional Subcommittees

The Divisional Committee shall establish such subcommittees as it considers necessary. The Divisional Committee may delegate its authority to departments, faculties, schools, or professional degree committees within its Division, or to duly constituted subcommittees. Such bodies shall however remain responsible to the Divisional Committee.

16. Professional Degree Committees

There shall be a series of *Professional Degree Committees* for those professional degree programs within the Division concerned. Each Professional Degree Committee shall be responsible to the Divisional Committee. If the Council so decides, the Professional Degree Committee may report directly to the Council.

The Professional Degree Committee shall be composed of:

(a) the following *ex officio* members:

(i) the Dean of the Faculty of Graduate Studies

(ii) the Assistant Dean representing the Division concerned

(iii) the Dean of the faculty or school offering the professional degree program

(b) (i) six members of the Faculty of Graduate Studies elected by the members of the professional degree program

(ii) the representative(s) of the Faculty of Graduate Studies on Senate from the professional degree program concerned

(iii) the graduate student(s) on Council from the professional degree program concerned

The professional Degree Committee shall elect a chairman from within its own membership. The chairman may be a Dean of the faculty or school offering the professional degree program.

17. Meetings of Professional Degree Committees and Quorum

A Professional Degree Committee shall meet at such times as the Division, Chairman, or Council may prescribe. A minimum of 50% of the members of a Professional Degree Committee shall constitute a quorum.

18. *Duties of Professional Degree Committees*

A Professional Degree Committee shall advise the Divisional Committee or Council on matters concerning the professional degree program and on matters referred to the Professional Degree Committee by the Divisional Committee or Council.

19. Area Committees

A Divisional Committee, or groups of Divisional Committees, may establish such other committees, including Area Committees, to represent unusual interdisciplinary groupings, or for other purposes, as it considers necessary. The Divisional Committee may delegate authority to such Area Committees, but these committees shall be responsible to the Divisional Committee(s).

20. Appeals

Appeals concerning admissions, examinations, supervisors, theses, and other matters should be made in writing to the Dean of the Faculty of Graduate Studies, with a copy to the chairman or Dean of the department, faculty, school, or professional degree committee concerned. On receipt of such an appeal, the Dean of the Faculty of Graduate Studies shall appoint an *ad hoc Appeals Committee* consisting of:

(i) at least two members of the Faculty of Graduate Studies from the department, faculty, school, or professional degree program concerned

(ii) at least two members of the Divisional Committee concerned, but from another department, faculty, school, or professional degree program.

The Appeals Committee shall report to Council. If: (a) the appeal is rejected by Council, and (b) the plaintiff so requests, the Dean shall transmit all relevant material, including the report of the Appeals Committee and the decision of Council, to the Senate Appeals and Petitions Committee, whose decision shall be final.

21. By-laws and Procedure

The by-laws and regulations for the conduct of the proceedings of Council, its Executive Committee, Divisional Committees, Professional Degree Committees, Area Committees, and all other committees or subcommittees within the Faculty shall, where practicable, be those adopted by the Senate.

22. Student members of Council shall be excluded from Council and other committee or subcommittee meetings when academic standing or scholastic offenses of students are to be discussed and may be excluded when the Council, committee, or subcommittee, by a majority vote, deems their participation inappropriate.

COURSES OF INSTRUCTION

ARTS DIVISION

CLASSICS

The M.A. 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 Classics; 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*
510. Roman Orators/*A.E. Raymond*
520. Lucretius/*I. Avotins*
521. Ovid/*V.A. Broege*
522. Catullus/*N.B. Crowther*
523. Horace/*V.A. Broege*
525. Roman Satire/*A.R. Littlewood*
526. Scriptores Erotici Latini/*A.R. Littlewood*
530. Graeco-Roman Philosophy/*H.B. Timothy*
540. Roman Drama/*D.E. Gerber*
550. Graeco-Roman Education/*G.R. Lambert*
***560. Reading Course in Latin Authors**/*Staff*
590. M.A. Thesis

GREEK COURSES

500. Greek Historians/*C.L. Murison*
510. Attic Orators/*A.E. Raymond*
520. Greek Lyric/*D.E. Gerber*
521. Greek Epic/*D.E. Gerber*
522. Greek Writers under the Roman Empire/*I. Avotins*
526. Hellenistic Greek Poetry/*A.R. Littlewood*
530. Greek Philosophers/*H.B. Timothy*
540. Greek Tragedy/*D.E. Gerber, D.P. Stanley-Porter*
***560. Reading Course in Greek Authors**/*Staff*
590. M.A. Thesis

ENGLISH

Special regulations governing the M.A. and Ph.D. in English are available on request from the Department. All requests for information should be addressed to the Chairman of the Committee on Graduate Studies in English.

Application forms for admission to the Faculty of Graduate Studies may be secured from the Department of English and should be returned to the Chairman of the Committee on Graduate Studies in English.

The Department must be notified before Registration which graduate courses you wish to take. The final decision on your admission to a particular graduate course cannot be made before Course Enrolment Day, September 17; but preference will naturally be given to students who have had undergraduate training in the area of literature with which the course deals.

The Department reserves the right to limit enrolment in any course.

The following is a list of the courses to be offered in 1971-72.

SUMMER 1971

530. The Metaphysicals/*D. Kaula*
543. Swift/*I. Samuel*
571. D.H. Lawrence/*C.B. Cox*
573. Popular Conventions of Modern English Drama/*P. Davison*

FALL AND WINTER 1971-72

500. M.A. Comprehensive.
502. Tutorial
503–509. Literary Theory, Genres, and Problems
505. Literary Symbolism/*J. Reaney*
520–525. Mediaeval Language and Literature
523. Symbolism in Old and Middle English Literature/*B.I. Bandeen*
525. Chaucer and the Mediaeval Frame-Narrative/*D.F. Chapin*
526–528. Linguistics
527. Linguistics and Literature/*H.R. Wilson*
530–539. Renaissance Literature
532. Milton/*B. Rajan*
535. Renaissance Humanism/*A.E. Barker*
536. History and the History Play to 1610/*J.A.B. Somerset*
540–549. Literature of the Restoration and Eighteenth Century
541. The Early English Novel/*A.T. Straulman*
550–559. Romantic Literature
552. Wordsworth and Coleridge/*R.G. Woodman*
555. Byron and Shelley/*P.D. Fleck*
560–569. Victorian Literature
564. Tennyson and Browning/*D.S. Hair*
570–579. Modern Literature
570. Symbolism and Imagism—Yeats, Eliot, Pound and Others/*A.C. Bolgan*
576. Ideas of the Tragic in Modern Drama/*G.D. Parker*
579. Studies in the Modern British Novel/*J. Graham*
580–589. North American Literature
583. Beginnings of American Fiction/*G. Rans*
584. Canadian Literature in English: Problems in Criticism and History/*C.F. Klinck*
586. Major English-Canadian Novelists/*A.B. Conron*
590. M.A. Thesis

606. Bibliography and Scholarly Methods/*E.J. Devereux*. This is a compulsory half-course for all students in the M.A. Year or in a Ph.D. program. Any student who regards his previous training in bibliography as satisfactory must arrange to see Professor Devereux, who will assess his previous

*Half Course.

English 608: Reading Course in Bibliographic Methods.

training and determine whether or not he must take English 606.

610–619. Ph.D. Qualifying Examination
- **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. North American Studies**

690. Ph.D. Thesis

Teaching Fellowships

The Department offers a number of Teaching Fellowships, ranging in value from $1500 to $3000, which involve tutorial work of not more than two hours a week.

FRENCH

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 compositon and in research methods.

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. Candidates may also be required to carry reading assignments in selected areas.

Students must obtain an overall B average (70%) in their course work for the MA and PhD degrees.

Students wishing to take a course offered by the Department of French in the Summer Term should first consult the special regulations of the Department governing those courses to determine whether they are eligible to do so.

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. M.A. 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 French 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

GERMAN

The Department of German offers courses leading to the degrees 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. New PhD candidates will not be admitted in 1971-1972.

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.
510. Survey of German Literature.
520. Old High German and Middle High German (Phonology, Morphology, Syntax and Readings)
523. Mediaeval German Literature
530. German Literature of the Reformation and Counter-Reformation
532. German Literature of the 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. German Romanticism

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
580. Twentieth-Century German Drama
581. The Twentieth-Century German Novel
582. Twentieth-Century German Poetry
590. MA Thesis
690. PhD Thesis

Graduate courses which will probably be offered in 1971-1972:

500. Reading and Research
551. Goethe's *Faust* (H.J. Schlütter)
573. Heine. Das Junge Deutschland (H. Spencer)
574. Stifter and Keller (A. Anderson)
580. Twentieth-Century German Drama (G.L. Tracy)

MUSIC

COURSES

*530. Music Bibliography and Research Techniques Bibliography
*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

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 of 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 of Vocal Art
590. M.A. 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

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

*Half Course

PHILOSOPHY

Students will be admitted either to the M.A. program or to the Ph.D. program in accordance with their academic backgrounds. There are two programs leading to the Ph.D. 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, University of Western Ontario, London 72, Canada.

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. M.A. Thesis
595. M.A. Comprehensive Examination
596. Ph.D. Qualifying Examination
690. Ph.D. Thesis

SPANISH AND ITALIAN

The Department of Spanish and Italian offers courses leading to the MA degree in Spanish.

*Half Course

Applicants who are not graduates of an Honors Program in modern languages will be required to do a Prerequisite Year in anticipation of admission to graduate courses.

There are two avenues which lead to the MA degree. The candidate may complete four courses, or if he prefers, three courses and a thesis.

Details of the program may be obtained by writing to the Chairman of the Graduate Committee, Department of Spanish and Italian, The University of Western Ontario, London 72, Ontario, Canada.

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.

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. Calderón de la Barca and his Contemporaries. A critical analysis of selected plays of Calderón 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. Galdós 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, Azorín and Valle Inclán 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. M.A. 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.

BIOSCIENCES DIVISION

ANAESTHESIA

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 Victoria, St. Joseph's and Westminster Hospitals and of the Faculty of Medicine. 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 (MClSc).

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

The Department of Anatomy accepts qualified students to study for the 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, and certain aspects of gross anatomy. Graduate students may carry out their research projects in one of these fields.

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, Histology and Cytology, Neuroanatomy, Developmental Anatomy, Cytogenetics.

Applications for admission should, in the first instance, be made to the Chairman of the Department. A brochure 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. M.Sc. Thesis
661. Cell Structure
690. Ph.D. Thesis

BACTERIOLOGY AND IMMUNOLOGY

Courses are offered leading to the degree of MSc or PhD Prospective graduate students should have an Honors degree, or its equivalent (preferable in Microbiology, Biology, biochemistry or Physiology) or have an MD, a DDS or a DVM.

A program of research and directed reading is accompanied by courses offered by the Department or given in collaboration with other 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.

The present research interests of the Department 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; endospores; macromolecular architecture of bacterial cell walls; taxonomy; toxin production, cell lysis and other physiological problems; bacterial metabolism; virus cell interactions; bacteriophage genetics; immunological and hypersensitivity problems; oral microbiology. Facilities for electron microscopy, electrophoresis, analytical ultracentrifugation and other instrumentation are in the Department.

Applicants with acceptable training in biochemistry may be considered for research problems in microbial biochemistry, which are supervised conjointly with the Department of Biochemistry. Opportunities for research in clinical microbiology (including bacteriology, mycology and virology) are offered with the resources of the teaching hospitals at hand. Opportunities in immunological research and training have been increased, and it is considered acceptable that candidates may specialize in either bacteriology or immunology.

COURSES

500. Microbiology. A comparative study of the morphology, biology and relationships of algae, protozoa, fungi, bacteria and viruses. Given in collaboration with the Department of Botany.

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 14 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.

541, 542. Seminar. Seminar courses involving detailed consideration of selected topics in microbiology.

560. Advanced Microbiology. An advanced treatment of the biology and physiology of microbes with particular emphasis on the bacteria and their viruses.

561a. Microbial Anatomy. A survey of cytological methods and applications to the understanding of the structure of procaryotic organisms and fungi.

562b. Advanced Virology. Current topics of the biochemistry of virus-cell interactions".

565. Microbial Biochemistry. Topics involving the biochemical activities and processes of microbes.

567a. Microbial Genetics. Aspects of genetics applying to micro-organisms. (Given in collaboration with the Department of Botany).

568. Medical Bacteriology: A lecture course concerned with pathogenesis and exemplary problems in diagnostic and determinative medical bacteriology. Not to be given in 1971-72.

569b. Medical Mycology. A consideration of fungi pathogenic for man and animals.

570a. Immunology. An introductory lecture course concerned with immunological theory and interpretation of basic and medically applied immune phenomena (given in collaboration with the Department of Medicine).

571b. 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 570a or its equivalent.

572b. Immunochemistry. An advanced course dealing with the chemical structure of and the interaction between antigens and antibodies *in vitro* and *in vivo.* Prerequisite: Bacteriology and Immunology 570a or its equivalent".

573. Methods in Immunobiology. An advanced course offered to those specializing in immunology, and will deal with techniques in immunobiology and clinical immunology. (Given in collaboration with the Department of Medicine).

574. Methods in Immunochemistry. The students specializing in immunology will be given the opporunity to learn and use all the immunological techniques employed in this laboratory (equipment permitting).

575, 576. Immunology Seminars. Seminar courses involving detailed consideration of selected topics in immunology.

580. Methods in Microbiology. An advanced course offered to those specializing in microbiology. It will deal with specific techniques in microbiology.

590. MSc Thesis

610. Comprehensive (PhD)

690. PhD Thesis

BIOCHEMISTRY

The minimum requirement for acceptance into courses leading to the degree of MSc or PhD is and MD or an Honors degree, or its equivalent, in Biochemistry, Biology, Chemistry, Microbiology or Physiology.

The research interests of the Department are in the following general fields: Chemistry, metabolism and biosynthesis of phosphatides, chemistry and metabolism of brain, biochemistry of developing brain, biochemistry of mental disease, biochemical genetics, biochemistry of congenital abnormalities, fat metabolism, carbohydrate metabolism, metabolism of degenerating muscle, physical and chemical properties of proteins, allosteric control of enzymes and the chemistry of differentiation.

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.

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 previously completed. Students seeking the Doctoral degree are expected to complete successfully an oral examination on the general field of biochemistry during the period of registration for the advanced degree.

COURSES

500. General Biochemistry. A survey course.

513. Current Topics in Biochemistry. A course of variable content dealing with contemporary problems in biochemistry.

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.

530. Medical Biochemistry. A survey course in biochemistry related to medicine.

560. Biochemistry. An advanced treatment of intermediary metabolism. Prerequisites, Biochemistry 500, 530 or equivalent.

561. Nucleic Acids and Protein Synthesis. A discussion of the role of nucleic acids in promotion and regulation of protein synthesis. Prerequisite, Biochemistry 500, 530 or equivalent.

564. Enzymology. A course of lectures dealing with kinetics, thermodynamic and mechanistic characteristics of enzyme action. Prerequisites: Biochemistry 500, 530 or equivalent.

568. Physical Biochemistry. A discussion of the physicochemical properties of macromolecules of biological interest. Prerequisite, an introductory course in physical chemistry and Biochemistry 500, 530 or equivalent.

590. MSc Thesis

690. PhD Thesis

Note: All courses are not offered every year.

BIOPHYSICS

Graduates from physical or biological sciences or medicine are accepted for the degrees of MSc or Ph.D. 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.

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.

COURSES

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. A knowledge of first year calculus is assumed.

511. Current topics in Biophysics A. Not to be offered in 1971-72.

512. Current Topics in Biophysics B. Animal evolution as viewed biophysically.

560. Cellular Biophysics. The Physics of cell shape and size, membrane structure and dunction, the role of cell water, cells as chemical and mechanical machines, and as control systems, investigative tools and techniques.

561a. Bio-electrical phenomena. Bio-electric potentials, excitability and conduction, mechanism of biological transducers, and cybernetics.

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 Botany.)

563a. 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.

564b. Bio-thermodynamics. 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.

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 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. M.Sc. Thesis.

690. Ph.D. Thesis.

DIAGNOSTIC RADIOLOGY

Graduates in Medicine who have served a year of rotating internship in an approved hospital may apply for admission to the integrated training program in Diagnostic Radiology.

This training is designed for those intending to sit the examination of either Certification or Fellowship of the Royal College of Physicians of Canada, as modified for Diagnostic Radiology. Residents are encouraged to undertake research projects in Clinical Diagnostic Radiology, in co-operation with members of other Clinical Departments, or in purely radiological fields.

The staff of the Department of Diagnostic Radiology participates extensively in the activities of the cardiovascular, neurological and paediatric services, and considerable specialization of both staff and equipment in those areas has developed.

EPIDEMIOLOGY

The research interests of the Department are chiefly in the fields of epidemiology and biostatistics with current emphasis on studies of perinatal mortality, child development, cancer, mental illness and individual patterns of morbidity.

A graduate training program in epidemiology is available for a limited number of students. Suitable graduates in medicine, biology, mathematics or the behavioral sciences are eligible for training for the M.Sc. or Ph.D. degree.

Also it is possible for physicians proceeding to the Fellowship of the Royal College in some specialties to take Epidemiology as their basic science.

COURSES

510. Statistics

520. Methods of Clinical Research.

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 behavior. (half course)

530. Epidemiology.

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 inter-relationship with socio-cultural and emotional factors, and an evaluation of selected mental health programmes and services. (half course)

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 course)

590. M.Sc. Thesis.

610. Advanced Epidemiology.

690. PhD Thesis.

HISTORY OF MEDICINE AND SCIENCE

A program leading to a graduate degree is not yet available.

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. (half course, fall term)

640. Selected Topics in the History of Scientific Thought. An advanced reading and research seminar, focusing in alternate years on the history of (1) biological sciences, (2) physical sciences.

MEDICINE

Graduates in Medicine may obtain further training in internal medicine at the intern, resident, or fellow level—through a program which integrates the clinical and research facilities of Victoria, St. Joseph's and Westminster Hospitals.

This program is designed to qualify individuals for the 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 and immunology and others. Varied facilities in these disciplines are available for animal and human research, combined with clinical traineeship.

OBSTETRICS AND GYNAECOLOGY

Graduates in Medicine may apply for training in Obstetrics and Gynaecology at Victoria or St. Joseph's Hospitals, London, Ontario.

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).

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.

OPHTHALMOLOGY

The Department of Ophthalmology is approved by the Royal College of Physicians and Surgeons of Canada to accept two candidates annually for training in this specialty. The facilities of Victoria, St. Joseph's and Westminster Hospitals, and the Health Sciences Centre of the University are utilized in this program.

OTOLARYNGOLOGY

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

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 Fellowship in 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 program in Paediatric Cardiology is available.

The main research interests of the Department lay in carbohydrate metabolism, metabolic studies, mental retardation, the study of mongolism, chromosome anomalies, immunohaematology, neonatology, disorders of mucopolysaccharides and aminoacidopathies. Research in perinatal mortality and morbidity is carried on in conjunction with the Department of Obstetrics and Gynaecology and the Departments to Physiology and Biochemistry. 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 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 for fellowship in the Royal College of Physicians of Canada.

PATHOLOGY

Graduate training is available leading either to an advanced degree in Pathology (MSc or PhD) or to qualification for Fellowship or Certification 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 study toward Fellowship in the American Academy of Oral Pathology or Certification by the American Board of Oral Pathology.

Graduates in Science as well as Medical, Dental and Veterinary graduates are eligible for MSc and Ph.D. studies.

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.

510. Current Topics in Pathology. A seminar course held throughout the year.

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, immunofluorescent 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.

590. M.Sc. Thesis.

610. Comprehensive (PhD)

630. Special Human Pathology. A comprehensive course in human pathology, taught on a regional and systemic basis. Prerequisite: Pathology 530. 248 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. 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.

690. PhD Thesis

PATHOLOGICAL CHEMISTRY

A BSc or MD degree is required for acceptance to studies leading to the degree of MSc or PhD. Course programs planned for students may be complemented with other courses provided through co-operation with other departments of the Faculty. Candidates are also accepted for further training to qualify for Fellowship, including specialized training in Clinical Pathology, Medical Biochemistry and Haematological Pathology, preparatory for Certification or for Fellowship in the Royal College of Physicians and Surgeons of Canada. Enquiries and applications should be addressed to the Head of the Department.

Present research activities in the department lie in the following general areas: the enzyme systems concerned in intermediary metabolism in health and disease including malignancy; enzymology and metabolism of the erythrocyte; ovarian hormones; environmental aspects of carcinoma; investigations of steroid and other hormones; fluorescent antibody studies in red cells and amniotic cells; lymphocyte culturing and Rh sensitization; renal immunofluorescene; chronic dialysis and kidney transplants; tissue histocompatability; muscle fluids and electrolytes in renal failure; drug toxicity; catecholamines in plasma; metabolism of lymphocytes and platelets; studies of the biogenesis of mitochondria and their underlying control mechanisms.

The research and clinical laboratories situated in the Victoria Health Services Building and the Meek Memorial Laboratory, Victoria Hospital, include special facilities for chromatographic and electrophoretic studies; spectral analysis in the ultraviolet, visible and infrared; tracer techniques utilizing beta and gamma emitting isotopes; as well as apparatus for amino acid analysis, atomic absorption, gas liquid chromatography, fluorometry and ultracentrifugation.

COURSES

510. Steroid Biochemistry
511. Inborn Errors of Metabolism
512. Biochemical Haematology
513. Toxicology

514. Advanced Methodology in Laboratory Medicine. A course designed to familiarize individual students with biochemical and haematological techniques currently employed in clinical medicine. Analytical procedures will be scrutinized both in theory and practice incorporating physical-chemical principles as well as the required instrumentation. Due emphasis will be placed upon modern trends in automation, quality control and development.
(4 hours per week)
530. Pathological Chemistry (Medical)
590. MSc Thesis
690. PhD Thesis

Both courses 510 and 511 will be given on alternate years with courses 512 and 513, the former to be presented in 1971-72.

PHARMACOLOGY

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.

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.

COURSES

501. General Physiology and Pharmacology. In collaboration with the Department of Physiology.

511. Pharmacology of the Autonomic Nervous System.

530. Pharmacodynamics (Medical).

531. Neuropharmacology (Medical).

532. Neurological Sciences (Medical). In collaboration with Departments of Anatomy, Biochemistry and Physiology.

541. Seminar.

560. Advanced General Physiology and Pharmacology. In collaboration with Department of Physiology.

561. Chemical Pharmacology.

580. Laboratory and Tutorial.

590. MSc Thesis

610. Advanced Pharmacology. (Prerequisite course 530 or equivalent).

690. PhD Thesis

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.

PHYSICAL AND HEALTH EDUCATION

ADMISSION REQUIREMENT

The Department of Physical and Health Education offers a program leading to the MA degree:

Candidates 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 standings, and completion of such additional make-up work as may be determined by the Department.

PERIOD OF STUDY

Applicants who meet the first requiremnt will normally be accepted for regular admittance to a one year program of study. Those who meet the second requirement will be accepted into a Prerequisite Year of study. The make-up work will be determined by the Department.

Admittance to regular admission will be dependent upon the satisfactory completion of the course work in the prerequisite year.

REQUIREMENTS FOR THE DEGREE

The program of study will consist of a thesis and three and one-half courses, one of which must be PHE 501 (one term). In consultation with the Chairman of the Graduate Committee, a minimum of two courses are to be selected from the list below. The third course shall normally be a senior or graduate course related to the candidate's field of study, offered by another department in the Faculties or Schools of the University, with the concurrence of the Department concerned.

Students may petition the Graduate Committee to substitute two (2) courses in lieu of the thesis. Upon acceptance of his request the student may enrol in a maximum of four and one-half courses in the combined fall and winter term. He will normally enrol in his fifth course in the summer term. A final oral examination will be conducted by the Departmental Examining Board upon satisfactory completion of the course work.

COURSES

501. Research Methods in Physical and Health Education/ *Faculty*

502. Scientific Analysis of Physical Fitness and Sports Performance/ *M.S. Yuhasz*

503. Science and Principles of Modern Sports Training/ *R.B. Eynon*

510. A Cultural-Historical Study of Physical and Health Education/ *J.R. Fairs*

511. The Administration of Physical and Health Education/ *G.A. Paton*

512. Modern Health Problems/ *G. Wearring*

553. Theory of Motor Performance/ *J.R. Richardson*

555. Individual Study or Research/ *Faculty*

558. Sociology of Sport/ *B. Petrie*

590. MA Thesis/*Faculty*

SEMINAR

Students will be required to attend the Department Seminar which meets regularly to hear and to discuss papers and reports on current issues and recent research given by faculty, visitors and students.

PHYSIOLOGY

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, radio-immunoassay 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, ultraviolet – visible spectrophotometry, fluorometry, etc. Both general and on-line (PDP12) computing facilities will be available.

In addition to the general systematic courses, 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.

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.

501. General Physiology and Pharmacology.

511. Current Topics in Physiology A.

512. Current Topics in Physiology B.

514. Tutorial and Comprehensive in Physiology (MSc).

541. Seminar.

542. Physiology of Exercise.

560. Advanced General Physiology and Pharmacology

561. Systematic Mammalian Physiology.

562. Metabolic Physiology.

563. Neurophysiology.

564. Physiological Controls and Regulations.

565. Behavioral Physiology.

580. Laboratory and Tutorial.

590. MSc Thesis.

614. Tutorial and Comprehensive in Physiology (PhD).

690. PhD Thesis.

PLANT SCIENCES (BOTANY)

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. Comparative biology of closely related species inhabiting the same area. Seed dormancy and seedling establishment. Plant population dynamics. Plant-animal interrelationships. Analysis of vegetation and environment including ordination, classification and species pattern.

Genetics. Cytogenetics of mitotic and meiotic cells. Physiological genetics of pollen. Genetics of fungi. Biochemical systematics, with particular reference to secondary phenolic compounds and their inheritance. Evolution.

Morphogenesis. Morphological analysis of initiation and development in flowers and other organs.

Mycology and Plant Pathology. Biological effects of storing fungi in liquid nitrogen. Aspects of synthesis and nuclear division in fungal hyphae. Microbial oxidation of aliphatic hydrocarbons. Fungal Taxonomy. Biology of plant pathogens, including root/fungus relationships, biology of zoospores, chytrid parasitism of algae, physiology of obligate parasitism and ultrastructural cytology, effect of pesticides on soil microflora, physiology of psychrophilic fungi.

Phycology Field, culture studies and chemical control of freshwater algae.

Plant Biochemistry and Physiology. Growth and metabolism of pollen. Enzymology. Plant sugars. Photoperiodism and timing. Phytochrome and endogenous rhythms as regulators of germination and flowering. Mode of action of phytochrome in de-etiolation. Role of phenolic metabolism in growth. Organic and amino acid metabolism. Cellulose and lignin degradation. Physiology of herbicidal action. Metabolic root pressure and solute uptake.

Radiobiology. Effects of high energy irradiation on metabolic processes, in particular on protein biosynthesis, and related nucleic acid studies.

Systematics. Patterns of variation at and just below the generic level with particular emphasis on multicharacter numerical Adansonian analyses and phyletic interpretations; problems of data coding and selection. Materials: Arundinelleae (Gramineae) and Podalyrieae (Leguminosae). Data: morphologic, anatomical, cytological, biochemical, geographical.

COURSES

550. Topics in Morphogenesis and differentiation/ *R.I. Greyson*

552. Advanced Plant Physiology and Biochemistry I */F.S. Cook, B.G. Cumming, W.G. Hopkins, D.G. Wilson*

553. Advanced Ecology I/ *P.B. Cavers and L. Orloci*

554. Advanced Genetics I/ *D.B. Walden*

556. Biochemical Systematics/ *M.D. Fahselt*

558. Numerical Techniques in Taxonomy/ *R.C. Jancey and J.B. Phipps*

559. Philosophy of Systematics/ *R.C. Jancey and J.B. Phipps*

560. Freshwater Algae/ *D.A. McLarty*

561. Virus Diseases/ *W.E. McKeen*

570. Mycology and Plant Pathology/ *C.J. Hickman and A.M. Wellman*

571. Host-parasite Relations/ *W.E. McKeen*

590. MSc Research and Thesis/*Staff*

652. Advanced Plant Physiology and Biochemistry II / *F.S. Cook, B.G. Cumming, W.G. Hopkins, D.G. Wilson*

653. Advanced Ecology II/ *P.B. Cavers and L. Orloci*

654. Advanced Genetics II/ *D.B. Walden*

659. Advanced Radiobiology/ *R.B. van Huystee*

690. PhD Research and Thesis/*Staff*

PSYCHIATRY

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.

This training utilizes the extensive psychiatry facilities available in the area. Application is made directly to the Head of the Department. Suitable stipend is provided during the period of training by the Ontario Department of Health.

PSYCHOLOGY

PROGRAM OF STUDIES

The graduate program provides advanced training in general psychology with specialization in learning and motivation, sensation and perception, physiological and comparative, verbal learning and memory, cognition, measurement, experimental child, personality theory and assessment, experimental social, psycholinguistics, educational, mental retardation, and experimental psychopathology.

FACILITIES OF THE DEPARTMENT

Facilities for experimental research include animal laboratories and rooms specially designed for research with human subjects in perception, psychophysiology, learning, 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-8s and a PDP-12 computer complete with analog converter, oscilloscope, etc. An engineering shop, a work shop and electronic consultants are available. Data processing equipment includes programmable electronic calculators (in addition to standard mechanical and electronic calculators) and access to complete IBM 7040 and DEC PDP-10 computer facilities. The Department has a remote terminal, card reader and printer for use with the PDP-10. In addition to a library of computer programs, a full-time programmer is available for special programs or consultation.

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 Center and a nursery school. Four mobile laboratories are available for off-campus research with children.

M.A. 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 who have not completed the requirements for the degree are expected to remain in residence during the summer.

Ph.D. DEGREE

The primary purpose of the doctoral program is to train scientists and university teachers. 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. Frequently, more time is necessary. All students are expected to be in residence during the summer.

ADMISSION REQUIREMENTS

MA Degree: A student must have obtained at least second class honors in the final years of his undergraduate work to be admitted to the Faculty of Graduate Studies.

PhD Degree: An MA degree in psychology is normally required for admission as a PhD candidate in the Department. A copy of the MA thesis may be requested at the time of application.

Graduate Record Examination results (Aptitude and Advanced Tests) are required and should be made available at the time of application. MAT scores may be accepted in certain cases.

COURSES

500-509. Learning and Motivation. Introduction to theories of Hull-Spence, Logan, Mowrer, Miller, Skinner, Estes; classical conditioning; operant conditioning; frustration; punishment; discrimination learning; partial reinforcement; mediation concepts; 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. Neural mechanisms of learning; memory; language; sensory and perceptual processes; attention; sleep and wakefulness; and, neural and endocrine integrations underlying drives and emotional behavior.

530-539. Experimental Child. Motivational and associative factors in children's learning; development of sensory integration; problem solving and cognitive development; behavioral modification in preschool children; assessment of brain-injury; and special problems in behavioral development.

540-549. Research Design and Measurement. Design of research and the analysis of data; general statistical principles; analysis of variance; correlation theory; multivariate techniques; methods and principles of measurement; numerical analysis; and, theory of errors.

550-559. Cognitive Processes. Concept formation; problem solving; computer simulation of cognitive processes; the creative process in literature; cross-cultural 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; structural aspects of language; theoretical interpretations of verbal learning; processes in short-term and long-term memory; psycholinguistic phenomena including developmental aspects; situational determinants, pathology, and individual differences in language and verbal behavior.

580-589. Personality Theory and Assessment. Critical evaluation of theories concerning the nature and function of the person as a psychological entity, and the theoretical and quantitative foundations of assessment; empirical foundations of personality theory; personality theory and practice; test theory; construct validation and test construction; classification and diagnosis; and, multivariate procedures.

600-609. Educational Psychology. Introduction to educational psychology; the analysis of the general principles of psychology as applied to education; education of exceptional children including children with emotional, neurological and perceptual disorders as well as the gifted, retarded, and culturally deprived; educational research; educational measurement; and the psychology of teaching and application of learning theory to classroom learning.

620-629. Experimental Psychopathology. Theoretical foundations of psychopathology; etiology; assessment and treatment of behavior disorders and organic impairments.

630–639. Occupational Psychology and Counselling. A critical survey of alternative counselling strategies and approaches; research on counselling practice and counselling 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 a general proseminar 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, Psychiatry, Physics, and Paediatrics.

SURGERY

Graduates in Medicine who have served a year of rotating internship in an approved hospital may apply for further training in Surgery in a plan utilizing the facilities of Victoria, St. Joseph's and Westminster Hospital and of the Health Sciences Centre of the University.

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 (MClSc).

THERAPEUTIC RADIOLOGY

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 (see page 17); with the approval of the College this may be used to satisfy the requirement for training in basic science.

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 equvalent.)

512, Applied Radiotherapy. (Prerequisite – M.D. 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

Research Interests of the Department

Research is currently being carried out in the following general fields: ecology, studies on reproductive biology, population dynamics and behavior of fish, birds and mammals; comparative physiology, including endocrine control of metabolism, reproductive physiology and rhythmic phenomena, temperature regulation and invertebrate venom physiology; comparative histology and ultrastructure of vertebrate and invertebrate tissues; population genetics; parasitology; experimental embryology; insect control; and polytene cytotaxonomy.

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. However, students with other qualifications may be granted admission to a prerequisite year to achieve adequate standing.

Admission as PhD candidates will be given to students having an MSc degree or high standing in an Honors BSc degree. Applicants without a Master's degree may be required to register initially as MSc candidates, with the possibility of transferring to a PhD program after one year of satisfactory work.

Details may be obtained on application to the Chairman of the Department.

COURSES

544. Embryology. A lecture, laboratory and seminar course emphasizing molecular and experimental biology of development./ *J. Purko, H.I. Battle*

545. Ultrastructure of Animal Cells. A seminar course on cell organelles and cellular constituents with emphasis on their roles in cellular metabolism. The fine structure of selected vertebrate and invertebrate tissues will be examined./ *R.R. Shivers*

552. Environmental Physiology. A lecture and seminar course dealing with the effects of environmental factors upon the physiology of animals./ *R. Roth*

553. Ecology of Vertebrates. A seminar course dealing with factors controlling the abundance of vertebrates./ *W.N. Holsworth, C.D. MacInnes, R.J. Planck*

554. Histology. A comparative and evolutionary study of the cellular structures of organs, as illustrated by selected vertebrates and invertebrates./ *D.B. McMillan*

555. 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 implications of these considerations upon the process of evolution./ *R.K. Misra*

557. Advanced Biometry. Statistical methods, linear statistical models, multivariate analysis./ *R.K. Misra*

558. Logic and Theory in Experimental Zoology. A seminar and project course dealing with logic and philosophy of experimental zoology; use of computer languages and modern means of data acquisition./ *R.J. Planck*

562. Insect Physiology. A lecture and seminar course on the principles of insect physiology./ *J.E. Steele*

564. Insect Histology. A lecture and laboratory course involving the student's preparation and interpretation of his own slides./ *W.W. Judd*

565. Comparative Biochemisty. A systematic comparison of the phenomena of life throughout the phylogenetic scale. Emphasis on: sources of biologically useful energy, classes of metabolities, comparative enzymology, and comparative biochemistry of organized reaction systems./ *W. Chefurka*

571. Parasitology. A seminar and laboratory course in which the student will concentrate upon a group of parasites of his own choice. Prerequisite: Zoology 471 or equivalent./ *T.K.R. Bourns*

572. Ornithology. A lecture, laboratory and seminar course with emphasis on reproduction, distribution and ecology of birds./ *D.M. Scott*

573. Animal Behavior. A seminar course with discussion of current problems in the field of animal behavior. / *M.H.A. Keenleyside*

574. Population Dynamics. Mathematical theories of population structure and dynamics; statistical and field techniques for analysis of dynamics of real populations. (Prerequisite, Zoology 555)./ *R.K. Misra, W.N. Holsworth, C.D. MacInnes.*

590. MSc Thesis.

690. PhD Thesis.

PHYSICAL SCIENCES DIVISION

APPLIED MATHEMATICS

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 (boundary layer theory, potential flow problems, numerical solutions of the Navier-Stokes equations, applications of tensor analysis to the equations of fluid dynamics, heavy vortex rings, turbulent dispersion, magnetohydrodynamics, dusty gases); Solid Mechanics (fracture theory); 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, Veneziano model); Many Body Systems; Nuclear Structure (applications of group theoretic and other methods to nuclear structure calculations); Plasma Physics and Relativistic Electron Flow; Solid State Physics (ionic spectra in crystals).

Mathematical Methods: Asymptotic expansions and matching techniques; Eigenfunction expansions in singular non-self adjoint boundary value problems; Asymptotic solutions in wave propagation; Solutions of non-linear dispersive partial differential equations.

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 enrol in a prerequisite year, during which he must complete satisfactorily a minimum of five undergraduate honors courses.

(4) A candidate for the Degree of M.Sc. will be required to demonstrate ability in computer programming. Short courses leading to proficiency in this subject are offered from time to time by the Department of Computer Science.

PhD DEGREE

(1) An applicant 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 enrol 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. The selection offered depends upon the interests of the graduate students enrolled at the time. 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.

530. Special Topics in Theoretical Physics.

531. Nuclear Physics.

532. Quantum Field Theory.

533. The Physics of Elementary Particles.

552. Fluid Dynamics.

553. Solid Mechanics.

554. Quantum Mechanics.

556. Non-linear Mechanics.

560. Numerical Methods.

570. Mathematicsl 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

The primary fields of interest in the Department are in astrophysics, particularly spectroscopy, photometry, variable stars, stellar atmospheres, radiation transfer, stellar magnetism, stellar evolution, optical instrumentation. Studies in solar magnetohydrodynamics, and observational radio astronomy are conducted in co-operation 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 Memorial Observatory.

Any student intending to do graduate work in astronomy should have adequate undergraduate preparation in Astronomy, Physics or Mathematics. Students who have not completed Astronomy 320 (Astrophysics I) and Astronomy 420 (Astrophysics II) or their equivalent will be required to take Astronomy 541 in their first year in residence. The Department may require a student to elect any other courses it deems necessary for graduate study preparations.

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 Departmental advisors. There is no foreign language requirement. The student must pass a comprehensive examination in astronomy. In addition the student must complete one of the following programs. The choice of program is subject to the approval of the Departmental advisors.

Program One - a) Complete a minimum of two graduate astronomy courses other than Astronomy 541. b) Complete a thesis based on original astronomical research.

Program Two - a) Complete a minimum of three courses, including two graduate astronomy courses other than Astronomy 541. b) Complete a comprehensive review paper on an astronomical topic.

Program Three - a) Complete a minimum of four courses, including two graduate astronomy courses other than Astronomy 541. b) This program is normally restricted to students who have had substantial experience in astronomical research.

Ph.D. REQUIREMENTS

PhD applicants must have fulfilled the requirements for the MSc: An 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

Courses numbered 500-519 are offered starting in even years, those from 520-539 starting in odd years.

501. Stellar Atmospheres.
503. Galactic Structure.
***505. Variable Stars.**
***506. Galaxies.**
521. Stellar Interiors.
***523. Gaseous Nebulae and Interstellar Matter.**
***524. Photometry.**
***525. Spectroscopy.**
***526. Stellar Positions and Motions.**
***540. Astrophysical Laboratory.**
541. Advanced General Astronomy.
569. Research Review.
570. Topics in Astronomy (The topics considered will vary from year to year).
590. MSc Thesis.
690. PhD Thesis.

CHEMISTRY

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

*Half Course

to receive, an Honors degree in Chemistry from an accredited University or 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 may be 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 held in early September every year, and it is the responsibility of the incoming student 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, 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, stereochemistry 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 or fluorinated alkoxy groups. Single crystal x-ray structural studies of transition metal complexes. Determination of absolute configurations from the anomalous scattering of x-rays. Mossbauer 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.

All PhD candidates, before graduation, must furnish evidence of a reading knowledge of at least one of German, French or Russian. 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 †, 558, 590
PhD – 3 graduate courses +, 558, 690, Language

The courses of instruction listed below are provided by the Department. All courses will not necessarily be offered every year, and the contents may be modified from time to time to suit the specialized needs of individual students.

***504. Group Theory/** *D.M. Graham*

514. Molecular Spectroscopy/J.R. Bolton*

524. Electrochemistry/A.J. Sukava*

***533. Biorganic Chemistry/**J.P. Guthrie

***534. Dielectric and Magnetic Phenomena/** *R.K. Chan*

541. X-Ray Crystallography/N.C. Payne*

***543. Quantum Organic Chemistry/** *N.C. Baird*

***544. Chemical Kinetics/** *D.M. Graham*

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†A graduate course in 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.

*Half Course

***551. Inorganic Chemistry Topics/** *Inorganic Staff*

553. Physical Organic Chemistry/ *Organic Staff*

554. Statistical Mechanics/ *A.R. Allnatt*

558. Seminar/ *Staff*

***563. Organic: Modern Synthetic Methods/** *W.C. Howell, E.W. Warnhoff*

564. Solid State/ *P.W.M. Jacobs*

568. Research Proposition/*Organic Staff*
The selection and written presentation of one or more original 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).

573. Organic Problem Seminars/ *Organic Staff*
(This does not count as a formal graduate course, but it is a requirement for all Ph.D. candidates in Organic Chemistry).

574. Quantum Mechanics 1/ *W.J. Meath*

581. Spectroscopic Methods in Inorganic Chemistry/ *R.A. Haines, R.G. Kidd*

583. Organic: Photochemistry/ *P. de Mayo*

584. Advanced Physical Chemistry/ *D.M. Graham, J.W. Lorimer*

590. MSc Thesis and Research

***593. Nuclear Magnetic Resonance Spectroscopy/** *J.B. Stothers*

594. Advanced Thermodynamics/J.W. Lorimer*

603. Organic: Nitrogen Compounds/E.W. Warnhoff*

613. Organic: Sulfur Compounds/J.F. King*

614. Molecular Spectroscopy II./J.C.D. Brand*

623. Organic: Carbanions/D.H. Hunter*

633. Organic: Selected Topics/Organic Staff*

***653. Organic: Selected Topics/** *Organic Staff*

***661. Organometallic Chemistry/** *H.C. Clark*

***663. Organic: Natural Products/** *E.W. Warnhoff*

***673. Organic: Stereochemistry/** *J.F. King*

674. Quantum Mechanics 11/ *W.J. Meath*

***681. Inorganic Reaction Mechanisms/** *H.W. Baldwin*

684. Molecular Orbital Theory/ *N.C. Baird*

690. PhD Thesis and Research

*Half Course

COMPUTER SCIENCE

REQUIREMENTS FOR THE MSc DEGREE IN COMPUTER SCIENCE*

Students who do not have an Honors BSc in Computer Science enter the following two year graduate program leading to an MSc Degree in Computer Science:

Prerequisite Year: A minimum of four courses at the 300 and 400 level, three of which are normally CS 304, 313 and 405.

Second Year: Normally two graduate courses in Computer Science and a thesis. With the permission of the department, the thesis may be substituted either by a project and an additional course or by two more courses.

Students with an Honors degree in Computer Science or equivalent may enter directly into the second year of the program. Arrangements may be made for part-time enrolment in the graduate program.

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.*

500. Mathematical Foundations of Computer Science. Selected topics in present research areas in mathematics created by the advent of the computer: number systems for computers, algebraic foundations of Computer Science, mathematical models of computation, foundation of mathematical linguistics; computer oriented topics in combinatorics, graph theory and probability theory.

501. 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.

502. 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.

503. Theory of Approximation. Approximation of one – and several – dimensional functions, approximation in abstract spaces, approximation by linear families with respect to a norm, uniform approximation by non-linear families; algorithms for best approximations.

* See also General Admissions Requirements

504. Artificial Intelligence. A study of the classic treatments of game playing, theorem proving, problem solving heuristics, pattern recognition, question answering, industrial process control, studies in robotics.

505. Computer Simulation of Complex Processes. Use of digital computers to study complex, interactive systems. Design of sampling plans. Real-time automatic data-acquisition techniques. Formulation and validation of mathematical models, and their use in evaluating alternative policies and predicting system behaviour.

506. Topics in Statistics and Information Processing. Theories of information and communication, applications of computers to statistics, applications of statistics to information processing, information systems for computer assisted instruction.

507. 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.

508. 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.

512. Sequential Machine Theory. Synchronous and asynchronous sequential machines, generalized and incomplete machines, iterative, time-variant and probabilistic machines. External and structural properties, decomposition and synthesis, application to computer design and decision problems.

513. Theory of Recursive Functions and Computability. Turing machines, mathematical logic and computable functions, unsolvable problems, degrees of recursive unsolvability, classification of functions by computational complexity.

514. Advanced Programing Systems. Hardware (1st half): Timing analysis of circuits, architecture of small computers, languages for hardware. **Softward (2nd half):** Basic architecture of large systems, multiprograming 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 techniques.

516. Computer Assisted Instructional Systems. The analysis of systems and programing requirements for computer-assisted and computer-managed instruction, computer controlled learning aids and data acquisition systems, the implementation of computer-assisted instruction. Cybernetic models of learning processes. Each student will carry out the analysis and design of a specific system.

523. 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.

533. 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.

580. Project.

590. Thesis.

ENGINEERING SCIENCE

Three degrees are offered in Engineering Science. The M.E.Sc. and Ph.D. are based on research while the M.Eng. is based on course work. Arrangements may be made for part-time enrolment in all programs.

MASTER OF ENGINEERING SCIENCE

For M.E.Sc. 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 or Honor courses offered in other University departments.

Included are such courses as Mathematics, Computer Science, Chemistry, Physics, Geology, and Medical Sciences.

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 (M.Eng.) 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. M.Eng. 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 Ph.D. 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 Ph.D. 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.

COURSES

Note: All of the following courses may not be offered.

500. M.Eng. 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./ *I.I. Inculet*
(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 nonengineering students; no prerequisites)./ *T. Bonnema*
(2 hrs/wk lectures, 1-½ 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*
(1 hour, both terms)

*Half Course

***512. Advanced Chemical Reactor Design.** Non-ideal 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)

***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 reactors./ *M.A. Bergougnou*
(2 hours, first term)

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 biocehmical 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 kinetics./ *J.E. Zajic*
(1 hour, both terms)

516. Chemical Process Simulation. Simulation of chemical plants on the computer. Convergence and optimization problems in chemical plant simulation. / *J.M. Beeckmans*
(2 hours, both terms)

517. Advanced Chemical Process and Plant Design. Detailed application of advanced techniques for optimum design of chemical processes and plants./ *M.A. Bergougnou*
(both terms)

518. Advanced Process and Plant Design. Process engineering study of a new process. Detailed design of reactors, distillation columns, contols, 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 statistics with applications to civil engineering. Theoretical probability distributions, sampling theory, probability of failure and reliability./ *A.G. Davenport*
(2 hours, first term)

***520B. Random Vibrations.** Theory of random vibrations with applications to structural design. Theory of extreme values illustrated using problems in loads and material strengths. Response of multi-degree-of-freedom systems to random shock loads such as wind and earthquake. Simple

*Half Course

physical models of wind and earthquake as quasi-stationary phenomena. Fatigue failure criteria. An integrated approach to structural design philosophy in which the loadings, the structural response and material properties are treated as a unity. (students should have or else take concurrently a basic course in dynamics such as 546 - Mechanical Vibrations)./ *A.G. Davenport*
(2 hours, second term)

***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)

***521B. Reinforced Concrete.** Ultimate strength analysis and design methods for structural elements. The background to general code requirements are considered and design examples given./ *M.P. Poucher*
(2 hours, second term)

***522A. Advanced Soil Mechanics I.** Prerequisite: 426 or equivalent. The theoretical principles and practical application of effective stress to stability and consolidation problems. Shear strength, soil deformation, failure criteria. Principles of stability analyses and theory of consolidation including the influence of ground water seepage./ *R.M. Quigley*
(3 hours plus 1½ hours laboratory, first term)

***522B. Advanced Soil Mechanics II.** Prerequisite: 522A or equivalent. Special topics not covered in detail in 522A are discussed in this course. The actual content varies from year to year depending on the interests of the participating staff members and visiting professors. Such subjects as soil dynamics, theoretical stress distribution, special problems in slope stability, computer applications, etc., are presented./ *Staff*
(3 hours, second term)

***523. Geotechnical 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*
(2 hours, second term)

***524A. Elasticity I.** Theory of deformations. Equilibrium equations. Energy principles. Applications./*S.H. Abu-Sitta*
(2 hours, first term)

***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 behavior of plates, considering various shapes, loads and boundary conditions./ *S.H. Abu-Sitta*
(2 hours, first term)

***525B. Plates and Shells II.** Membrane and bending behavior of cylindrical shells, translational shells and shells of revolution. Edge disturbance theory. Numerical methods./ *S.H. Abu-Sitta*
(2 hours, second term)

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*

***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*

***528. Seepage.** Prerequisite: 426 or equivalent. 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*
(3 hours, first term or second term)

***529A. Foundation Engineering I.** Prerequisite: 426 or equivalent. Current practice in the design of foundations for all types of structures. Spread footings, raft and piled foundations, bulkheads and retaining walls, floated foundations, sheeted excavations, etc./ *Staff*
(3 hours plus 1½ hours laboratory, first term)

***529B. Foundation Engineering II.** Prerequisite: 529A or equivalent. Complex design problems are discussed with special emphasis on such subjects as foundation vibrations and soil structure interaction, floated foundations, tunnel design, etc. The actual course content will vary from year to year depending on staff interests./ *Staff*
(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 interconnected 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 magneto-static fields, electromagnetic fields, plane waves, cylindrical waves, spherical waves, radiation, boundary value problems./ *G.F. Chess*
(2 hours, both terms)

536. Control Systems. The analysis and design of linear systems is extended to include some elements of system optimization. Non-linear systems are examined using both describing function and phase plane techniques./ *G.F. Chess*
(2 hours, both terms)

537. Optimization Theory for Control Systems. State-determined dynamic processes; optimization using calculus of variations; dynamic programming; linear optimum control systems; computational method for two-point 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 and J.D. Brown*
(2 hours, both terms)

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*Half Course

***540A. Principles of Nuclear Reactors.** Nuclear energy and nuclear reactions, 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)

***540B. Nuclear Reactor Engineering.** Nuclear reactor systems and characteristics. Engineering design aspects — materials, energy removal, power plant./ *G.S. Emmerson*
(2 hours, second term)

***541. Mechanical Analysis and Measurements.** Selected topics in mechanical design involving experimental 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 term)

***542A. Viscous and Boundary Layer Theory.** Viscosity, review of vectors and tensors, the Navier-Stokes Equations, the viscous flow energy equation 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)

***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)

***543A. Classical Thermodynamics.** Review of First and Second Law, availability and irreversibility, thermodynamic relationships, and dissociation in chemical reactions./ *A.T. Olson*
(2 hours, first term)

***543B. Statistical Thermodynamics.** Introduction to Kinetic theory of ideal and real gases. Some models for the thermodynamic and transport properties of real gases will be studied./ *E.S. Nowak*
(2 hours, second term)

***544A. Conduction Heat Transfer.** One and two-dimensional conduction, variable conducticity, numerical solutions and advanced topics./ *E.S. Nowak*
(2 hours, first term)

***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)

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*Half Course

*545A. **Energy Conversion.** Review of energy sources, methods of energy release such as combustion, and methods of energy conversion including turbomachinery, positive displacement machinery and non-conventional methods. Economics of plant selection.
(2 hours, first term)

*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 utilisation./ *R.K. Swartman*
(2 hours, second term)

*546A. **Mechanical Vibrations I.** Single degree of freedom systems, transient vibrations, Laplace transforms, non-linear vibration, self-excited vibrations, dynamic stability./ *M. Novak*
(2 hours, first term)

*546B. **Mechanical Vibrations II.** Multi-degree of freedom systems, Lagrange's equations, generalized coordinates continuous systems, vibration of strings, beams, frames, membranes and plates, movable load on beams./ *M. Novak*
(2 hours, second term)

547a. **Shock in 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 discussion of free convection. Boussinesq approximation. Plumes, thermals, forced plumes and 'buoyant' vortex rings in various environmental conditions. Density currents. Rayleigh-Jeffreys instability and Bernard cells. Langmuir helical vortices. Bubble induced convection./*P.J. Sullivan*
(3 hours/week, first term.)

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 waves; 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 bandwidth; critical band and masking; loudness, annoyance 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 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)

553. **Nuclear Engineering Materials.** The mechanical, physical and chemical requirements of materials for power reactors, with special reference to fuels, sheathing and shielding materials, coolants and structural components. Behavior of fuel elements in service. Problems related to corrosion, radiation damage and high temperature./ *C. Roy*
(2 hours, both terms)

554. **Spectroscopic Methods Applied to the Study of Engineering Materials.** Theory of spectra in infrared, visible, ultraviolet and x-ray regions, instrumentation, application to the study of material properties, examples from the literature, nuclear resonance techniques./ *J.D. Brown*
(2 hours, both terms)

555. **Chemical Properties of Materials at High Temperatures.** The interaction of materials with their environment at high temperatures. Thermodynamics of high temperature chemical processes and stability. Recent developments in high temperature engineering materials./ *J.S. Sheasby*
(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)

*556B. **Advanced X-Ray Techniques.** Prerequisite: 556A or equivalent. Study of x-ray methods for chemical analysis, determination of particle size, grain orientation, crystal structures, (complex) deformation and relaxation./ *I.J. Duerden*
(2 hours, second term)

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)

*Half Course

*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./*Staff.*
(1 hour lecture, 2 lab hours, both terms)

560. Biochemical Engineering Seminar. Lectures and discussions on applied enzyme kinetics, biocatalysis and continuous fermentations. Mathematics and automatic controls are emphasized. Students are expected to present seminars also./ *J.E. Zajic*
(1 hour, both terms)

***561. Air Pollution.** Methods of generation, measurement and control. Pollutants considered are carbon monoxide, hydrocarbons, nitrogen oxides, sulphur dioxide, particulate matter. and noise./ *I.I. Inculet and J.M. Beeckmans*
(3 hours, second term)

***562. Water Pollution.** Methods of generation, measurement and control. Topics included are domestic sewage, chemical manufacturing wastes, radioactive substances, chemical and sediments from land erosion, heat from power and industrial plants./ *J.E. Zajic*
(3 hours, first term)

***563. Industrial Processes.** This course provides a synoptic view of major industrial processes with special emphasis on the operations and problems relevant to control of waste by-products./ *W. Bulani*
(2 hours, second term)

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; 4½ 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./ *C.G. Morley*
(2 hours, second term)

***566. Medical Effects of Air and Water Pollution on Human Life.** A survey of organic and inorganic air pollutants, gaseous and particulate, with reference to their effects upon man. Clinical medical disease, epidemiology and survey methodology, wtih regard to both community and occupational industrial air pollution./ *N.M. Lefcoe*
(2 hours, first term)

567. Environmental Engineering Seminar. A special course reviewing the latest developments in environmental engineering/ *W. Bulani*
(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. (1) sampling (2) measurements of major pollutants (3) settling chambers (4) centrifugal separators (5) scrubbers (6) filters (7) electrostatic precipitators (8) conic precipitators (9) removal of gaseous pollutants./ *I.I. Inculet*
(3 hours, second term)

***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)

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)

***572a. Plastic Analysis.** Plastic analysis of frames and plates. Rigid plastic theory, elastic-plastic theory, strainhardening. Minimum weight design of frames. Multistorey frames. Stability. Yield line theory for flat plates./ *B.J. Vickery*
(2 hours, first term)

***572b. Plasticity.** Prerequisite: 572A or equivalent. The stress tensor, yield conditions, plastic analysis of plates and shells, impulsive loading of simple structures./ *A.J. Frick*
(2 hours, second term)

*Half Course

*Half Course

574. Topics in Numerical Analysis for Engineers. Approximate and variational methods in elastic problems. Finite difference method. Finite element method. Matrices. Direct and indirect solution of simultaneous linear equations. Determination of Eigenvalues. Emphasis is placed on the application of these methods to practical problems./ *S.H. 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)

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.*
(2 hours, first term)

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.*
(2 hours, second term).

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 distrubution aroun an elliptic crack. Griffith and extended Griffith theor of rapture. Phenomenogical theories. Statistical aspect of strength of rock.

Mechanical behavior 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)

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)

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)

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)

581. Advanced Unit Operations. Methods of calculating and predicting thermodynamic equilibria and physical rate processes will be examined and utilized to evaluate separation techniques./ *Staff*
(2 hours, both terms)

582. Chemical Process Control. Application of feed-back, feed-forward, adaptive and direct digital control to chemical processes./ *Staff*
(2 hours, both terms)

590. M.E.Sc. Thesis

611. Applied Catalysis II. Prerequisite: 511 or equivalent. A continuation of the subject matter of 511 with emphasis on recent developments and the theory of heterogeneous catalysis./ *K.A. Shelstad*
(2 hours, both terms)

612. Selected Topics in Chemical Engineering. The choice of topics discussed varies somewhat from year to year but centers 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)

***620A. Advanced Science of Structures.** Prerequisite: 520A and B or equivalent. A continuation of 520A and B. Advanced problems and more detailed application such as the design of tall buildings, towers suspension bridges./ *A.G. Davenport*
(2 hours, first term)

***620B. Advanced Science of Structures II.** Prerequisite: 620A or equivalent. A continuation of 620A./ *A.G. Davenport*
(2 hours, second term)

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, including case histories of difficult design and construction problems./*K.Y. Lo.*
(2 hours, first term)

622b. Advanced Topics in Geotechnical Engineering II. Continuation of "I" above./*K.Y. Lo.*
(2 hours, second term)

*Half Course

*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, first term)

***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)

***660. Advanced Biochemical Engineering Seminar.** Lectures and discussion on new process developments in Biochemical Engineering. Course covers processes for the manufacture and recovery of enzymes, amino acids, steroids, antibiotics, vitamins and other new biochemical products./ *J.E. Zajic*
(1 hour, both terms)

690. PhD Thesis.

GEOLOGY

ADMISSION

Detailed instructions may be obtained by writing the Graduate Student Co-ordinator, Department of Geology. All graduate students upon first registration write a comprehensive examination to guide the faculty advisors in course selection.

MSc degree: Minimum requirements are two graduate or equivalent courses, one year residence, seminar, and thesis.

PhD degree: Minimum requirements from an Honors BSc degree are four graduate courses or equivalent, oral qualifying examination, three years residence credit, foreign language, 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

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.

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 brachipods, corals, graptolites 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

515. Advanced Mineralogy and Crystallography. Introductory X-ray crystallography, powder methods, advanced mineralogical concepts, illustrated by reference to the crystal chemistry and structural crystallography of selected mineral groups./ *J. Starkey*

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*

520. Igneous Petrology. Assessment of equilibrium and non-equilibrium processes in silicate systems. Origin and subsequent changes of state of magma in relation to regional tectonic setting./ *A.D. Edgar*

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.

527. Structural Petrology. Introduction to the techniques and principles of petrofabric analysis. Selected topics and applications./ *J. Starkey*

530. Advanced Geochemistry. Selected topics considered in detail./ *M.E.L. Fleet*

539. Sulphide Phase Equilibria and Their Applications to Ores. Basic thermodynamic principles sufficient for understanding sulphide phase equilibria, details of the important sulphide

*Half Course

systems, basic laboratory methods and procedures, and applications to naturally occurring ore-mineral assemblages will be presented./ *N.D. MacRae*

540. Structural Geology. Principles of geomechanics and theories of rock deformation; structural analysis./ *W.R. Church*

542. Geotectonics. Selected topics./ *W.R. Church*

544. Regional Metamorphism. A study of metamorphism as a phenomenon associated with orogenesis./ *W.R. Church*

550. Economic Geology. Study of recent literature on theories of ore deposition together with original laboratory work on ore suites of current interest. Informal discussions pertaining to same. */R.W. Hodder*

551. Iron Ore Deposits. A study of the various types of iron ores throughout the world, with consideration of their relative importance to the steel industry. A detailed study of a prominent North American deposit.

552. Non-Ferrous Base Metal Deposits of Canada. A survey of actual and potential producers. The position of Canada with respect to world production, consumption and exports. A study of the properties and operations of a large Canadian company.

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*

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*

555; Genesis of Base Metal Massive Sulfide Deposits. Comparison of different types of massive sulphide deposits, consideration of their metallogenic relationships and distribution in space and time. Study of recent literature on theories of their genesis. Lectures, seminar-discussions and original laboratory work or literature review./ *R.W. Hutchinson*

Note: 553, 554, 555 are given in successive years; 553 is planned tentatively for 1971-72.

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*

560. Stratigraphy. An advanced course on stratigraphic principles./ *C.G. Winder*

564. Advanced Sedimentation. Formation of sediments by physical, chemical and biological processes./ *G.M. Young*

567. Advanced Glacial Geology. Selected topics./ *A. Dreimanis*

568. Advanced Pleistocene Geology. Stratigraphy and correlations./ *A. Dreimanis*

Note: 567 and 568 are usually given in alternate years; 567 is planned for 1971-72.

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 courses in sedimentation and invertebrate paleontology./ *C.G. Winder* (not available 1971-72.

570. Micropaleontology. Morphology, classification, ecology, and stratigraphic occurrence of principal forms. Conodonts are emphasized; laboratory exercises and problems./ *C.G. Winder*

571. Palynology. With emphasis on pollen analysis and its applications in geology and archeology./ *A. Dreimanis*

575. Invertebrate Macropaleontology. Advanced study of selected groups of Paleozoic invertebrates./ *A.C. Lenz*

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*

581. Graduate Seminar/ *Staff*

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*

690. PhD Thesis.

GEOPHYSICS

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.

COURSES

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*

510. Terrestrial Heat Flow. A course dealing with the instrumentation and techniques of measuring heat flow over land and ocean; the significance of the shield, non-shield and oceanic mean values and their bearing on the evolution and thermal history of the earth; the use of heat flow data as an aid in structural geology; the economic uses of geothermal power./ *A.E. Beck*

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, reflection, 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 ½ 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.

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 the 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.

MATHEMATICS

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: 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.

M.A. Degree

(1) A candidate with a General Bachelor's Degree will be required to enroll in a Prerequisite Year in which he shall complete satisfactorily a minimum of five undergraduate Honors Mathematics courses in addition to fulfilling the requirements specified below for a candidate with an Honors Degree.

(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.

Ph.D. 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.

COURSES

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.

515. Algebra.

516. Theory of Groups.

517. Theory of Semigroups

518. Theory of Rings.

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.

PHYSICS

The research interests of the Department are listed below. For greater detail please consult our graduate brochure which is available in many Departments or may be obtained by writing to this Department.

Atomic and Molecular Physics. Theoretical atomic and molecular structure; theoretical and experimental collision studies involving electrons, ions, positrons, atoms, and molecules; investigation of molecular gas and ionic lasers; non-linear interactions; photoabsorption studies of gases and plasmas in the millimetre and sub-millimetre regions; vacuum ultraviolet radiation interaction with gases.

Physics of the Lower Atmosphere (Troposphere). Studies of thermal convection and atmospheric electricity; vapor, heat and charge transfer in clear air and storm systems.

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, and ground-based detectors; radio aurorae; airglow; radio emissions from the sun at metre wavelengths.

Solid State Physics. Theoretical studies of amorphous materials, metals, and superconductivity; theoretical and experimental studies of band structure of solids, work functions; surface physics; experimental studies of properties of ionic compounds; diffusion of positrons in solids; interaction of sub-millimetre radiation with solids.

Design and Applications of Accelerators. Racetrack microtrons as sources of electrons and millimetre and sub-millimetre waves, X-rays, and vacuum ultraviolet radiation.

Other Programs are being actively followed in Acoustics – resonances in the violin family; theoretical Nuclear Physics – nuclear models; Radiological Physics – medical applications of high energy electron and X-ray beams, and of ultrasound.

Much of the research within the Department is relevant to Astrophysics; Communications, including satellites; Meteorology; Pollution; Radiological Physics; Switching devices; Thermionic emission.

Many of the above projects are inter-disciplinary, carried out in conjunction with the Departments of Applied Mathematics, Astronomy, Biophysics, Chemistry, the London clinic of the Ontario Cancer Treatment and Research Foundation, and the Faculty of Engineering Science. Much of the above research is carried out under the auspices of the Centre for Radio Science, which maintains laboratories both on and off campus.

MSc REQUIREMENTS

The *minimum* requirements for the MSc degree in Physics may be met in any one of the three following ways:

(i) One course selected from courses numbered 501-520
Plus. One course selected from courses numbered 501-549
Plus. A research thesis (590)

OR

(ii) Two courses selected from courses numbered 501-520
Plus. One course selected from courses numbered 501-549
Plus. A report or review paper (591)

OR

(iii) Physics 501
Plus. Two courses selected from courses numbered 502-520
Plus. One course selected from courses numbered 502-549

Note: With permission of the candidate's advisory committee some graduate courses in other Departments may be substituted for those listed above.

With similar permission, one of the graduate courses may be replaced by
a) two undergraduate courses normally in the Undergraduate Physics Program.
b) One undergraduate course at the senior undergraduate level from outside the department.

PhD REQUIREMENTS

The *minimum* requirements for the PhD degree in Physics are: Physics 501, Physics 601, Physics 658.
Two courses selected from courses 502-549.
Competence in a language in addition to the English Language.
Competence in digital computer programming.
A research thesis (690).

Note: Credit for a maximum number of two graduate courses may be granted to candidates who hold an MSc degree.

Honors graduates of exceptional ability may be permitted to register directly into a preliminary year of a PhD program. During this year the minimum requirements are: Physics 501, one course selected from courses numbered 502-549, a review paper (591) related to the area of the proposed doctoral thesis.

COURSES

501. Quantum Mechanics. A first graduate course in quantum mechanics designed to follow undergraduate work in modern physics with introductory quantum mechanics.

502. Nuclear Physics. An introductory course in both experimental and theoretical aspects of modern physics, including nuclear models, nuclear reactions and particle physics.

503. Statistical Mechanics. Fundamental principles of statistical mechanics and statistical thermodynamics. Applications will be drawn from physical chemistry, solid state physics, nuclear physics, etc.

504. Solid State. A course outlining the basic experimental and theoretical concepts of modern solid state physics. Some graduate work in quantum mechanics is a pre- or corequisite.

505. Classical Electrodynamics. Advanced topics in electromagnetic theory, including radiating systems, radiation by moving charges, multipole fields, etc.

521. Ionized Media in the Terrestrial and Solar Atmospheres. (A) (One Term) An introduction to the phenomena of ionized media in the terrestrial and solar atmospheres. (B) (One Term). The use of radio waves as a diagnostic tool in the investigation of ionized media in the terrestrial and solar atmospheres.

522. Physics of the Lower Atmosphere. An introductory survey of the physical processes in the terrestrial atmosphere from the surface to the lower stratosphere. (A) (One Term) Micrometeorology — transfer of heat, moisture, momentum and pollutants, near the earth's surface. (B) (One Term) Atmospheric Dynamics, Precipitation and Electricity — Larger scale air motions, phase transitions and precipitation, and electrical phenomena associated with both fair weather and thunderstorms.

523. Electromagnetic Radiation in the Submillimetre Region. The generation of electromagnetic radiation by lasers and relativistic electron beams; quasi-optical detection techniques; intensity and wavelength measurements; interactions with media in the gaseous and solid state.

524. (A) (One Term) — Collision Theory. A discussion of topics in the quantum theory of collision processes with emphasis on applications to atomic physics.

525. Theoretical and Applied Spectroscopy. A study of the spectra of atoms and diatomic molecules, leading to a detailed insight into their structure; a selection of topics in modern spectroscopic applications.

526. Radiation Dosimetry. (A) (One Term). Introduction, therapy, and implications. **(B) (One Term).** Instrumentation, apparatus and methods.

590. M.Sc. Thesis.

591. A report or review paper for MSc candidates in option (ii) or candidates in the preliminary year to a PhD.

601. *Comprehensive Examinations.* A required examination for PhD candidates, normally taken in the autumn of the year in which the PhD program is started. For students arriving in the autumn, it may be postponed until the following spring. Its primary purpose is to detect weaknesses in the candidate's

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 allowed.

658. The Graduate Seminar.

690. PhD Thesis.

Note: Courses bearing the letters A or B are half courses for the purposes of credit. A candidate may register in A or B or both where applicable.

SOCIAL SCIENCES DIVISION

BUSINESS ADMINISTRATION

The objective of the Master of Business Administration program is to develop professionally qualified managers. The two years of the program are concerned with the analysis of business problems and decision-making in organizations. During the first year, all students are required to take an integrated set of courses in the areas of marketing, production, finance, control, administrative practices, quantitative analysis, and economics. Through the classroom discussion of cases, emphasis is placed on the development of verbal communication skills. Emphasis is also placed on written communications through a business report program, and on the development of effective interpersonal relations through group projects and study sessions. In the second year, the equivalent of five full courses is required. Of these, Business Policy is mandatory; the balance being chosen by the student from among those offered in various fields. Most of the second year courses are half-year courses, allowing up to eight half-year options.

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 required 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 in Business (ATGSB). Test applications are available for both tests from Educational Testing Service, 20 Nassau St., Princeton, New Jersey 08540.

For further information and application forms, write the Secretary of Admissions, School of Business Administration, London 72, Ontario, Canada.

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 its emphasis on economics, quantitative analysis, behavioral 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, control, finance, production, organizational behavior 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 72, Ontario.

ECONOMICS

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

Math 254. Mathematics for the Social Sciences.

505a. Introduction to Statistics.

505b. Introduction to Econometrics.

510. Mathematical Economics.

533a. Monetary Theory.

533b. Monetary Institutions.

534a. Industrial Organization.

534b. Industrial Organization Policy.

537. North American Economic History.

538. Economic Development.

539. Regional Economics

540. Macro-economics.

547. European Economic History.

551a. International Trade Theory.

551b. International Trade Policy.

555. Econometrics.

560. Micro-economics.

563a. Public Finance.

563b. Fiscal Economics.

575. Economics of Human Resources.

580. Recent Developments in Economic Theory.

599. Capital and Growth Theory.

590. MA Thesis.

690. PhD Thesis.

A full range of advanced courses (at the 600 level) and reading courses (at the 700 level) are available in the above listed subjects.

All courses will not necessarily be offered in any one year; (a) denotes first term and (b) second term, otherwise courses are for both the Fall and Winter terms.

GEOGRAPHY

COURSES

500. Mathematical Models in Geography. The application of various models to geographic patterns. Concepts, theories and techniques currently in use in Geography and other Social Sciences will be examined and applied to research problems./ *M.F. Goodchild*

502. Seminar on the teaching of geography/ *E.G. Pleva*

522. Development Aspects in Industrializing Nations. The social, economic, political and spatial structure and inter-related development problems in selected countries or regions. (Offered jointly with Political Science and Sociology)/ *H.A. Hosse and Staff*

530. Advanced Climatology. Examination of selected topics in theoretical, practical and applied climatology.

531. Advanced Geomorphology. Theoretical and applied problems in geomorphology./*R.W. Packer, R. King*

532. Cultural Geography. Discussion of a process-oriented theoretical and quantitative discipline of cultural geography with specific reference to both scientific and humanistic approaches./ *A.K. Philbrick*

533. Urban Analysis. The application of empirical and theoretical models to urban problems, including a review of the recent literature and the use of various techniques on local problems. / *D.G. Janelle*

***534a. Urban Planning.** Problems of urbanization; concepts and processes of planning for urban development; critical evaluation of current practices. /*H.A. Hossé*

***534b. Regional Planning.** Systems approach to comprehensive regional development; spatial relationship of inter-actions within a region; examination of selected regional development schemes. /*H.A. Hossé*

***535a. Development and Management of Natural Resources.** Analysis of water use problems with emphasis on river basin development and water quality management. (Fall Term)

***535b. Development and Management of Natural Resources.** Analysis of problems related to the use, misuse and deterioration of mineral, soil, biotic and landscape resources. (Winter Term)/*J.D. Day*

***535e.** As 535a. but for Engineering Science students (Winter Term)

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*

***539a. Methods of Regional Analysis.** An examination of the nature and application of social accounts, statistics, and mathematics to spatially-oriented problems of socioeconomic development. */R. McDaniel*

***539b. Complex Spatial Systems Analysis.** An examination of the nature and implications of the global trend toward automated information systems and spatial model building. */R. McDaniel*

*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*

541. Advanced Cartography. Studies of modern map making and atlas techniques; design and execution of cartograms./ *R.W. Packer*

543. Field Methods and Practices. Departmental field camps and field trips as arranged. Mandatory for all M.A. students./ *Staff*

***545. Studies of the Great Lakes Basin.** */E.G. Pleva*

547. Studies in Historical Geography. Methods, techniques and current research with special reference to Canada and Ontario./ *W.R. Wightman*

548. The Foundations of Geography. Discussions of the fundamentals of geography with particular reference to research and the problems of the Masters' thesis. Examination of the scope of geography as illustrated by the Departmental program and by visiting speakers./*N.L. Nicholson, R.W. Butler*

560. Canada. Current research problems of national significance with emphasis on resource survey and development./ *N.L. Nicholson*

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*

570. Latin America. Discussion of the problems of Latin America with particular emphasis on emerging social patterns and resource development./ *H.W. Taylor*

580. The St. Lawrence Lowlands. The background, development and current issues in the Human Geography of southern Ontario and central Quebec./ *C.F.J. Whebell*

***581a. Biogeography.** Principles of the distributional patterns of plants and animals with special reference to southwestern Ontario.
/C.F.J. Whebell

590. MA Thesis/*Staff*

643. Field Methods and Practices. Departmental field camps and field trips as arranged. Mandatory for PhD students./*Staff*

***645. Problems in Environmental Analysis.**
/E.G. Pleva

648. Current Topics in Geography. A Senior Seminar for PhD Students./*Staff*

690. PhD Thesis/*Staff*

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*Half Course

HISTORY

ADMISSION AND DEGREE REQUIREMENTS

Candidates should read the general university regulations for the MA and PhD degrees given elsewhere in the Announcement. Candidates are admitted at the discretion of the Department.

MA DEGREE

Admission requirements and period of study.

(1) Applicants with a first or second-class Honors degree or the equivalent in History may normally proceed to the MA degree by spending the Fall and Winter terms of one academic year in residence, if registered in the MA by thesis program, or one calendar year (Fall, Winter and Summer Terms), if registered in the MA by course program.

(2) Applicants possessing a first or second-class General Program degree, with History as their major subject, must normally enrol in a two-year program and spend two years in residence. During the first or Prerequisite year, such candidates will take four undergraduate Honors courses to equip them for graduate work. Admission to the second year depends on a student's performance in the Prerequisite year courses, with a middle B (UWO 74%) average as minimum qualification to proceed.

For admission to the Prerequisite year, candidates require a middle B average in the five History courses already taken. Those with less than middle B averages may be admitted at the discretion of the Department, if they are recommended by at least two instructors acquainted with their work, and if their standing in related subjects is deemed satisfactory.

Degree Requirements

Candidates may proceed to the MA degree by either the thesis or the course program. In either case, however, they must demonstrate their reading knowledge of one language, acceptable to the Department, other than English (or French when this is their mother tongue). The language requirement will normally be met before November 30.

(1) MA by thesis: The major requirement is a thesis, based on original research and demonstrating capacity for independent critical judgment. The student will submit to his supervisor an outline of his projected thesis research early in November of his MA year. When the thesis has been completed, the student will be examined orally on it and on the field in which it falls.

Candidates will take at least two graduate courses. A graduate course may be selected from among those offered in other disciplines, but in such cases the permission of the Department of History and of the other Department concerned is required. Similarly an Honors undergraduate history course

may, with the permission of the Graduate Committee, be selected, but in this case the student will complete additional assignments.

Students are urged to complete their thesis before the fall of the year following that in which they enrolled; and in any case they must submit their theses not later than 15 August of the third year after completion of the course work. If a thesis is not ready for submission within this period of time, it will be necessary for the candidate to make application to the Graduate Committee for re-admission to the program and re-registration of his thesis topic.

(2) MA by Course: The MA by course program covers a full calendar year of studies (September to September) in which the student will first take four courses during the regular academic year (September to May) and then devote the summer to preparing for comprehensive examinations in three fields. The comprehensives will be held in the two weeks immediately preceding Fall registration.

At least two of the courses must be graduate courses, one in British or European History and one in Canadian or United States History. The two additional courses may be from the third and fourth year History Honors Program with the permission of the Chairman of the Graduate Committee. A student may take a graduate course or an Honors course in another discipline as a substitute for either of the Honors courses, with the permission of both the department concerned and the History Department.

In choosing the courses the student should keep in mind the fields which he has selected for examination. However, none of the graduate courses will be as broad as the field, and none of the undergraduate courses as intensive; a student will therefore find it necessary to read widely on his own. The fields are in Canadian, United States, English, European, or general history and the student may select one area from each field after consultation with the Department.

PhD DEGREE

Special regulations governing the PhD degree are available from the Chairman of Graduate Studies in the Department of History.

COURSES

505. Urbanization and the Growth of Elites in British North America, 1759-1880./*F.H. Armstrong*

508. Social, Economic, and Cultural History of Ontario./*J.J. Talman*

511. Post-Confederation Federal Elections./ ***D.G.G. Kerr***

513. The Opening of the Canadian North./ ***M.Zaslow***

515. Canadian-American Relations./*H.M. Wade* (Not offered 1971-72)

523. Tudor and Early Stuart England./*J.R. Lander*

525. Science and Society in Eighteenth Century England./*W. Balderston* (Not offered 1971-72)

527. British Government and Politics, 1760-1852./ ***F.A. Dreyer***

531. The Medieval Monarchy: Papal and Feudal, 1050-1216./*J.G. Rowe*

544. French Society and Government, 1763-1852./ ***J.P. McLaughlin*** (Not offered 1971-72)

553. Selected Topics in U.S. Business History, 1860-1920./*R.C. Overton* (Not offered 1971-72)

565. Selected Topics in the First British Empire./ ***I.K. Steele***

570. Historiography and the Philosophy of History./ ***W.K. Ferguson***

578. Selected Topics in the History of Warfare./ ***A.M.J. Hyatt***

581. Selected Topics in International Relations./ ***K.H.W. Hilborn***

587. Reading Course to be undertaken in consultation with a member of the Department.

590. MA Thesis.

686. Directed Study.

690. PhD Thesis.

Note: Facility in reading French is necessary for students wishing to take History 544. For History 531, students should have a good reading knowledge of one of the following languages: French, German, Italian, Latin.

LIBRARY AND INFORMATION SCIENCE

Application forms may be obtained from either the Faculty of Graduate Studies or the School of Library and Information Science. Students may enter the MLS course of studies in the fall, winter, or summer term. An orientation period of a week is required of students in advance of the academic term which they enter. Part of the orientation consists of an introduction to computer work for those who lack such preparation; the purpose is to provide a foundation for computer applications and studies in the School.

Required courses are offered every term. Other courses may also be offered every term but in general are offered at least once in every three terms although there may be exceptions, especially in the 560 series. Each course is technically a half-course, i.e., it is completed in one term; but some courses are linked chronologically with others in the same group. For more information, refer to Calendar of School of Library and Information Science.

COURSES

500. Foundation Studies./*Staff*

500. Masters Seminar./*Staff.* Required in the students final term

501. Old World Intellectual and Cultural Foundations./*W.J. Cameron*

502. New World Intellectual and Cultural Foundations./*W.B. Ready*

503. Bookcollecting and Librarianship./*W.S. Debenham, W.B. Ready.*

510. Professional Theory and Methodology./*Staff*

511. Humanities./*A.J. Jamieson, J. Fyfe.* Required in the first term

512. Social Sciences./ *L.C. Colvin, F. DeHart, J.H. White.* Required in the second term

513. Science and Technology./*G.R. Pendrill.* Required in the third term

514. Special Topicsin the Humanities./*Staff*

515. Special Topics in the Social Sciences./*Staff*

516. Special Topics in Science and Technology./*Staff*

519. Problems in the Organization of Information./*L.C. Colvin*

520. Administrative Theory and Practice./*Staff*

521. Principles and Practice./*C. Held, P. Scott*

Required in the First Term

522. Library Architecture./*M. Beckman, S. Langmead.* Required in first term

523. Library Theory and Practice./*R.G. Prodrick.* Required in the second term

524. School Theory and Practice./S.D. Neill, C. Held

528. Higher Education./*Staff*

529. Special Libraries./ *J. White, G.R. Pendrill*

530. Research Principles and Practice./Staff

531. Research Principles and Practice in the Humanities./*G. Strathern*

532. Special Research Topics in the Humanities./*W.J. Cameron.* 531 is the prerequisite

534. Research Principles and Practice in the Social Sciences./*R.G. Prodrick, J. Fyfe*

537. Research Principles and Practice in Science and Technology./*C.R. Pendrill*

539. Guided Research./Staff. One of the 530 courses is the prerequisite

540. Special Topics./*Staff*

542. Serial Literature./*E. Ketchum*

543. Historical Development of Children's Literature./*E.C. Donnelly*

544. Canadiana/*G.M. Strathern*

545. Slavic Libraries and Librarianship./*C.M. Hotimsky*

547. History of Science./*H.N. Plotkin*

550. Communication and Information Studies./*Staff*

551. Linguistic and Communication Studies./*C.M. Hotimsky and Staff.* Required in the first term

552. Introduction to Problems in the Control of Information./*G.R. Pendrill, D. Bird.* Required in the penultimate term of each program

553. Problems in the Computer Control of Information./*J. Belzer.* Required in the final term of each program

558. Special Topics in the Computer Control of Information./*J. Belzer.* 552 is the prerequisite

559. Audiovisual Theory and Practice./*S.D. Neill*

560. Special Services./*Staff*

561. Art Libraries and Information.

562. Business Libraries and Information.

566. Law Libraries and Information.

567. Medical Libraries and Information./*C.R. Pendrill*

569. Music Libraries and Information.

NURSING

PURPOSE OF THE MScN 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 in 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.

Year 1 200, 500, 501, 504, 505, one senior or graduate course in General Education or a graduate course in Nursing.

Year 11 600. 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

Prerequisite Year 200, 470, 500, 505, 3 electives in General Education, one of which must be a Natural, Biological or Medical Science.

Final Year 600, 604, 605, 606, 607, 608.

Note: In addition to above courses, a student with a major in administration or in teaching may elect to take 509, a course offered in the Faculty of Nursing, if sufficient students enrol. The student chooses all other electives noted above in consultation with the Dean, Faculty of Nursing, or with the Coordinator of the Graduate Programs.

COURSES

200. Introduction to Statistics. Basic concepts: sampling, measures of central tendency, variability, tests of probability, correlation, significance.
1 hour each week

470. Research in Nursing. Brief introduction to research methodology, skills, evaluation and utilization.
2 hours alternate weeks, First Term

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 to problems of the present; society's concern for health; social, economic, political, legal and philosophical influences on health services.
2 hours each week, First Term

501. Administration. Nature of organized human enterprise; the administrative process, theories and skills of administration; the administrative role and implications of its assumption.
2 hours each week

504. Research in Nursing. Introduction to the nature and methodology of research; construction of a research design and tools for collection and analysis of data; critical analysis of research reports; study of means of promoting and utilizing research in nursing.
2 hours each week.

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. Included in the second term is a nursing practicum.
2 hours per week

509. Human Relations and the Change Process. Sensitivity training in attitudes, motives, values; opportunity for testing leadership roles through problems solving; the processes of decision-making and interpersonal relations which effect change.
2 hours each week, First Term

590. Thesis OR 591. Alternative Requirements. With permission, the student may elect to undertake, under supervision, the total conduct of a research project, including the writing of a thesis and reporting it. As an alternative, the student may elect to complete: (1) One Senior or graduate course in Arts, Social Science, Science or Medical Science or a Graduate Course in Nursing. (2) A major paper associated with the student's work in one course in nursing.

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 each week, Second Term

601. Nursing Service Administration in Hospitals. Study of the objectives and methods 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.
2-3 hours each week

602. Nursing Education Administration. Role of the administrator as it relates to: the development implementation and evaluation of the school program; the recruitment, selection, organization, development and retention of faculty; the business management of the school.
2-3 hours each week.

603. Public Health Nursing Administration. Abilities, attitudes and skills for advanced administrative roles in public health nursing; current and future programs of community health organizations.
2-3 hours each week.

604. Research in Nursing with Related Laboratory.
Part 1. Continued examination of the nature and methodology of research in nursing. Construction of a research design and tools for the collection and analysis of data; Critical analysis of research reports; study of means of promoting and utilizing research in nursing.
Part 11. Consideration of those aspects of nursing practice with potential for investigation; identification of measurable variables, evaluation and reporting results of investigation.
2 hours each week

605. Education and the Teacher's Role.
Part 1. Education and Society, their reciprocal influence and trends, nursing education viewed within this context, assumptions basic to currently conceived purposes and programs in nursing education.
Part 11. The teacher's role as an individual and as a member of an educational staff with emphasis on her role in curriculum development and implementation.
2 hours each week

606. Measurement and Evaluation in Nursing Education.
Part 1. This course aims to familiarize the student with the nature of measurement and its purpose and value in teaching and learning. The course

emphasizes the problems and methodology of teacher-made tests in nursing. Basic concepts for the use and interpretation of test results are explored. Next, the course examines fundamentals of performance evaluation. Laboratories are held currently.
2 hours per week, First term

Part 11. The examination and analysis of standardized tests in nursing education. Administration and analysis of individual or group testing and case writing of individual testing projects will be a requirement of the course.
2 hours per week, Second Term

607. Human Learning and Planning for Teaching.
Part 1. An introduction to the nature, conditions, and outcomes of learning. The major focus will be placed on cognitive models as explanations for phenomena of inhibition and modification of responses defined as learning. Topics discussed will be models of learning behavior, memory, concept learning, problem solving, skill learning, and K. R. and learning.
2 hours per week, First Term

Part 11. Basic concepts of teaching, course planning and lesson planning with emphasis on planning for learning experiences relevant to stated course and lesson objectives. Included in the course is provision for teaching practice and examination of a multi-media approach to planning learning experiences for students.
2 hours per week, Second Term

608. Student Personnel Services in Nursing Education.
Part 1. This part of the course emphasizes development of skills in exploration, analysis and solution of student nurse problems, academic, personal and social. The principle mode of developing these skills is through the case method. Case writing is part of this program.
2 hours per week, First Term

Part 11. This part of the course examines the most recent models used in student personnel services. Course topics include educational and vocational planning, placement and follow-up of graduate nurses. As a part of the course each student will undertake a project to examine in depth any of the above areas. Laboratory sessions are also included.
2 hours per week, Second Term

RELEVANT EXPERIENCE

Relevant experience is planned on an individual basis. Experience may be necessary to augment the student's knowledge of the area in which she wishes to specialize and/or collect data for her thesis. Because of this requirement, students should not make commitments for employment between the first and second academic years, until they have consulted with the Dean or the Coordinator of Graduate Programs, Faculty of Nursing.

POLITICAL SCIENCE

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.

Period of Study

1. Applicants who meet requirement (1) or (2) above will need a minimum of one year in attendance.

2. Applicants who meet requirement (3) above will need a minimum of two years in attendance. During the first year, the candidate will be required to complete, with at least a B average, a Prerequisite Year consisting mainly of senior undergraduate honors courses.

Requirements

Three graduate courses and a thesis are required for the degree. One of the courses will be in the area of the candidate's thesis, and the students are encouraged, not required, to take Political Science 500, as one of the remaining two: The candidate must obtain at least a B grade in each of these courses to obtain credit.

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 student 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 a 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) Statistics. The Department will require the candidate to have skill in statistics whenever necessary to his field of research.

(d) Thesis. A thesis showing evidence of scholarly research and originality 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 and Political Sociology.

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.

522. Development Aspects in Industrializing Nations. (Offered jointly with Geography and Sociology).

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.

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.

SOCIOLOGY

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, and collective behavior and communications.

To be awarded the MA degree, a candidate must satisfy the Department of his competence in Sociological Theory, Statistics, and Research Methods. The minimal requirement is a program of six and one-half graduate courses (thesis option) or eight graduate courses (non-thesis option), which normally is completed in two years. Courses 500, 501, 502, 503, 504, and 505 are required for granting of the MA degree, unless competence in these areas can be demonstrated to the Department's satisfaction. In addition, the candidate must meet the requirements specified in either the thesis or non-thesis options which comprise the second year of the program.

Special regulations as well as likely revisions governing the MA and PhD programs in Sociology are available on request from the Department. All requests for information should be addressed to the Chairman of the Department of Sociology.

ADMISSION REQUIREMENTS

Graduation from an accredited university with at least a B average (second class standing) is required for admission. Results from the Graduate Record Examination also must be submitted. Students for whom English is not their native tongue should submit evidence of proficiency in spoken and written English. Although admission to the program is possible from under-

graduate fields other than Sociology, deficiencies may have to be remedied as prescribed by the Department.

PREREQUISITE YEAR (8 half courses or equivalent)

Sociology 500
Sociology 501
Sociology 504
Sociology 505
Sociology 506 or 583
Sociology 536 or 547
Sociology 540 or 541
One elective (Minimum: half course)

MA YEAR Thesis Option (5 half courses or equivalent)

Sociology 502
Sociology 503
One full or two half courses, chosen from the candidate's major **area of concentration***
One elective (minimum: half course)
Thesis

Non-Thesis Option (6 half courses or equivalent)

Sociology 502
Sociology 503
One full or two half courses chosen from the candidate's major **area of concentration***

Electives (2 half courses or equivalent)

Directed Research (1 credit, i.e. full year Research Seminar *in the candidates* major areas of concentration.

COURSES

500. Introduction to Elementary Statistics. Measures of central tendency and dispersion, normal binomial distribution. Tests of significance and measures of application.

501. Advanced Statistical Analysis in Social Research with Particular Emphasis on Inference. Analysis of variance and covariance, nonparametric tests and sampling. Prerequisite: an undergraduate course in statistics, Sociology 500, or permission of Instructor.

502. 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.

503. Methodology in Empirical Sociology. An examination of problems of measurement, data collection techniques and analysis.

504. Sociological Theory. A survey of historical and contemporary sociological theory.

505. Sociological Theory. Selected problems in theory.

506. Population and Social Structure. (P) The relevance of demographic processes to social organization and the interrelation of fertility, mortality, and migration with social psychological and structural variables.

522. Development Aspects in Industrializing Nations. (O) The social, economic, political and spatial structure and inter-related development problems in selected countries or regions. (Offered jointly with the Departments of Geography and Political Science). Two-term, full-credit course.

524. Social Epidemiology. (O) An examination of social epidemiological methods, patterns of acute and chronic morbidity, and the effects of social and psychological factors on health behavior. (Offered jointly with Community Medicine)

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.

534. Human Ecology. (P) The consideration of the concepts of human ecology as applicable to the interrelationships of population, environment, technology and organization in society.

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 Behavior. (O) A study of basic theories of deviant behavior with emphasis on methods for determining the occurrence and distribution of norm violating behavior and on social and psychological correlates of deviant behavior.

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 dissaffiliation. 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. Small Groups. (SP) Empirical study of social psychological phenomena with an introduction to empirical laboratory and field methods used in social psychology.

542. Communication. (SP) An analysis of the nature, diffusion, and control of information within social systems and sub-systems.

543. Collective Behavior. (SP) An analysis of theories dealing with fads, riots, propaganda and public opinion.

*Population studies (P), Social Organization (O), and Social Psychology (SP), constitute the three areas of concentration.

544. Theories of Social Psychology. (SP) Critical analysis of the major current theories in social psychology.

545. Community Aspects of Mental Health. (O) 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 program and services. (Offered jointly with Community Medicine)

546. Health Care Organization. (O) 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. (Offered jointly with Community Medicine).

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 socio-cultural, economic, demographic and ecological change and their relevance to planning in developing nations.

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.

570. Special Topics in Demography. (P) Intensive study of specific issues in demographic analysis.

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.

585. Directed Research in Population Studies. (P) Selected topics and problems in demographic analysis that will be the focus of discussions and individual research/*Staff.*
Two term, full credit course.

586. Directed Research in Social Organization. (O) Selected Topics and problems in the analysis of social organization that will be the focus of discussion and individual research/*Staff.*
Two term, full credit course.

587. Directed Research in Social Psychology. (SP) Selected topics and problems in the analysis of Social Psychology that will be the focus of discussion and individual research/*Staff.*
Two term, full credit course.

588. Computer Applications in Social Research. (P) Electronic data processing and computer programming as relevant to social and demographic data and research.

590. MA Thesis. Two-term, full-credit course.

599. Selected Topics in Sociology.

Note: All courses signify half-credit, one-term courses unless otherwise noted.

SUMMARY OF REGISTRATION – 1970–71

Arts	282
Biosciences	374
Physical Sciences	412
Social Sciences	978
	2,046

DEGREES CONFERRED – 1970

PhD	47
MA	155
MBA	180
MEng	14
MESc	19
MLS	129
MSc	67
MScN	8
	619

MEMBERS OF THE FACULTY OF GRADUATE STUDIES

Arts Division

CLASSICS

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*

ENGLISH

Professors

Atkinson, W.E.D., BA *Cantab;* PhD *Chicago*

Barker, A.E., BA, MA *Toronto;* PhD *London,* Professor of Renaissance Literature

Bates, R.G.M., BA, MA, PhD *Toronto*

Conron, A.B., BA, MA *UWO;* AM, PhD *Harvard*

Graham, J.W., BA *Manitoba;* MA, PhD *Toronto*

Hieatt, A.K., AB *Louisville;* PhD *Columbia*

Hieatt, Constance B., BA, MA *Hunter College;* PhD *Yale*

Klinck, C.F., BA, MA *UWO;* PhD *Columbia;* FRSC Senior Professor

Priestley, F.E.L., BA, MA *Alberta;* PhD *Toronto;* Visiting Professor (part-time)

Rajan, B., BA, MA, PhD *Cantab;* Senior Professor

Reaney, J., BA, MA, PhD *Toronto*

Woodman, R.G., BA *British Columbia;* MA *Manitoba;* PhD *Toronto*

Associate Professors

Bandeen, Betty I., BA *UWO;* AM, PhD *Radcliffe*

Bolgan, Anne C., BA *D'Youville;* MA, PhD *Toronto*

Chapin, D.F., BA, MA, PhD *Toronto*

Collins, T.J., BA, MA *UWO;* PhD *Indiana*

Sister Corona Sharp, BA *UWO;* MA, PhD *Notre Dame*

Devereux, E.J., BA, MA *Newfoundland;* DPhil *Oxon*

Fleck, P.D., BA, MA *UWO;* PhD *Belfast.* Chairman of Department

Hair, D.S., BA *UWO;* MA, PhD *Toronto*

Kaula, D.C., BA *Cornell;* PhD *Indiana*

Rans, G., BA, MA *Cantab;* PhD *Leeds*

Sanborn, C.E., BA, MA, PhD *Toronto*

Stingle, R.M., BA, MA *Toronto.* Chairman of Department Committee on Graduate Studies

Wilson, H.R., BA, MA *Toronto;* PhD *Michigan*

Assistant Professors

Gordon, I.R.F., BA *Cantab;* MA, PhD *California, (Los Angeles)*

Hensley, D.H., BA, MA *Oregon;* PhD *Wisconsin*

Parker, G.D., BA *Acadia;* MA *Dalhousie;* PhD *Toronto*

Somerset, J.A.B., BA *Toronto;* MA, PhD *Birmingham*

Straulman, Ann T., BA *Wellesley;* MA *Kansas City;* PhD *Wisconsin*

FRENCH

Professors

Barbier, C.P., BA, MA *Leeds.* Chairman of Department

Bush, W.S., BA *John B. Stetson;* MA *South Dakota;* DU *Paris*

Lenardon, D., BA, BEd *Alberta;* MA, PhD *Toronto*

Sanders, J.B., BA, MA *Manitoba,* DU *Paris*

Tuchmaier, H., DU *Laval*

Venesoen, C., DèsL *Laval*

Associate Professors

Balsé, M.L., BA, MA, PhD *Bombay;* DU *Paris*

Creighton, D.G., BA, MA *Toronto;* PhD *Columbia*

Heller, L.M., BA, MA, PhD *Wisconsin*

Jones, Dorothy, 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*

Cameron, J.L., BA *New Zealand;* MA *Canterbury;* MA, PhD *Princeton*

Forsyth, Louise H., BA *Saskatchewan;* MA, PhD *UWO*

Saraydar, Alma C., BA *California (Los Angeles);* MA *Chicago;* PhD *California (Berkeley)*

Westgate, D.E., BA *Nottingham;* MA *McMaster;* PhD *UWO*

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*

Assistant Professors

Seufert, G.H., *Staatsexamen Tubingen*

Spencer, Hanna, PhD *Prague*

MUSIC

Professors

McKellar, D.A., AMus, 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

Bray, K., MusBac *Toronto;* MM *Eastman*

Downs, P.G., BA *Leeds;* MusM, PhD *Toronto*

Greene, G.K., AMus, BA, BEd, MA *Alberta.* Chairman, Music History

Haenselman, C.F., BMusEd, MMus *Colorado;* PhD *Indiana.* Chairman, Theory

Johnson, D.J., BA *Sterling;* MA *Colorado*

McIntosh, J.S., MusBac *Toronto;* MMus *Eastman.* Chairman, Applied Music

Stark, J.A., BA *Minnesota;* MusM *Toronto*

Assistant Professors

Aldrich, R., MusBac *Victoria,* Wellington

Bratuz, Damiana, MDipl *Trieste;* MM *St Louis;* MusDoc *Indiana*

Clements, P.J., MusBac, MM *Michigan*

Dilmore, H.C., BM MM *Eastman*

Giron, A., BMus *Oberlin;* MA *Tulane*

Hughes, R., MusBac, BRd, MM *Toronto*

Pendle, Karin, BA *Minnesota;* MM, PhD *Illinois*

Riseling, R., BMEd *Illinois Wesleyan;* MM *Texas*

Seiffert, S., BM *Eastman;* MA *Brown;* AMD *Eastman*

Skelton, R., MusBac *Toronto;* MM *Indiana*

VanOstrand, G., BSc *New York State;* MM *Eastman*

PHILOSOPHY

Professors

Binkley, R.W., BA *Colorado;* PhD *Minnesota*

Butts, R.E., BA, MA *Syracuse;* PhD *Pennsylvania.* Chairman of Department

Davis, J.W., BA, MA, PhD *Boston*

Johnson, A.H., BA *Mt. Allison;* MA, PhD *Toronto;* FRSC. Senior Professor

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*

Freed, B., BA *Kenyon;* PhD *Berkeley*

Henry, W.C., BA *UWO;* MA, PhD *Toronto*

Hockney, D.J., BA *McMaster;* PhD *Cornell*

Hooker, C.A., BSc, PhD *Sydney*

Howard, V.A., BA *Maine;* PhD *Indiana*

Johnson, H.J., BA *Alfred;* PhD *Chicago*

Assistant Professors

Marras, A., BA *Colgate;* PhD *Duke*

Schrecker, Anne M., BA *Kalamazoo;* MA *Wellesley;* PhD *Bryn Mawr*

Williams, Martha E., BS *William and Mary;* MA, PhD *Bryn Mawr*

Visiting Professors

Bub, J., BSc *Cape Town;* PhD *London*

Hackstaff, L.H., BA *Williams;* PhD *Yale*

Rescher, N., BS *Queen's;* MA, PhD *Princeton*

Rudner, R.S., BA *Queen's;* MA, PhD *Pennsylvania*

SPANISH AND ITALIAN

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., PhB, STB *Ordo de Mercede;* Lic., Dr en Fil. y Letras, *Madrid*

Martí, A., ECI. *Madrid;* BSc *Jochi, Tokyo;* Lic., Dr en Fil. y Letras *Barcelona*

Assistant Professors

Burghardt, W., BA, MA *Toronto*

López Pacheco, J., Lic en Fil y Letras *Madrid*

Biosciences Division

ANAESTHESIA

Professor

Spoerel, W.E., MD *Frankfurt-on-Main.* Head of Department

Associate Professor

Webster, A.C., BSc, MB, ChB *Leeds*

Clinical Associate Professors

Aitken, R.R., MD *UWO*

Keeri-Szanto, M., MD *Budapest*

ANATOMY

Professors

Barr, M.L., SM *UWO;* BA, MSc, MD; Hon. LLD *Queen's, Toronto, Alberta* and *Dalhousie;* Dr med h c *Basel;* FRSC

Buck, R.C., MD, MSc, PhD *London.* Chairman of Department

Associate Professors

Gwinnett, A.J., BDS *Birmingham;* PhD *Bristol*

Gwyn, D.G., MB, BS *London;* PhD *Birmingham*

Hollenberg, M.J., BSc(Med), MD *Manitoba;* MSc, PhD *Wayne State*

Hoshino, K., MD, DMedSc *Tokyo*

Montemurro, D.G., BA, MSc, PhD *UWO*

Wilson, A.S., MB, ChB, MD *Glasgow*

Associate Professor of Human Genetics

Soltan, H.C., BA, PhD *Toronto*

Assistant Professors

Altmann, G.G., BSc *Dalhousie;* MSc, PhD *McGill*

Donisch, E.W.K.F., MD *Bonn;* MSc *UWO*

Gammal, E.B., MD, BCh *Cairo;* PhD *UWO*

Sergovich, F.R., BA *McMaster;* PhD *UWO*

Shaver, Evelyn L., BSc, MSc, PhD *UWO*

Singh, R.P., BA, MSc, PhD *UWO*

Honorary Lectures

Robinow, C.F., MD *Hamburg;* FRSC. Professor of Bacteriology and Immunology

Walden, D.B., BA *Wesleyan;* MSc, PhD *Cornell.* Associate Professor of Botany

BACTERIOLOGY AND IMMUNOLOGY

Professors

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

Murray, R.G.E., BA, MA *Cantab;* MDCM *McGill;* FRSC. Head of Department

Robinow, C.F., MD *Hamburg;* FRSC

Clinical Professor

Hatch, L.A., MBBS *London*

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.* Professor of Engineering Science

Clinical Associate Professor

Bakerspigel, A., BA, MA *McMaster;* PhD *UWO*

Assistant Professors

Rozanis, J., MSc *Hebrew University;* PhD McGill

Sinclair, N.R., BSc, MD, PhD *Dalhousie*

Strejan, G.H., MS *Bucharest;* PhD *Hebrew University*

Wilkins, P.O.B., 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, MSc *Manitoba;* PhD *Wisconsin*

Toogood, J.H., MD *Toronto*

Faculty of Law

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ACADEMIC CALENDAR

1971

September 1, Wednesday	9:30 a.m. General assembly of first year students. Lectures begin for second and third year students.
September 1 – 10, incl.	Orientation program for first year students.
September 13, Monday	Lectures begin for first year students.
September 14, Tuesday	Law students register: Thames Hall, 2:30 – 4:00 p.m.
October 11, Monday	Thanksgiving Day, Holiday.
October 29, Friday	Autumn Convocation.
December 10, Friday	First Semester classes end.
December 13, Monday	Second and third year examinations begin. First year tests begin.
December 22, Wednesday	First semester ends.

1972

January 10, Monday	Second semester begins.
March 31, Friday	Good Friday, Holiday.
April 21, Friday	Second semester classes end.
April 24, Monday	Examinations begin.
May 6, Saturday	Second semester ends.
May 30 – June 2	Spring Convocation.

* The above dates are subject to modification.

Administrative Staff

Dean

R.S. Mackay, QC; LLM *Columbia; of Osgoode Hall* (Barrister-at-Law)

Assistant Dean

G. Thomson, BA, LLB *Queen's;* LLM *California, Berkeley; of Osgoode Hall* (Barrister-at-Law)

Administrative Officer and Assistant to the Dean

Margaret McNulty

Administrative Officer

Patricia Black

Librarian

Margaret Banks, MA, PhD

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;

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 Honor 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 Honorable 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-four 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 of 1964, first-year enrollment 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 school 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.

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.

REGULATIONS OF THE FACULTY OF LAW

Admission to the Faculty of Law

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 admission 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.

ADMISSION REQUIREMENTS

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.

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.

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, London 72, Ontario. The form should be returned to the Registrar, Stevenson Hall, The University of Western Ontario. Because of the limited number of spaces available, applications should be made well in advance of the date of intended enrolment and, so far as may be possible, before May 1st. Upon the complete record of the applicant becoming available to the Admissions Committee each applicant will be advised immediately in writing of the decision taken by the Admissions Committee. When the Admissions Committee is able to offer an applicant a seat, the applicant will be required to submit a timely reply indicating whether it remains his intention to register in this law school.

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 University Admissions Committee. The Admissions Officer of the Faculty of Law acts as a voting ex-officio member of the Committee. Selection is based upon the applicant's prior academic record, including grades obtained in undergraduate courses, Law School Admission Test

scores, letters of reference and student participation in extra-curricular activities and the Committee's assessment of the applicant's promise for professional distinction.

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 centers have been established in major cities in Canada and the United States. For Canadians, the test is given five times a year. 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.

ADVANCE STANDING

Applications from students successfully completing a part or all of their legal education in another law school may be considered for admission with advance standing, but all students taking the LLB shall take not less than a full two-year program which shall be individually tailored according to their particular needs.

Candidates for the LLB degree 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.

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 1st and ends on December 22nd. The second semester starts on January 10th and ends on May 6th.

(3) The time-table for the first semester is available at the general office on registration day. The Faculty may, on notice, schedule compulsory classes and seminars additional to those indicated on the time-table.

(4) All courses in the first year are obligatory. All courses in the second and third years are elective.

(5) Students in the second and third years may take a range of fourteen to sixteen hours in either semester to a minimum of twenty-nine hours in both semesters and a maximum of thirty-one hours in both semesters, except that a student may exceed thirty-one hours but only with the permission of the Assistant Dean.

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) A student who has successfully completed his first year of studies in the Faculty of Law may, over the following two years, be permitted to take up to the equivalent of six semester hours outside of the Faculty of Law; credit for more than four hours outside the Faculty of Law may not be received in any one semester. The approval of the outisde course instructor and the Dean of the Faculty of Law must be obtained.

(3) 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.

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 achieve the required passing standard, 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, fails 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.

GRADES

(1) The following scale has been used in grading: A: 75–100, representing excellent; B: 67–74, above average; C: 60–66, average; D: 50–59, below average but a pass; F: below 50, failure, together with a requirement that a student must attain a weighted average of 60% in order to pass his year. The grade in each course is usually weighted in proportion to the class hours per week assigned to the course. However, the grading system so described is under review and is subject to change prior to the commencement of term.

(2) Individual grades assigned by instructors are subject to the approval of the Faculty.

(3) 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

446. 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, including historical background, organization of the courts in Canada, the relationship of courts of civil jurisdiction with courts of criminal jurisdiction, pleadings and discovery, forms of trial, method of proof, parties, judgments, res judicata, costs and appeals. While the basis of the course is the Ontario Judicature Act and the Rules of Practice, 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 terms

407. 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 and projection of future probabilities; development of a policy-oriented approach to decision-making.
Two hours per week, both terms

410. Contracts. A general introduction through the reading of cases to the legal order affecting arrangements by individuals and groups in the community at large. Special emphasis will be placed on remedies for breach of contract, the enforceability of contracts, and the creation of contracts.
Three hours per week, first term; two hours per week, second term

412. Criminal Law. Courts and jurisdiction; procedure from original process through arraignment and trial to appeal including problems such as bail, legal aid, rights of accused persons, etc.; 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 terms

422. Legal Method and Analysis. An introduction to the basic skills and techniques of legal research, analysis and communication. Concentration on the identification, discovery and use of elementary legal source materials. Students will be required to complete a number of assignments to the satisfaction of their tutor. No grade is awarded in this course and the work in the course is not included in the determination of the weighted average of the student.
One hour per week, both terms, plus eight days at the beginning of the first term.

425. 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 term; two hours per week, second term.

430. 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 term; two hours per week, second term.

ELECTIVE COURSES: SECOND AND THIRD YEARS

401. 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 term

452. Agency and Partnership. A course in agency and partnership with some emphasis on aspects of topics taught in company law. The creation and legal implications of various other forms of unincorporated activity will also be discussed.
Two hours per week, first term

408. Civil Liberties. The course is intended to illustrate the necessity of accommodation between conflicting rights dictated by our pluralistic society. Within this framework the following topics will be considered. Privacy: industrial and commercial espionage, electronic and physical surveillance, the computer revolution and the cybernetic catalogue. Censorship, obscenity and legislated morality, human rights and fundamental freedoms: The Bill of Rights, the Ontario Human Rights Code, hate literature, due process. Economic civil liberties: the alienated community, Indians, trade unionism and the right to work, welfare and the poor.
Two hours per week, first term

443. Closed Corporation. A study of the use of the corporate vehicle in the organization of private business and activity, examined in the context of corporate planning and counselling. Incorporation, control techniques, capital structure, financing and securing funds for expansion, squeeze outs and minority remedies, planning for retirement or death, distribution of earnings and conversion into a public company or winding up will be covered through the use of hypothetical cases which present legal problems requiring analysis and resolution. Students will be presumed to be familiar with company law, corporation tax and secured transactions.
Enrolment restricted.
Two hours per week, first term

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, manufacturer's liability, consumer protection, secured transactions, and the financing of such transactions, both consumer and commercial.
Four hours per week, one term

403. Company Law. Legal aspects of both incorporated and unincorporated group activity of a commercial nature. The following topics are presented: an historical introduction; the formation of business groups; legal recognition of group entity in the common law and modern statutes; relationships between business entities and outsiders (ultra vires transactions, authority to contract, membership liability); company promotions and protection of the investing public; company control and management.
Four hours per week, one term

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 take-over bids, and problems of corporate marriage involving procedural requirements and shareholders' rights. Some emphasis will be placed on tax consequences. An attempt will also be made to deal with selected aspects of current developments such as conglomerates and multinational corporations.
Prerequisites: Company Law and Income Taxation. The courses in Securities Regulation, Taxation of Business Activities and Trade Regulation and some knowledge of accounting are recommended.
Two hours per week, second term

405. Comparative Law. This course is concerned with the methodology rather than the substance of civil law systems, with particular reference to the law of France and Quebec. There will be in addition a brief examination of the historical development of the civil law systems in order to establish a background for the main part of the course.
Three hours per week, first term

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. It is suggested, but not required, that students have a basic knowledge of Wills and Trusts, and Family Law.
Four hours per week, one term.

462. Copyright and Unfair Competition. Statutory and common law protection of literary, musical and artistic works, including the principles of unfair competition and trademark.
Two hours per week, second term

411. Creditors' Rights. Including remedies of unsecured creditors, execution of judgments, fraudulent conveyances and preferences, general assignments and bankruptcy.
Two hours per week, second term

434. Criminology: Functions and general objects of the criminal process: theories relating to the causes, prevention and treatment of crime and criminal offenders; recidivism; juvenile deliquency; police administration and detection of crime; problems concerning civil liberties.
Two hours per week, first term

453. Defamation and Freedom of Speech. The seminar is designed to give students a thorough introduction to the law of libel and slander and to set such law in a broader constitutional perspective. Particular attention will be given to recent developments in the United States which have highlighted the relationship between defamation and freedom of speech. Participants will be expected to undertake individual research either on the actual impact of present Canadian law and possible reform or on the long term implications of the experience in the United States for Canada.
Two hours per week, first term

454. Dispute Settlement. A seminar dealing with the mechanism of arbitration for settling disputes. Although emphasis will be placed on this process in the field of labor relations, some work will be done in other fields. A paper and involvement in actual arbitrations will be required.
Two hours per week, first term

413. Estate Planning. This course attempts to instruct students in estate planning and draftsmanship. A number of particular aspects of planning is selected for special attention including the use of insurance and pension plans, the use of trusts, transfer of interests in businesses and professional practices, valuation of estate assets, planning for handicapped and spendthrift heirs. This is not a course in the law of wills and trusts and taxation, although these matters are given proper attention. This is intended to be a course in planning. Students are asked to respond to hypothetical fact problems.
Prerequisites: Wills and Trusts or Taxation of Wealth Transfers.
Two hours per week, second term

414. Evidence. The fact-finding process with particular reference to the Anglo-Canadian trial. An examination and analysis of adversary theory and roles of trial judge, jury and appellate tribunals; relevancy and admissibility of evidence and presumptions and burdens in relation thereto; quantum of proof in particular cases; exclusionary rules and exceptions including reference to opinion and hearsay evidence and considerations of illegality, prejudice, public policy, privileges, etc.; competency and compellability of witnesses; techniques of examination and cross-examination and scope thereof.
Four hours per week, one term

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, first term

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. In addition, students will undertake specific projects which will involve work with some of the specialized agencies in the locality which deal with the family. Enrolment restricted.
Two hours per week, second term.

438. Income Taxation. A basic survey of income tax including the basis of tax jurisdiction, residence, treatment of non-resident taxpayers, the meaning of "income" deductions, credits and exemptions, collection of tax. Substantial time is spent on definition of the "income" concept; this necessarily involves discussion of tax reform. However, registrants should be careful not to mistake this course for the course in Tax Policy in which these matters are more thoroughly explored. Unlike the course in Taxation of Wealth Transfers, in which the pedogogical method concentrates on working with statutory language, the course in Income Taxation is intended to instruct students in dealing with a taxing statute and its surrounding jurisprudence together. An attempt is made to illustrate the inter-relation of legislative edict with judicial pronouncement. While accounting is not a prerequisite for this course, an understanding of fundamental bookkeeping and accounting principles will be of substantial value.
Four hours per week, first term

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 relevant proposals of the White Paper on Taxation will be considered. The policies involved in a taxing statute will be dealt with throughout the course. Classes will be conducted by way of the problem method. Accounting is not a prerequisite.
Four hours per week, second term

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, first term

433. International Business Transactions. Some legal problems of international trade and investment.
Two hours per week, first semester

463. International Organization. A study of the political and legal foundations of the organization of international society, the functions and types of international institutions and selected aspects of the law governing their activities.
Two hours per week, second term

418. Jurisprudence. The course is designed to develop and test the student's own ideation of the nature of law and its role in society through an examination of the various perceptions of law, including the naturalist, naturalistic, positivist, analytical, transcendental-idealist, historical, evolutionary, utilitarian, sociological, pragmatist, and realist perceptions of law.
Four hours per week, second term

419. Labour Law. The course is intended to cover, broadly, the right to organize and bargain collectively, including the enforcement of collective agreements, strike law and the regulation of the relations between trade unions and their members.
Three hours per week, first term

The administrative regulation of labour relations in Canada with chief emphasis on the Ontario Labour Relations Board.
Four hours per week, second term

448. Advanced Labour Law — Strikes. The legal regulation of industrial warfare. The right of freedom to strike and resort to other hostile action in labor relations. Common law and legislative techniques and controls: the forms and consequences of illegality. Particular emphasis on perspectives for reform.
Two hours per week, second term

426. Land Development. An introduction to the sale, leasing and financing of land acquisition and improvement; public regulation of private land development, the concept and application of recording acts to land transactions. The course will concentrate on land finance, including the tax consequences, and public regulation, including city planning, zoning, subdivision control. As a result, the material on land transfer (i.e. the recording acts, the contract for the sale of land, the remedies of the purchaser and the vendor) will be dealt with quickly and somewhat superficially.
Three hours per week, first term

An introduction to the sale, leasing and financing of land acquisition and improvement; public regulation of private land development, the concept and application of recording acts to land transactions, selected problems of conveyancing.
Three hours per week, second term

437. Law and Poverty. The empirical study of legal problems of disadvantaged groups in Canadian society. After a few introductory meetings to gain perspective, explore the various problem areas and discuss methodology, students will be encouraged to pursue their own interests in relation to one of the following: legal aid, housing, provision of bail, consumer protection, Indian rights, equal opportunity in education and substantive rights and administrative procedures under welfare legislation. Course requirements will be met through the preparation of a research paper based on empirical studies in the London area under the supervision of either of the principal instructors. Enrolment will be limited to twenty students.
Two hours per week, first term

435. Law Reform. Methodology of law reform; the seminar will involve an examination of a specific area of the law (yet to be designated) which may be in need of reform, and an evaluation of the usefulness of the available devices of law reform in relation to the particular topic to be studied.
Two hours per week, first term

440. Legal History. The sources and history of law, the development of the courts and work of the legal profession, with special emphasis on Canada.
Two hours per week, first term

456. The Legal Process. A study of private ordering and of the relationships and interaction between private and institutional law makers. Examination and evaluation of the alternative techniques by which "law" is made and applied.
Two hours per week, first term

464. Marital Counselling. A study of the dynamics of family interaction and the theories of family breakdown; a review of treatment theories and how to use them effectively.

In line with this, students will be expected to develop diagnostic expertise in the area of family dysfunction; skill in interviewing and treating families with problems, and an understanding of the process of referral and the practical techniques which make it work.
Enrolment restricted.
Two hours per week, second term

461. Medicine and the Law. A legal examination of the changing nature of what, in recent years, has become one of our largest "regulated industries" The emphasis will be an institutional analysis of the provision of health care including the validity of the distinction between public health and other kinds of health care delivery, including the roles of government, regulatory bodies, the health professions and disciplines and the relationships between government and "consumer", consumer and profession, profession and practitioner with particular attention to the problem of quality control in all its aspects.
Two hours per week, first term

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, first term

444. Natural Resources. The subject matter of this course will largely be determined by the students themselves, but it is expected that class sessions will centre around environmental problems. There will be general readings regarding the dimensions of the environmental crisis, and then an examination of some of the legal areas. These will include the

law relating to the sea, the continental shelf, and international bodies of water, the constitutional division of jurisdiction in Canada, the common law remedies against polluters, alternative policy responses available to governments, and the actual legislation now in force. Students who do an essay or project will also be able to consider in depth a traditional area of natural resource law, such as the forestry, mining or oil and gas industries.
Two hours per week, second term

458. Problems of Canadian Federalism. The advanced study of Canadian constitutional problems with emphasis on current efforts at review and reform. The problems to be discussed will include official languages, regional disparities, the framework of the judicial system, fundamental rights, redistribution of powers and the structure of the central and provincial governments. Some comparisons with other federal systems will be made. Students will fulfill course requirements through weekly seminar preparation and participation, and the individual writing of a "take-home" examination at a time mutually convenient to each student and the instructor.
Two hours per week, second term

465. Products Liability. This seminar is designed to give students a thorough understanding of recent developments in this rapidly expanding area of tort law. Individual research projects will be undertaken with special emphasis on the applicability of the general introductory materials, which will be drawn from other jurisdictions, to Ontario.
Two hours per week, second term

466. Professions. The study of the impact of the professions and professionalism on contemporary society in Canada. While particular emphasis will be placed on the legal profession as the model, an attempt will be made to analyze the problems and consequences to the public, including members of the professions themselves, of those characteristics common to all professions including the economic effects of licensing and similar forms of certification and the adequacy of the provision of highly skilled essential services.
Two hours per week, second term

427. Public International Law. An introduction to the underlying principles of international law and the developing framework in several areas. To be discussed: the nature and sources of international law; the doctrines of sovereignty and recognition; means of peaceful settlement of disputes; the law of the sea; air and outer space; state responsibility and environmental problems; and international human rights law.
Four hours per week, first term

445. Regulated Industries. This seminar is designed to give students an introduction to some of the issues involved in governmental regulation and control of certain key segments of the economy. Special emphasis will be placed on the activities of the Canadian Radio Television Commission and Bell Canada's recent rate increase application to the Canadian Transport Commission. After a period of general introduction, it is expected that students will undertake individual research in areas of particular interest.
Prerequisite: Administrative Law.
Two hours per week, second term

447. Response to Law. A study of the ways in which people respond to legal rules and legal sanctions; an examination of the effectiveness of the law as an instrument to regulate conduct and a comparison of legal sanctions with others (economic, ethical, social, etc.) in terms of relative effectiveness. An attempt will be made to understand the reasons for compliance with and disobedience to law. Implicit in this is a survey of the circumstances which prompt compliance or disobedience. Special attention will be accorded selected problems concerning civil disobedience and riots, labor violence, patterned tax evasion, deliberate disregard of Family Court orders, habitual traffic violations.
Two hours per week, second term

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. Problems to be covered will include: initial distribution of securities, subsequent transactions in securities and supervision of traders, with emphasis on the function of disclosure to investors (e.g., prospectus requirements, insider trading, proxy solicitation, take-over bids, periodic reports, etc.), the role of governmental agencies, self-regulation in the over-the-counter market and by the exchanges, and legal consequences of present developments in the securities markets such as automation, institutional investors and international transactions.
A course in company law is a prerequisite for students enrolling in this course and some knowledge of accounting principles would be beneficial.
Two hours per week, first term

439. Taxation of Business Activities. A study of the Income Tax Act as it applies to business organizations and investors in business enterprises. Such problems as the tax treatment of corporate reorganizations will be dealt with in some detail. The proposals of the White Paper on Taxation will be considered.

The course will emphasize tax planning in the business context. An examination is required but students will be allowed to submit a paper in lieu of an examination with the permission of the instructor.
Prerequisite: Income Taxation
Two hours per week, second term

429. Taxation of Wealth Transfers. A study of gift and inheritance taxes; this course involves careful and detailed analysis of the Estate Tax Act, the Succession Duty Act (Ontario) and the gift tax provisions of the Income Tax Act. The course is

designed to recognize student unfamiliarity with statutes, particularly taxing statutes, and, through the use of problems, to introduce students to the techniques of analysis and application of taxing statutes in general. Your skills in reading case law will not be severely tested; the emphasis is on development of the ability to solve problems arising from the operation of taxing provisions on hypothetical fact situations.

The virtual disregard of tax jurisprudence necessarily results in a distortion which is nicely corrected by the course in Income Taxation.
Two hours per week, first term

460. Tax Policy. This course will survey matters of tax philosophy, fiscal policy, tax reform and tax administration. For the current year, it is proposed to emphasize tax reforms. This will involve a study of selected aspects of the tax system from three distinct perspectives — that of the lawyer, the economist and the businessman. Our survey will not be confined to income tax, but will range widely across the tax systems both federal and provincial.
Prerequisites for law students: Taxation of Wealth Transfers and Income Taxation.
Two hours per week, second term

431. Trade Regulation. Legal problems of competition, with special reference to legislation on price-fixing combinations, mergers, monopolies, price discrimination, resale price maintenance, pricing and promotions, false and misleading advertising, and other restrictive and unfair trade practices; also certain problems pertaining to common law restraint of trade, government regulation and ownership of certain industries, the structure of Canadian industry and the overall competition policy of Canada.

An examination is required but students will be allowed to submit a paper in lieu of an examination with the permission of the instructor.
Two hours per week, first term

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. A combination of instructional methods will be employed including the use of audio-visual techniques, particularly movies, trial transcripts and trial practice assignments requiring student participation as counsel. A course in Evidence is a prerequisite and the Faculty reserves the right to limit the number of students enrolling.
Two hours per week, second term

409. Urban Legal Studies. Public and private regulation of urban and regional land use with emphasis on the process of planning and the structure of urban and regional government. Particular topics include urban renewal and redevelopment, housing, facilities, urban fiscal problems, urban transport, and the physical urban environment.
Two hours per week, second term

432. Wills and Trusts. Intestate succession; the Dependants' Relief Act; testamentary capacity; the formal requirements of a will; problems of construction of wills; lapsed and substitutionary gifts; class gifts; creation and types of trusts, and aspects of the relationship between the trustee and the beneficiary; powers of appointment.
Four hours per week, second term

428. Individual Research. A student wishing to undertake a major piece of research and writing may apply to the Faculty Committee on Individual Research. The approval of a member of the Faculty who will supervise the research project must be obtained and a written outline of the proposed project must be submitted to the Committee. Where it approves a research project the Committee decides on the weight to be granted for it. The maximum weight permissible is one half of the unit hours taken in the semester in which the research is done. A student may select this option only once in his law school career. Open to students during their second and third years.

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. Grades will be translated to pre-determined equivalents in the school where the student is registered.

MOOT COURTS AND MOCK TRIALS

Students are required to participate in a moot court program administered by the Faculty in conjunction with the course in Legal Method & 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, drafting pleadings, and examining witnesses at trial. The Faculty and students are particularly fortunate, in connection with this program, to have the cooperation of the Bench, Court officials, the police, and various citizens of London who contribute their time to act as witnesses.

GUEST LECTURE SERIES

The Faculty of Law sponsors a guest lecture series each year. 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.

LAW STUDENTS INFORMATION BUREAU

The Law Students Information Bureau was created in September 1969 by students with faculty assistance and involves students in problems which arise in the "core area" of London. It presently operates from the offices of a community organization called the Community Action Centre. Students who become involved should expect to spend a maximum of two hours per week at the office because of a rotational system which the Bureau has instituted.

AWARDS AND HONORS SPECIFICALLY RELATED TO THE FACULTY OF LAW

Academic Awards

The Butterworth Prize for Academic Excellence

A set of HALSBURY with Canadian Converters to the third year student achieving the highest aggregate standing in all three years of the course taken as a whole.

Arthur T. Little Scholarship

A gold medal and the sum of $200 to the student achieving the highest standing in the final year of the course.

The Borden, Elliot, Kelley and Palmer Prize

The sum of $200 to the student achieving the highest standing in the second year of the course.

The Campbell, Godfrey and Lewtas Prize

The sum of $200 to the student achieving the highest standing in the first year of the course.

The Hon. Edward Blake Prize

The sum of $100 to the student achieving the highest standing in Company Law.

The Canada Law Book Company Limited Prizes

Three prizes of the value of $50 each in books (a) to the student achieving the highest standing in Torts, first year, (b) the highest standing in Evidence, second year, and (c) the highest standing in a course in third year to be selected by the Faculty.

Canada Permanent Trust Company Law Prize

The sum of $100 to the student achieving the highest standing in Wills and Trusts.

The Carswell Company Limited Prizes

Three prizes of books to the value of $35 each to the student achieving the highest standing in Commercial Law, the highest standing in Conflict of Laws and the highest standing in a course to be designated by the Dean.

Special Prize in Commercial Law Subjects

The sum of $100 donated by Zimmerman, Winters, Worley, 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.

Faculty Prize for Legal Writing

The sum of $100 to be awarded in the discretion of the Faculty for contributions to The University of Western Ontario Law Journal.

The London Life Insurance Company Prize

The sum of $100 to the student achieving the highest standing in insurance.

The A.B. Siskind Scholarship

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 this Faculty, to be given to the student achieving the highest standing in Practice.

The Stevenson and Evans Prize

The sum of $100 to the student achieving the highest standing in Constitutional Law.

The Thomson, Rogers' Prize In Company and Commercial Law

The sum of $150 to the second year student with 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).

The Thomson, Rogers' Prize in Corporate Finance

The sum of $150 to the third year student with the highest aggregate standing in two of the following three courses: Advanced Company Law, Advanced Taxation and Securities Regulation (the two courses to be designated by the Faculty).

Prize in Taxation

The sum of $50 donated by Shibley, Righton and McCutcheon, Toronto, to the student achieving the highest standing in Taxation.

HONORS

Students who obtain a weighted average of 70% or more and are in the top 10% of the class in any year are eligible for the Dean's List of Honor Students.

Students who obtain a weighted average of more than 70% and less than 75% over all three years may in addition be recommended for graduation with distinction.

Students who obtain a weighted average of 75% or more over all three years may be recommended for graduation 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.

Financial Assistance – See the University of Western Ontario Calendar – General Information

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.

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

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. Attention is drawn to the fact that, by statute, being called to the Bar and admission to practise as a solicitor is not open to non-British subjects.

Members of the Faculty of Law

Professors

Hickling, M.A., LLB, PhD *London*

Krever, H., QC; BA, LLB *Toronto; of Osgoode Hall* (Barrister-at-Law)

Mackay, R.S., QC; LLM *Columbia; of Osgoode Hall* (Barrister-at-Law) (Dean)

Palmer, E.E., BA *William and Mary;* MA *Yale;* LLB, LLM *Toronto; of Osgoode Hall* (Barrister-at-Law)

Associate Professors

Brandt, G.J., BA, LLB *Saskatchewan;* MA *Oxon; of Osgoode Hall* (Barrister-at-Law)

Janisch, H., BA *Rhodes;* BA, MA, LLB *Cantab;* MCL, LLM, JSD *Chicago*

Priestly, Diana M., BA, LLB *British Columbia;* MLL *Washington; of the Bar of British Columbia*

Rayner, W.B., BA, LLB *UWO;* LLM *Yale; of Osgoode Hall* (Barrister-at-Law)

Rendall, J.A., BA *Toronto;* LLB *Osgoode Hall;* LLM *Michigan; of Osgoode Hall* (Barrister-at-Law)

Sinha, S.P., BCom *Poona;* MS *Arizona;* LLB *Bombay;* CWA, LLM, JSD *Illinois*

Assistant Professors

Anisman, P., BA, LLB *Toronto;* LLM *California, Berkeley; of Osgoode Hall* (Barrister-at-Law)

Arnold, B.J., BA *UWO;* JD *Harvard*

Balogh, L.V., BA, LLB *Saskatchewan;* LLM *Toronto*

Bushnell, S.I., BSA *Toronto;* LLB *Dalhousie;* LLM *Osgoode Hall*

Elder, P.S., BA *Queen's;* LLB *British Columbia;* LLM *London;* of the Bar of British Columbia

Farquhar, K.B., LLB, LLM *Hons Victoria;* LLM *Michigan* (Barrister and Solicitor of the Supreme Court of New Zealand)

McRae, D.M., LLB, LLM *Hons Otago;* JSD *Columbia* (Barrister and Solicitor of the Supreme Court of New Zealand)

Samuels, J.W., BA, LLB *Queen's;* LLM *London*

Thomson, G., BA, LLB *Queen's;* LLM *California, Berkeley; of Osgoode Hall* (Barrister-at-Law) (Assistant Dean)

Usprich, S.J., LLB *Toronto*

Sessional Professors

Carson, His Honor Judge E.H.A., MA *Toronto; of Osgoode Hall* (Barrister-at-Law)

Cherniak, E.A., BA; *of Osgoode Hall* (Barrister-at-Law)

Hinnegan, K.A., BBA *Michigan;* LLB, LLM *Chicago; of Osgoode Hall* (Barrister-at-Law)

McKenzie, A.L., QC, BA; *of Osgoode Hall* (Barrister-at-Law)

Sessional Lecturers

Brown, T.N. (Mrs.), BA, MSW *Ottawa*

Genest, His Honor Judge M.H., BA, LLB *UWO; of Osgoode Hall* (Barrister-at-Law)

Pollock, E.M., BA, LLB *Saskatchewan, of Osgoode Hall* (Barrister-at-Law)

Faculty of Medicine

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ACADEMIC CALENDAR FOR UNDERGRADUATE MEDICINE

1971

June 28, Monday	First Term begins for Fourth Year.
August 27, Friday	Examinations for removal of conditions begin at 9:00 a.m. in the Medical Sciences Building.
August 30, Monday	Second Term begins for Fourth Year.
September 13, Monday	Orientation – Complete details concerning Registration will be sent to all students by the Registrar's Office.
September 14, Tuesday	Lectures begin for First, Second and Third Years.
October 11, Monday	Thanksgiving Day – Holiday with classes cancelled.
November 1, Monday	Third Term begins for Fourth Year.
November 5, Friday	First Quarter ends for First, Second and Third Years.
November 8, Monday	Second Quarter begins for First, Second and Third Years.
December 17, Friday	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 Head of the Department concerned.)

1972

January 3, Monday	Lectures resume for First, Second and Third Years.
January 10, Monday	Fourth Term begins for Fourth Year.
January 14, Friday	First Semester ends for First, Second and Third Years.
January 17, Monday	Second Semester begins for First, Second and Third Years.
January 17, Monday	Payment of final instalment of fees is required on or before this date.
March 10, Friday	Third Quarter ends for First, Second and Third Years.
March 13, Monday	Fourth Quarter begins for First, Second and Third Years.
March 13, Monday	Fifth Term begins for Fourth Year.
March 31, Friday	Good Friday – Holiday with classes cancelled.
May 5, Friday	Classes end for First, Second and Third Years.
May 8, Monday	Study Week begins for First, Second and Third Years.
May 14, Sunday	Fifth Term ends for Fourth Year.
May 15, Monday	Examinations begin for First, Second and Third Years.
May 24, Wednesday	Medical Council of Canada Examinations begin for Fourth Year.
June 2, Friday	Spring Convocation (Medicine).

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.

OFFICERS OF ADMINISTRATION

Dean: Douglas Bocking, MD
Assistant to the Dean - Continuing Education: A. T. Hunter, BA, MD
Assistant to the Dean - Postgraduate Education: J. M. Thompson, BA, MD
Assistant to the 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

HEALTH SCIENCES COMMITTEE OF THE BOARD OF GOVERNORS

Captain Joseph Jeffery, Chairman
M. L. Barr
W. J. Blackburn
R. M. Ivey
Dr. O. H. Warwick, Vice President (Health Sciences)
Dr. J. B. Neilson, Executive Director, University Hospital
Dean R. Catherine Aikin, Faculty of Nursing
Dean W. J. Dunn, Faculty of Dentistry
Dean D. Bocking, Faculty of Medicine (Secretary)

Ex officio members: The Chairman of the Board of Governors, The Vice Chairman of the Board of Governors, The President of the University, The Vice President, Administration and Finance, and The Secretary of the Board of Governors.

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, Assistants to the Dean, the Deans of the other Health Sciences Faculties, the administrators of the major teaching hospitals, respresentatives of the Faculties of Arts, Social Sciences and Science, the President of the Hippocratic Society, and one 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, 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 School of Nursing – the initial phase of the planned Health Sciences Centre on the main university campus. The Department of Pathological Chemistry is situated at Victoria Hospital. The administrative offices of the Departments of Clinical Neurological Sciences, Medicine, Obstetrics and Gynaecology, Ophthalmology, Physical Medicine and Rehabilitation, Therapeutic Radiology and Surgery are located at Victoria Hospital, the Departments of Otolaryngology and Diagnostic Radiology at St. Joseph's Hospital, the Department of Paediatrics at the War Memorial Children's Hospital, and the Department of Anaesthesia at Westminster Hospital. The new Department of Community Medicine is 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 89,000 volumes and regularly receives the leading medical and dental 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

Victoria Hospital: Victoria Hospital has a total of 922 beds and 80 bassinets, of which the majority are available for teaching, 402 being in clinical teaching units and under the jurisdiction of Clinical Chiefs of Departments. There are also 329 "modified" teaching beds which are available to the Clinical Teachers, making a total of 731 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-six 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 South Western 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. Over half of the patients are defined as teaching 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 capacity is 593 beds with 90 bassinets. All patients are available for demonstration teaching and 250 beds are in Clinical Teaching Units under the supervision of 26 full-time teachers.

The hospital is approved by the Canadian Council on Hospital Accreditation and by the Royal College of Physicians and Surgeons of Canada for graduate training as part of the University affiliated programs.

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 85 beds. The psychiatric department includes facilities for out-patient treatment of emotional disorder.

Recent areas of development are in Endocrinology, Chemical Pathology, Pulmonary Function, Neurology, Clinical Pharmacology and Rheumatology.

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.

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 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. There is a Clinical Investigation Unit, which is available to the many research projects conducted in the hospital.

London Psychiatric Hospital: This Hospital is operated by the Ontario Department of Health for the treatment of mental illness. Approximately 600 beds provide both in-patient day care and out-patient services. 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. The Hospital is recognized by the Royal College of Physicians and Surgeons of Canada for graduate training in Psychiatry.

St. Thomas Psychiatric Hospital: This modern mental hospital situated on No. 4 Highway one and a half miles south of St. Thomas, has a bed capacity of 1,500. The annual admission rate is approximately 1,000, consisting of all types of psychiatric disorders, mainly the major psychoses. In addition, the hospital provides in-patient, out-patient, day-care and emergency services, as well as Consultative and Educational services to local agencies. It is recognized by The Royal College of Physicians and Surgeons of Canada for graduate training.

Sir Adam Beck Chest Diseases Unit: This hospital has a complement of 115 beds under the control of the London Health Association and the Ontario Hospital Services Commission for the investigation, diagnosis and treatment of all types of chest diseases including pulmonary tuberculosis. In addition it retains its role for the management of non-pulmonary tuberculosis.

The hospital is under direction of the Executive Director of the University Hospital. The hospital is accredited by the Canadian Council on Hospital Accreditation.

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 confirement 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, in addition to a broad range of research studies by C.P.R.I. staff, there is also collaboration with The University of Western Ontario. Clinical teaching is conducted for undergraduate 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

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. Students who have successfully completed the Second Year of an Honors Program at The University of Western Ontario provided that the Program has included at least one course in each of Biology, Chemistry, Physics and Organic Chemistry.

(The Admissions Committee will consider applications from candidates who have achieved exceptional standing in First Year Programs in the Faculty of Science provided that the Programs have included Biology, Chemistry and Physics. Applicants who are granted admission under this rule will be required to obtain credit in Organic Chemistry before registration.)

2. Students who have been granted the BA or BSc degree at The University of Western Ontario after completing successfully a four-year Honors Program or a three-year General Program;

3. Students who have been granted the BA or BSc degree at a university other than The University of Western Ontario, provided it is approved by The College of Physicians and Surgeons of Ontario.

All applicants must have demonstrated the ability to succeed in Natural Science subjects, and obtained credit for a one-year course in Organic Chemistry.

Because of the great number of applications received, it has become necessary to consider only those applicants who are 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 not be considered from students who have failed a year 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 72, Canada. The completed application forms and the supporting documents (originals) are to be mailed to the Director of Admissions, The University of Western Ontario, London 72, Canada, NOT LATER THAN FEBRUARY 1st of the year in which application is made.

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 1971 or May 1972 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 1971-1972, 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 1971 or May 1972 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 Provisional Admission. On the other hand, in some instances an applicants may be advised that it will not be possible to gain admission in September, 1972. 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 if Registration by mail is available, but if necessary they may be divided into two instalments, $400 payable with Registration and $332.50 payable on the first day of the Second Semester, January 17th, 1972. 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 $727.50*

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 400.00

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: Designated days 10.00
After designated days. 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, endownment income and other grants and gifts.

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*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—Appr. $28.00 per week ..... $950.00 to $1,150.00*

Tuition and Prescribed Accessory Fees. . . . 727.50

Books..... Appr. 200.00

Microscope (First Year Only).....150.00

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).....175.00

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.

Defries Medical Student-Aid Bursaries: Up to $250 each. Available to students in any year of Medicine.

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 the first and second years 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:

Grace Blackburn Chapter
The Colonel William Gartshore Chapter
Bishop Hellmuth Chapter
7th Regiment and London Garrison Chapter
William E. Saunders Chapter
Dr. W. J. Stevenson Chapter
Nicholas Wilson Chapter

The Bill McKibbon Bursary: $500 each year throughout Pre-medicine and Medicine. 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.

Medical Students Bursary Plan, Ontario Department of Health: $3,000 each. A number of bursaries are available to students who have completed their first year in Medicine. Maximum assistance will no 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.

Roche Bursary: $1500 annually from Hoffman-La Roche Limited for deserving undergraduate medical students. Up to three $500 bursaries may be awarded at the discretion of the University Awards Officer.

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.

* Approximate figure based on 34 weeks in residence.

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 contact 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 1971-1972. 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 required to attend the courses of instruction and the examinations in all subjects prescribed for that year.

(b) The attendance at not less than eighty per cent of the lectures and the laboratory and clinical work given in any required course shall be prerequisite to admission to sessional or final examinations in such a course. Absence from lectures, laboratories, or clinical work is excused only on account of illness or by expressed permission of the Instructor and the Dean.

(c) Classes desiring postponement of any lecture, clinic or laboratory periods shall be required to secure permission for such postponement from the Dean, who shall thereupon notify the Head of the Department concerned.

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:

I. That the entrance requirements of the Faculty of Medicine of The University of Western Ontario have been fully satisfied;

II. 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 or School of Medicine, at least two sessions of which must have been spent at this Faculty of Medicine;

III. That he has a minimum attendance at eighty per cent of the lectures and the clinical and laboratory courses as prescribed for the different years, such attendance to be attested by the Dean before admission to examinations;

IV. 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 paractise. 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.

MEDICAL LICENSING BODIES

The Provincial Medical Licensing Bodies are as follows:

The College of Physicians & Surgeons of British Columbia, Vancouver, B. C.

The College of Physicians & Surgeons of Alberta, Edmonton, Alberta.

The College of Physicians & Surgeons of Saskatchewan, Saskatoon, Sask.

The College of Physicians & Surgeon of Manitoba, Winnipeg, Manitoba.

The College of Physicians & Surgeons of Ontario, Toronto, Ontario.

The College of Physicians & 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, 1867 Alta Vista Drive, Ottawa 8, Canada.

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. These programs begin in the Third Year and admission is from the Second Year of the Honors Program in Biology, Chemistry or, in general, in such other disciplines that require General Program (Natural Sciences) in First Year and permit inclusion of a course in Organic Chemistry. 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, Pathology, Pathological Chemistry, Pharmacology, Physiology, and Epidemiology and Preventive Medicine.

The Clinical Sciences–Graduates in Medicine, who have completed the required graduate and postgraduate training in a clinical department of the Faculty of Medicine, are eligible for the Degree of Master of Clinical Science (MClSc). 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 PROGRAMS

Postgraduate training at the University is offered by the Departments of Anaesthesia, Family Medicine, Medicine, Microbiology, Clinical Neurological Sciences (Divisions of Neurology and Neurosurgery), Obstetrics and Gynaecology, Ophthalmology, Otolaryngology, Paediatrics, Pathology, Pathological Chemistry (Divisions of Clinical Pathology, Medical Biochemistry, and Haematologic Pathology), Physical Medicine and Rehabilitation, Psychiatry, Surgery (Divisions of Cardiovascular and Thoracic Surgery, Orthopaedic Surgery, Plastic and Reconstructive Surgery, and Urology), Diagnostic Radiology and Therapeutic Radiology.

All programs are accredited by The Royal College of Physicians and Surgeons of Canada for full training. The training program in Family Medicine leads to the Certification examination of the College of Family Physicians of Canada. The Committee on Postgraduate Education, the Assistant to the Dean-Postgraduate Education, and the Directors of Medical Education at each of the major teaching hospitals co-operate in the coordination of clinical postgraduate education.

Appointments are usually made 6 to 8 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 to the Dean - Continuing Education. The Committee is continuing to experiment with the use of broadcast television in continuing medical education. A concerted effort is now being made to assist with the development of 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 Lecturship was initiated in 1946 by friends of the late Dr. Macgregor, former Professor 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 Dr. 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.

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.

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 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

1971-1972 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.

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 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 15 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 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 Leonard Sutclifffe Memorial Scholarship

This Scholarship of $150. is to be awarded to the student with the highest academic 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 Community Medicine

This prize, value $100. is awarded by the Ontario Medical Association to the student obtaining the highest aggregate marks (first and third years combined) in the course in Community Medicine.

The Borden Award in Paediatrics

This Award, value $100. is grantee 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 $75.00 to be awarded to the third year student in the Faculty of Medicine who shows the greatest proficiency in 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 Pathological Chemistry.

The W. H. McGuffin Scholarships in Radiology

Two Scholarships, consisting of awards of $60. and $40. 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 15 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, 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 Community 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 clinical and research aspects of Community 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

The 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 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 1969, 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 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.

Wilhelmina and J. Gordon McIntosh Prizes in Public Speaking

Medical students are eligible to compete for certain of the McIntosh awards under terms specified by the Scholarship Committee.

The Howard Ferguson Award

The Howard Ferguson Award is 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.

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 15.

Advanced Graduate Scholarships

There are a number of scholarships tenable abroad for highly qualified students to do further post-graduate 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 Med's Merrymakers, and "Tachycardia", the annual variety show. The social program of the Hippocratic Society includes the annual Med's picnic, the Annual Hippocratic Banquet, and the Med's At Home. The Council provides certain services for the student, 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.

The Society takes an active part in the Canadian Association of Medical Students and its program, including the Summer School, the Drug Appeal, Interne Placement and the National Convention.

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 and two dollars for membership in the Canadian Association of Medical Students are 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.

Throughout the four years approximately 20% of the timetable is unscheduled to permit the student to pursue various electives. The electives available in First Year include a course in Behavioral Sciences related to Medicine.

Students are introduced to patients in the First Year in a combined Basic and Clinical Sciences course, and also in a course on Interviewing. The major courses in First Year are Gross Anatomy, Histology, Biochemistry, Physiology and Community Medicine. Students are also introduced to the History of Medicine.

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 Pathological Chemistry. 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. The clerkship provides the student an opportunity 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 ckerkship comprises five nine-week terms and three weeks for study, examinations, etc.

DEPARTMENTS OF THE FACULTY

DEPARTMENT OF ANAESTHESIA

Professor and Head of the Department:

W.E.G.A. Spoerel

THIRD YEAR

Together with the Department of Pharmacology, twelve lectures are given in clinical pharmacology, with particular emphasis on aspects of acute medical conditions and anaesthesia. Another eight hours of lectures and demonstrations cover clinical anaesthesia and special patient care associated with it, including respirator care, inhalation therapy, and cardio-pulmonary 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.

Students interested in anaesthesia and intensive patient care are invited to use their elective time for further studies in this specialty.

DEPARTMENT OF ANATOMY

Professor and Chairman of the Department:

R.C. Buck

FIRST YEAR

1. Developmental and Definitive Anatomy

Definitive human anatomy is taught as a series of concepts each of which has developmentals topographical and radiological aspects. While the amount of detailed memory work has been drastically reduced the class members are required to

develop perspective regarding factual highlights which are considered relevant to their future clinical training.

Wherever possible classical lecturing techniques have been abandoned in favour of the more educative pursuits of lecture-demonstration and group discussion. Each practical session is introduced by a senior staff member who presents the main points at issue in a short introductory talk. Class members are encouraged to use departmental teaching aids as they see fit; this includes prosections, three-dimensional illustrations, charts, radiographs, models and mounted specimens. The extent to which particular parts are dissected in the cadaver may also be a matter of personal preference.

During the study of special parts the appropriate clinical department participates; for example in the period devoted to head and neck region otorhinolaryngologists attend; and when the pelvis is the topic obstetrical aid is available. The department of radiology provides the assistance of trained specialists to elucidate the radiological aspects of anatomical problems during the entire course. Attempts are made to provide special sessions at which subjects to topical interest such as "tissue transplantation" are presented by experts.

Throughout the course strenuous efforts are made to correlate structure with function and, as far as possible, to coordinate anatomical studies with the other basic sciences.
312 hours

2. **Histology.** A lecture course on the structure of human cells, tissues and organs, in terms of light and electron microscopy. The correlation of structure and ultrastructure with function is emphasized.
46 hours

3. **Histology.** A practical laboratory course in the structure of normal human tissue and organs, with demonstrations of special preparations with both light and electron microscopy.
92 hours

SECOND YEAR

4. **Neuroanatomy.** 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, Biochemistry, Pathology, Pharmacology, Physiology and Clinical Neurological Sciences collaborate.
39 hours

5. **Neuroanatomy.** 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.
30 hours

6. **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

THIRD YEAR

7. **Elective.** An elective course in Applied Gross Anatomy will be offered by the Department of Anatomy for third year medical students and fourth year medical rehabilitation students. The objective of the course is to recall anatomical features pertinent to the clinical sciences and to present details of relevant structures previously not covered.
78 hours

The Department of Anatomy also participates in a series of Interdisciplinary Conferences based on the various aspects of the Anatomical Sciences taught in the Department.

MEDICAL REHABILITATION

1. **Gross Anatomy.** A series of tutorials and demonstrations is offered in regional gross anatomy and related disciplines. The teaching is supplemented by a course in the dissection of parts of the human body. The aspects of anatomy applied to the living human body are emphasized.
243 hours.

2. **Neuroanatomy.** 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.
26 hours

3. **Elective.** An Elective course in Applied Gross Anatomy for fourth year medical rehabilitation students will be taken with third year medical students.
78 hours

NURSING

1. **Human Anatomy.** A course of lectures and lecture demonstrations which commences with the principal ultrastructural features of cells. Subsequent histological classification leads through developmental phenomena to major concepts of functional, topographic and systemic anatomy. Participation of students is encouraged during all meetings of the class and emphasis is given to the 'living' state rather than to cadaveric anatomy.
63 hours

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Professor and Head of the Department:

R.G.E. Murray

SECOND YEAR

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, hypersensitivity; antibiotics and chemotherapy; and major topics in mycology and parasitology. A special section of the course will be 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

NURSING

1. Microbiology for Nurses. A course of 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; protozoan and animal parasites; the practice of immunization; the services and responsibilities of hospital, regional, provincial and government laboratories.
80 hours

DEPARTMENT OF BIOCHEMISTRY

Professor and Head of the Department:

H.B. Stewart

FIRST YEAR

1. A course of lectures in general biochemistry. Chemistry of carbohydrates, lipids and proteins; protein structure; chemistry of animal tissues; chemistry of the cell; blood; enzymes; cellular metabolism; structure and function of nucleic acids; biochemical genetics; lipid metabolism; protein metabolism and protein synthesis; minerals, chemistry and function of vitamins and hormones.
96 hours

2. A laboratory course illustrating the material covered in the lectures. During a portion of the course the class is broken down into small groups for exercises of the "project" type.
96 hours

SECOND YEAR

1. Neurochemistry. Lectures in Neurochemistry are given as part of the Second Year course in Neurological Science.

2. Integrative Biochemistry. A course of lectures and seminars devoted to a consideration of control mechanisms in biological processes including genetic, hormonal and chemical mechanisms.
40 hours

NURSING

1. An introductory course of lectures in general biochemistry is presented to students enrolled in the second year of the nursing baccalaureate program.
25 hours

DEPARTMENT OF BIOPHYSICS

Associate Professor and Chairman of the Department

Margot R. Roach

The Department applies the fundamental laws of physics to cells and organisms.

Electives are available for Medical Students and may involve guided reading, research, or clinical teaching (physical diagnosis).

First and Second Year Electives: A seminar course on the fundamentals of Biophysics as applied to human biology in health and disease. Research projects can be arranged if the student desires.

Third Year Elective: The Biophysical Basis of Physical Diagnosis' conducted at Victoria Hospital throughout the year so that patients can be used as examples. The fundamental laws of physics (sound, elasticity, etc.) are applied to examination of the chest, heart, abdomen, musculoskeletal and nervous systems. The emphasis is on how altered physical states produce altered physical findings.

Fourth Year Elective: As for third year, except in a block, or else a research project tailored to the student's interests.

Graduate Program: MSc and PhD programs are described in the Graduate Calendar. A wide variety of medically-oriented research projects are underway at present. Details can be obtained from the Department.

CANCER RESEARCH LABORATORY

(A Unit of the National Cancer Institute of Canada)

Director and Professor of Biochemistry:

J.A. McCarter

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 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

Professor and Chairman of the Department:

C.G. Drake

Division of Neurology

Professor and Chairman of the Division:

H.J.M. Barnett

Division of Neurosurgery

Professor and Chairman of the Division:

C.G. Drake

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 clincial 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, Neurorodiology, 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 Divisions of Neurology and Neurosurgery as well as Neuroradiology, Neuropathology and basic science rounds.

DEPARTMENT OF COMMUNITY MEDICINE

Professor and Chairman of the Department:

Carol W. Buck

Division of Epidemiology and Prevention Medicine

M.F. Fallon Memorial Professor of Preventive Medicine and Chairman of the Division:

Carol W. Buck

Division of Family Medicine

Professor and Chairman of the Division:

I.R. McWhinney

FIRST YEAR

32 weeks – 2 hours per week

1. **Epidemiology**. An introduction to the uses and methods of epidemiology by lectures and practical exercises.

2. **Introduction to Family Medicine.** With special emphasis on the behavioral aspects of medical care.

THIRD YEAR

1. **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

2. **Family Medicine.** A course of group discussions and visits to preceptors in their offices.
2 hours per week for 24 weeks

FOURTH YEAR

1. **Community Medicine Clerkship.** A block rotation providing direct experience in Family Medicine and in Health Department programs.
3½ weeks per student

DEPARTMENT OF HISTORY OF MEDICINE AND SCIENCE

Assistant Professor and Acting Chairman of the Department

R.A. Richardson

FIRST YEAR

History of Medicine. An introductory course of sixteen lectures dealing with the historical growth and expansion of medical and scientific ideas from antiquity to modern times.

The responsibilities of this Department include programs in the history of scientific ideas available to honors students in the Health Sciences and Faculty of Science, and to graduate students in the Biosciences Division and the School of Library and Information Science.

DEPARTMENT OF MEDICINE

The Richard Ivey Professor of Medicine and Head of the Department:

R.W. Gunton

FIRST YEAR

1. **Basic and Clinical Science.** Six 3-hour sessions, each one beginning with the whole class present for a discussion, by both a basic scientist and a clinician, of a common sign or symptom, and followed by bedside teaching of the same subject, in small groups, at the various hospitals. Emphasis is placed on the relevance of basic science to clinical medicine and on the approach to the patient.
18 hours

SECOND YEAR

2. **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

3. **Clinical Science.** Continuing instruction and experience in physical diagnosis and history taking.
32 hours (First semester)

4. **Principles of Medicine and Applied Therapeutics.** A course of systematic lectures and case assignment essays on the principles of Medicine and Therapeutics.
78 hours

5. Clinical Medicine. For a four-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.
52 hours (Second semester)

6. Tuberculosis Clinics. The class will be divided into groups, and each student will devote two mornings a week, for one week, to attandance at Clinics at the Beck Memorial Sanatorium.
8 hours

7. 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

8. Clinical Medicine

1. **Clinical Clerkship.** Students will be assigned patients in one of the three 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-specialities, 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.

9. 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

Professor and Chairman of the Department

E.R. Plunkett

SECOND YEAR

Clinical Science. With the advent of the new curriculum, 9 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 and it is hoped that this earlier introduction will be beneficial as it places the emphasis on patient care earlier in his course.

THE CLINICAL YEARS

THIRD AND FOURTH 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 last. 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 may 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

Clinical Professor and Head of the Department:

C. Dyson

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

Professor and Head of the Department:

F.J. Rounthwaite

THIRD YEAR

1. Otology, Rhinology and Laryngology. A course of lectures dealing with the 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

Professor and Head of the Department:

J.C. Rathbun

SECOND YEAR

1. 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 program, at St. Joseph's Hospital.
9 hours

THIRD YEAR

2. A series of twenty-four lectures is given covering Nutrition, Diseases of the Newborn, infancy and Childhood. The differences between the infant and child's response to disease when compared with the adult are pointed out. Electives are available.
24 hours

3. Bedside Teaching. Each clinic group is given a block of beside 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.
30 hours

FOURTH YEAR

4. 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

5. Clinical Clerking. Each student is required to act as a clinical clerk for one 5-week period, writing histories, examining patients, making physical diagnosis and doing laboratory tests under the direction of the teaching Fellow or Chief Resident and members of the staff. He also devotes a portion of his time to 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 twice weekly. 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.

6. The Department of Paediatrics participates in interdisciplinary teaching throughout all years.

7. Bio-chemical research laboratory is situated in the War Memorial Children's Hospital. This provides an outline for those interested in clinical research. 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 Immunohaematology Research Laboratory is situated in an annex to the Children's Hospital. This permits research in this growing field.

DEPARTMENT OF PATHOLOGICAL CHEMISTRY

Professor and Head of the Department:

A.H. Neufeld

THIRD YEAR

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 PATHOLOGY

Professor and Head of the Department:

A.C. Wallace

SECOND YEAR

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, vascular diseases, disorders of growth and neoplasia, specific examples of inflammation.
66 hours

2. **Special Pathology.** 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. In addition to museum specimens and microscopic loan collections, there is extensive use of current postmortem and surgical material from participating hospitals.
180 hours

THIRD YEAR

3. **Medical Jurisprudence.** Nine lectures dealing with law as related to the practice of medicine, duties of a coroner, the coroner's autopsy, matters of medico-legal importance.

FOURTH YEAR

4. **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 investigation, 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

PATHOLOGY FOR NURSES, STUDENTS OR MEDICAL REHABILITATION AND NON-MEDICAL HONOR STUDENTS

This is a 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 and to act as a preliminary course for Course 512 for those who have not had previous experience in this discipline. The course is appropriate for students of Nursing and Medical Rehabilitation and, combined with Course 512, for graduate and honors science students.
18 hours

SURVEY COURSE 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

DEPARTMENT OF PHARMACOLOGY

Professor and Head of the Department:

C.W. Gowdey

SECOND YEAR

1. **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.

In the laboratory periods experiments are performed to demonstrate the principles of biological assay and the effects of drugs on isolated organs and intact animals. Human trials to introduce concepts of clinical pharmacology are also performed.
120 hours

2. **Neuropharmacology–Pharmacology Section of Neurological Science.** Lectures and laboratory exercises devoted to 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.
35 hours

THIRD YEAR

3. **Toxicology.** A series of five lectures dealing with the general problem of toxic substances in the air, in agriculture (pesticides, weedkillers, etc.), in food, in cosmetics and in household chemical products, as well as the toxic effect of drugs, both from their use and misuse. Prevention, antidotes and treatment are discussed.

4. **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

5. **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.
52 hours

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

Professor and Head of the Department:

M.G.P. Cameron

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 have an opportunity to work with patients with problems in rehabilitation. Physical therapy prescriptions will be written for cases examined by the student.
20 hours

PROGRAMS IN MEDICAL REHABILITATION

More detailed information can be found in the Brochures of the Faculty of Medicine entitled "Program in Physical Therapy", "Program in Communication Disorders" and "Program in Occupational Therapy".

DEPARTMENT OF PHYSIOLOGY

Chairman to be named

FIRST YEAR

1. A course of lectures, tutorials, demonstrations and laboratories designed to enable the student to acquire a basic knowledge of the principles of Human Physiology. Emphasis is placed on the development by the student of individualized learning and self evaluation, and he is expected to be able to evaluate physiological data in terms of changes in the homeostatic processes in response to alterations in the internal and external environment. The content includes: the general properties of the living cell and tissue, excitable tissue and muscle, blood, metabolism and nutrition, digestion, circulation, respiration, kidney and body fluids, acid-base balance, endocrinology, reproduction, growth and development.
160 hours

SECOND YEAR

1. **Neurophysiology.** This course, which covers the physiology of the nervous system, particularly in man, is given as part of the general Second Year course in Neurological Science. It consists of lectures, and both human and animal demonstrations and experiments.
40 hours

2. **Integrative Physiology.** This course is designed to integrate the various physiological principles discussed in the first year with particular emphasis on physiological responses to the environment and to disease processes.
40 hours.

NURSING

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, and endocrine glands and reproduction.
52 hours

2. A course of laboratory exercises and conferences to demonstrate and analyse the function of the various physiological systems.
78 hours

MEDICAL REHABILITATION (PHYSICAL THERAPY)

SECOND YEAR

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.
52 hours

2. A course of laboratory exercises and conferences to demonstrate and analyse the functions of the various physiological systems.
78 hours

FOURTH YEAR

Advanced course in neurophysiology and in neuromuscular and exercise physiology.

DEPARTMENT OF PSYCHIATRY

Professor and Head of the Department:

G.E. Hobbs

FIRST YEAR

1. Two half-day visits to familiarize the students with the psychiatric facilities in the area.

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

Clinical Associate Professor, Acting Chairman of the Department.

W.W.J. Wilkins

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 Victoria 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

Clinical Professor and Head of the Department:

T.A. Watson

Instruction for the most part is built up around clinical material which is available through The Ontario Cancer Foundation's London Clinic at Victoria Hospital. Aspects of radiation physics, radiobiology, radiotherapy and nuclear medicine are covered from the practical standpoint, in their application to the patient suffering either from cancer or benign lesions amenable to ionizing radiation. 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.

DEPARTMENT OF SURGERY

Professor and Head of the Department:

A.D. McLachlin

DIVISION OF CARDIOVASCULAR AND THORACIC SURGERY

Clinical Professor and Chairman of the Division:

J.C.G. Coles

DIVISION OF NEUROSURGERY

(See Department of Clinical Neurological Sciences).

DIVISION OF ORTHOPAEDIC SURGERY

Clinical Professor and Chairman of the Division:

J.C. Kennedy

DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

Clinical Professor and Chairman of the Division:

R.M. McFarlane

DIVISION OF UROLOGY

Clinical Professor and Chairman of the Division:

L.N. McAninch

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 discussions 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 rotates through all the surgical specialties. 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 afternoon on topics covering the major topics in surgery.
140 hours

Interdisciplinary and Clinical Pathological Conferences. These are presented weekly. There are no formal lectures.
38 hours

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 9 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

FIRST, SECOND AND THIRD YEARS – 1971-1972

First Quarter – September 13 to November 5
Second Quarter – November 8 to January 14
Third Quarter – January 17 to March 10
Fourth Quarter – March 13 to May 5

FOURTH YEAR – 1971-1972

The Fourth Year will be a 48-week Clinical Clerkship, broken into five nine-week Terms as follows:

First Term – Monday, June 28th, to Sunday, August 29th, inclusive:
Second Term – Monday, August 30th, to Sunday, October 31st, inclusive;
Third Term – Monday, November 1st, to Sunday, January 9th, inclusive;*
Fourth Term – Monday, January 10th, to Sunday, March 12th, inclusive;
Fifth Term – Monday, March 13th, to Sunday, May 14th, inclusive.

**This Term is 10 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
Community Medicine	3½
Medicine	9
Obstetrics and Gynaecology	4½
Ophthalmology	1
Otolaryngology	1
Paediatrics	4½
Psychiatry	3
Diagnostic Radiology	1
Therapeutic Radiology	½
Surgery	7

The remaining twelve weeks will be utilized as follows:

Elective	8
Travel Time with Elective	1
Examinations and Study Time	2
Christmas Leave*	1

**To be arranged by the Head of the Department concerned in each case.*

Interdisciplinary Conferences will be held, jointly with Third Year, at 0800 hours. Thursday morning, at Victoria Hospital, weekly beginning Thursday, January 20th. 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.

EXAMINATION TIMETABLE

FIRST, SECOND AND THIRD YEARS

1971-1972

The following examinations are written at the termination of the courses: Biochemistry, Clinical Science, Genetics in the Second Year; Eye, E.N.T. and Physical Medicine in the Third Year.

Final examinations in remaining subjects in First, Second and Third Years will be written May 15th to 25th, approximately.

FINAL YEAR EXAMINATION TIMETABLE

University Examinations – 1971-1972

There will be no separate set of University examinations, and the examinations of the Medical Council of Canada will no longer be used for our assessment of our students for graduation purposes. Instead, students will be 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.

Medical Council of Canada Examinations

Spring of 1972

The examinations of the Medical Council of Canada will be written May 24th, 25th, and 26th, 1972.

Members of the Faculty of Medicine

PROFESSORS EMERITI

Macallum, A.B., BA, MD, PhD *Toronto; FRSC*

Stavraky, G.W., MD *Odessa;* MSc, MDCM *McGill;* FRSC

Watson, E.M., MD, MSc *UWO;* MRCP(Edin), FRCP (Edin), FRCP(C), FACP

Waud, R.A., MD, MSc *UWO;* PhD *Chicago;* FACC

DEPARTMENT OF ANAESTHESIA

Professor

Spoerel, W.E.G.A., MD *Frankfurt-on-Main;* FRCP(C). Head of the Department

Associate Professor

Webster, A.C., BSc; MB, ChB *Leeds;* FFARCS(Eng), FRCP(C)

Clinical Associate Professors

Aitken, R.R., MD *UWO,* CRCP(C)

Keeri-Szanto, M., MD *Budapest;* CRCP(C)

Clinical Assistant Professors

Bain, J.A., MD *UWO,* CRCP(C)

Cameron, Harold, MB, ChB *Edin;* CRCP(C)

Clancy, P.R., BA, MD *UWO,* CRCP(C)

Russell, E.S., BA, DipIMed *Saskatchewan;* MD *UWO,* CRCP(C), FACA

Sellery, G.R., MD *Toronto;* DA *England;* DA *Toronto,* FRCP(C)

Clinical Lecturers

Adamson, D.H., MB, ChB *Edin;* FRCP(C)

Butlin, G.R., MD *Del Litoral;* CRCP(C)

Glennie, G.D., MB, BS *London;* DA *McGill;* MRCS(Eng), LRCP(London), CRCP(C)

Hersey, M.L.W., BSc *McGill;* MD, PhD *UWO;* CRCP(C), FACA

Muir, J.M., MB, ChB *Glasgow,* FRCP(C)

Nielsen, J.S., LRCP(London), MRCS(Eng), CRCP(C)

Norry, H.T., MD *UWO;* CRCP(C)

Slater, P.E., MD *UWO;* CRCP(C)

Squire, G.W., BA, MD *UWO;* FRCP(C)

Walker, F.W., DVM *Toronto;* MD *UWO;* CRCP(C)

Honorary Lecturers

Groom, A.C., BSc, PhD *London,* FInstP

Growse, J.M., MDCM *Queen's;* CRCP(C)

Richardson, K.R., MD *UWO,* CRCP(C)

Stewart, C.A., MD *UWO,* CRCP(C)

Instructors

Kandel, Patricia F., MD *Ottawa;* CRCP(C)

McFarlane, N.A., BA *UWO,* DDS *Toronto,* DA *Pittsburgh*

Rossiter, Helen M., MB, ChB *Edin;* DA *London;* FFARCS

Stewart, J.M., MD *UWO;* CRCP(C)

DEPARTMENT OF ANATOMY

Professors

Barr, M.L., SM, BA, MSc, MD *UWO;* LLD *Queen's, Toronto, Alberta, Dalhousie;* Dr med h c *Basel;* FRSC, FRCP(C), FACP

Buck, R.C., MD, MSc *UWO;* PhD *London.* Chairman of the Department

Hoshino, K., MD, DMedSc *Tokyo*

Associate Professors

Gwinnett, A.J., BDS *Birmingham;* LDSRCS(Eng); PhD *Bristol*

Gwyn, D.G., MRCS(Eng), LRCP, MBBS *London;* PhD *Birmingham*

Hollenburg, M.J., BSc(Med), MD *Manitoba;* MSc, PhD *Wayne State*

Montemurro, D.G., 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*

Donisch, E.W.K.F., MD *Bonn;* MSc *UWO*

Gammal, E.B., MB, BCh *Cairo;* PhD *UWO*

Sergovich, F.R., BA *McMaster;* PhD *UWO*

Shaver, Evelyn L., BSc, MSc, PhD *UWO*

Singh, R.P., BA, MSc, PhD *UWO*

Lecturers

Clattenburg, R.E., BSc, MSc *Acadia*

Cline, Aileen, MD *UWO*

Honorary Lecturers

Robinow, C.F., MD *Hamburg;* FRSC

Walden, D.B., BA *Wesleyan;* MSc, PhD *Cornell*

Instructors

Goldberg, A.H., MBBS *Dublin;* LRCPI, LRCSI

Jory, T.A., MD *UWO;* FRCS(C), FACS

Leyshon, G.A., BA *UWO;* MS *Illinois*

Warma, S.K., MBBS *Calcutta;* FRCS(Eng), CRCS(C), FACS

DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY

Professors

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

Murray, R.G.E., BA, MA *Cantab;* MDCM *McGill;* FRSC. Head of the Department

Robinow, C.F., MD *Hamburg;* FRSC

Clinical Professor

Hatch, L.A., MBBS *London;* DipBact&Immun *London;* FCPath

Associate Professors

Ebisuzaki, K., BSc *UWO;* MS, PhD *Wisconsin*

Medzon, E.L., BSc, MSc *Manitoba;* PhD *McGill*

Robinson, John, 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 Professors

Cheevers, W.P., BA *Colorado;* PhD *Mississippi*

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.B., MS *Hawaii;* PhD *Pennsylvania*

Clinical Assistant Professor

Campsall, E.W.R., BA *Queen's;* MDCM *McGill*

Clinical Lecturer

Black, W.A., MB, ChB *Glasgow,* MRC Path

Honorary Lecturers

Chodirker, W.B., BSc(Med), MD *Manitoba*

Hannay, C.L., BSA *Toronto;* DIC, PhD *London*

Roslycky, E.B., BSc, MSc *Manitoba;* PhD *Wisconsin*

Toogood, J.H., MD *Toronto;* DiplIntMed *McGill;* FRCP(C)

Instructor

Galsworthy, Sara B., BA *Pomona,* PhD *Wisconsin*

DEPARTMENT OF BIOCHEMISTRY

Professors

Bigelow, C.C., BASc *Toronto;* MSc, PhD *McMaster*

Carroll, K.K., BSc, MSc *New Brunswick;* MA *Toronto;* PhD *UWO*

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

McCarter, J.A., BA, MA *British Columbia;* PhD *Toronto;* FRSC

McMurray, W.C., BSc, PhD *UWO*

Rossiter, R.J., BSc *Western Australia;* BA, MA, DPhil, BM, BCh, DM *Oxon;* FRIC(Eng), FRSC

Smith, D.B., BA, MA *British Columbia;* PhD *Toronto*

Stewart, H.B., MD, PhD *Toronto;* PhD *Cantab.* Head of the Department on leave of absence

Strickland, K.P., BSc, MSc, PhD *UWO*

Associate Professors

Ball, Judith K., BSc *Mount Allison;* MSc, PhD *Dalhousie*

Heagy, F.C., MD, MSc, PhD *UWO*

Magee, W.L., BSc, MSc, PhD *UWO*

Walker, I.G., BA *Saskatchewan;* MA, PhD *Toronto*

Webling, D.D., BSc, MB, BS, PhD *Adelaide;* DTM&H Sydney

Assistant Professors

Cook, R.A., BSc, MSc, PhD *Manitoba*

Donisch, Valentine, MD *Bonn;* PhD *UWO*

Galsworthy, P.R., BSc *Queen's;* PhD *Wisconsin*

Gatfield, P.D., MD *Queen's*

Gordon, B.A., MDCM, MSc, PhD *Queen's*

Guthrie, J.P., BSc *UWO,* PhD *Harvard*

Haines, D.S.M., BA, MD *UWO;* PhD *Toronto*

Trevithick, J.R., BSc *Queen's;* PhD *Wisconsin*

Honorary Lecturers

Chefurka, W., BSc *Manitoba;* MSc *Montana State;* PhD *Harvard*

Hudson, A.J., MD, BSc *Toronto;* FRCP(C)

Krupka, R.M., MA *Saskatchewan;* PhD *McGill*

Spencer, E.Y., BSc, MSc *Alberta;* PhD *Toronto;* FCIC

DEPARTMENT OF BIOPHYSICS

Professors

Burton, A.C., MBE, BSc *London;* MA, PhD *Toronto;* LLD *Alberta;* FRSC

Roach, Margot R., BSc *New Brunswick;* MD, CM *McGill;* PhD *UWO,* FRCP(C). Chairman of the Department

Associate Professors

Groom, A.C., BSc, PhD *London;* FInstP

Inch, W.R., BSc *Queen's,* PhD *UWO*

Taylor, C.P.S., BA *British Columbia;* BA, MA *Oxon;* PhD *Pennsylvania*

Assistant Professors

Canham, P.B., BASc *Toronto;* MSc *Waterloo;* PhD *UWO*

Duncan, R.I., BSc, MSc, PhD *Oklahoma*

Sherebrin, M.H., BSc(EP) *Manitoba;* MSc, PhD *UWO*

Sutherland, R.M., BSc *Acadia;* PhD *Rochester*

Honorary Lecturers

Johnson, L.N., BS *Pacific,* MS *Oregon,* PhD *Michigan*

Miller, D.M., BSc, MSc *Alberta;* PhD *McGill*

CANCER RESEARCH LABORATORY

(A Unit of the National Cancer Institute of Canada)

Director, and Professor of Biochemistry

McCarter, J.A., BA, MA *British Columbia;* PhD *Toronto;* FRSC

Associate Professors

Ball, Judith K., (Biochemistry), BSc *Mount Allison;* MSc, PhD *Dalhousie*

Ebisuzaki, K., (Bacteriology and Immunology), BSc *UWO;* MS, PhD *Wisconsin*

Assistant Professors

Cheevers, W.P., (Bacteriology and Immunology), BA *Colorado;* PhD *Mississippi*

Sinclair, N.R.S., (Bacteriology and Immunology), BSc, MD, PhD *Dalhousie*

DEPARTMENT OF CLINICAL NEUROLOGICAL SCIENCES

Professor

Drake, C.G., MD, MSc *UWO;* FRCS(C), MS *Toronto.* Chairman of the Department

Clinical Assistant Professor

Allcock, J.M., MRCS, LRCP(Eng), MBBS *London;* DMRD(Eng), FFR

Honorary Lecturers

Ball, M.J., MD *Toronto,* CRCP(C)

Haust, M. Daria, MD *Heidelberg;* MSc *Queen's;* CRCP(C)

Hinton, G.G., BSc, MDCM *McGill;* DCH, FRCP(C)

DIVISION OF NEUROLOGY

Professor

Barnett, H.J.M., MD *Toronto;* FRCP(C). Chairman of the Division

Associate Professor

Hudson, A.J., MD, BSc *Toronto;* FRCP(C)

Assistant Professor

Kertesz, A., MDCM *Queen's;* BSc(Med), *Toronto;* FRCP(C)

Clinical Assistant Professor

McInnis, W.P., BA, MD *UWO*

Lecturer

Brown, W.F., MD *UWO;* FRCP(C)

DIVISION OF NEUROSURGERY

Professor

Drake, C.G., MD, MSc *UWO;* FRCS(C), MS *Toronto.* Chairman of the Division

Assistant Professor

Girvin, J.P., MD *UWO;* PhD *McGill;* FRCS(C)

Clinical Assistant Professor

Barr, H.W.K., BSc(Med) *Toronto;* MD *UWO;* FRCS(C)

Lecturer

Amacher, A.L., MD *UWO;* FRCS(C)

DEPARTMENT OF COMMUNITY MEDICINE

Professor

Buck, Carol W., MD, PhD *UWO;* DPH *London.* Chairman of the Department

DIVISION OF EPIDEMIOLOGY AND PREVENTIVE MEDICINE

M.F. Fallon Memorial Professor of Preventive Medicine and Chairman of the Division:

Buck, Carol W.

Associate Professors

Rand, C.G., BA *Mt. Allison;* MDCM, DipIntMed *McGill;* CRCP(C), MPH *Harvard*

Wanklin, J.M., BA, PhD *UWO*

Clinical Associate Professor

Hutchison, D.A., MD, DPH *Toronto*

Assistant Professors

Stavraky, Kathleen M., MD, PhD *UWO*

Thurlow, H.J.A., BA, MA, MD *UWO*

Watson, J.H., MDCM *Dalhousie;* DPH *Toronto*

Williams, J.I., BA *Nebraska Wesleyan;* MA *New Hampshire;* PhD *Florida State*

Clinical Lecturers

Aldis, R.M., MD *UWO;* DPH *Toronto*

Appleford, R.D., BA, MD *Toronto,* DPH *Toronto*

Cram, D.M., MD, MSc *UWO,* CRCP(C)

Harris, A.J., DDS *Toronto*

Neilson, J.B., MBE, MD *Toronto;* FACHA

Stewart, Olive J., BA, MD *UWO;* CRCP(C)

Honorary Lecturer

Martinello, B.P., DDS, DDPH *Toronto*

Instructors

Craig, R.A., CertPHI *Manitoba*

Donaldson, Elizabeth F., DipISW *Toronto*

Jeffs, J.I., MD, DPH *Toronto*

Leake, J.L., DDS, DDPH *Toronto*

Mumby, Dorothy M., BScN *UWO;* MA *Columbia*

DIVISION OF FAMILY MEDICINE

Professor

McWhinney, I.R., MB, BCh, MD *Cambridge;* MRCP *London.* Chairman of the Division

Associate Professors

Hunter, A.T., BA, MD *UWO;* CCFP, FCFP

Lamont, C.T., MD *UWO*

Pratt, G.E., BA, MD *UWO*

Assistant Professors

Hennen, B.K., MD *Queen's*

McKim, J.S., MD, MSc *UWO;* DCH(Eng), CRCP(C)

Stein, P.B., MBBS *London*

Clinical Assistant Professor

Butson, F.J., MD *UWO*

Lecturers

Brennan, M., LRCP&SI

Vinger, I., BA, MDCM *McGill*

Weston, W.W., MD *Toronto;* CCFP

Clinical Lecturers

Annett, R.K., MD *UWO*

Burns, S.J., BSc *McGill;* MD *UWO*

Collyer, J.E., BA, MD *UWO*

Dillon, M.T., BA, MD *UWO*

Edwards, K.N., MD *Manitoba;* FRAI

Elliott, D.W., PhmB *Toronto;* MD *UWO*

Ellyatt, W.G., MD *UWO*

Gambrill, R.B., MD *UWO*

Gay, K.E., MD *Ottawa;* CRCP(C)

Gillick, R.H., MD *UWO*

Johnston, K.A., BA, MD *UWO*

Keidan, H., MB, ChB *Liverpool*

McCue, D., MBChB *Glasgow*

Marchuk, P., MD *UWO*

Merritt, J.O., MD *UWO*

Naftolin, L.Z., BA, MD *UWO*

Orchard, J.W., MD *UWO*

Patten, J.F., MD *UWO*

Pennington, P.W., BSc *Windsor;* MD *Toronto*

Ragula, B.D., MD *Louvain*

Redden, C.S.

Robinson, H.C., MD *UWO*

Sangster, J.F., MD *UWO;* CCFP

Suffel, Priscilla S., RN *Peking;* MD *West China*

Theoret, J.J., BSA *Toronto;* MD *UWO*

Wilson, R.C., MBChB *Aberdeen*

Honorary Lecturers

Clarke, G.L., BSc, MD *UWO;* MRCOG, CRCS(C), FACS

Fletcher, H.G., MD *UWO*

Instructors

Bernstein, P., MDCM *Queen's,* CCFP

Brady, P., MD *Toronto,* FCFP

Buchan, Jane, RN, BScN *McMaster*

Butler, W.E., BSc, MD *UWO*

Ferrier, T.A., BS *Muhlenberg;* MD *Penna;* MPH *Pittsburgh*

Gibson, G., MD *UWO*

Hiscock, R.J., BA, MD *UWO*

Lamb, J.I. Linda, BA, BSN *British Columbia*

Leeson, J.I., MD *UWO;* CCFP

McGhie, T.G., MD *UWO*

McKim, J.C., MD *UWO*

Moulton, R., MA, MB, BChir *Cantab;* D ObstRCOG

Newell, J.P., BA, MD *UWO*

O'Neil, Theresa F., RN, BSc *St. Thomas, New Brunswick*

Oosterhuis, J.W., MD *Groningen*

Piper, G.A., MD *Toronto*

Southwood, K.J., MD *Toronto*

Thompson, G.H., MD *UWO*

DEPARTMENT OF THE HISTORY OF MEDICINE AND SCIENCE

Associate Professor

Richardson, R.A., BA *Sir George Williams;* MA *McGill;* PhD *Wisconsin.* Acting Chairman of the Department

Lecturer

Plotkin, H.N., BA *Michigan;* PhD *Johns Hopkins*

Honorary Lecturers

Balderston, W., BA, PhD *Cornell*

Lewis, J.A., MD *UWO;* FRCP(C), FACP

Pendrill, G.R., BA, MA *Cantab;* DipLib *London;* FLA

DEPARTMENT OF MEDICINE

The Richard Ivey Professor of Medicine

Gunton, R.W., MD *UWO;* DPhil *Oxon;* FRCP(C), FACP. Head of the Department

Professors

Brien, F.S., BA, MB *Toronto;* FRCP *London;* FRCP(C), FACP

Barnett, H.J.M., MD *Toronto;* FRCP(C)

Hession, B.L., MD, MSc *UWO;* FRCP(C)

Lewis, J.A., MD *UWO;* FRCP(C), FACP

Manning, G.W., MA, MD, PhD *Toronto;* FRCP(C)

Associate Professors

Bocking, D., MD *UWO;* FRCP(C), FACP

Bondy, D.C., MD *UWO;* FRCP(C)

Cameron, W.M., MD *UWO;* FRCP(C)

Clarke, O., BA, MA, MB, BCh, MD *Cantab;* MRCS, LRCP *London;* MRCP *London*

Hudson, A.J., MD, BSc *Toronto;* FRCP(C)

Lefcoe, N.M., BSc *McGill;* MD *Vanderbilt;* FRCP(C)

Toogood, J.H., MD *Toronto;* DiplIntMed *McGill;* FRCP(C)

Watson, W.C., MB, ChB, MD, PhD *Glasgow;* MRCP *London;* FRCPG

Clinical Associate Professors

Alway, A.E., MD, MSc *UWO;* FRCP(C)

Barton, W.B., MD *UWO;* FRCP(C), DiplIntMed *McGill*

England, N.J., MBE, MD *UWO;* FRCP(C)

Fisher, C.F.S., MD, MSc *UWO;* CRCP(C)

Meltzer, D.B., BSc *Manitoba;* MD *UWO;* FRCP(C)

Pace, W.E., MD, MSc *UWO;* FRCP(C)

Rechnitzer, P.A., BA, MD *UWO;* FRCP(C), MRCP (Edin)

Sears, G.A., MD *UWO;* FRCP(C)

Smith, D.R., MD *UWO;* FRCP(C)

Walker, J.B., MD *UWO;* FRCP(C), MRCP *London*

Assistant Professors

Ahuja, S.P., MB BS *Nagpur, India;* DTM&H(Eng), FRCP(C)

Barr, R.M., MD *UWO;* FRCP(C)

Borda, I.T., MD *Budapest;* FRCP(C)

Chodirker, W.B., BSc(Med), MD *Manitoba;* FRCP(C)

Harth, M., MD *Toronto;* FRCP(C)

Kertesz, A., MDCM *Queen's;* BSc(Med) *Toronto;* FRCP(C)

Kimber, R.W., BA *McMaster;* MD *UWO;* FRCP(C)

Linton, A.L., MB, ChB *Edin;* FRCP *Glasgow;* FRCP *Edin*

Loudon, J.L., MD *Toronto;* FRCP(C)

McCourtie, D.R., MD *UWO;* FRCP(C)

McDonald, J.W.D., MD, PhD *UWO;* FRCP(C)

Plunkett, E.R., MD, PhD *UWO*

Redinger, R.N., BA, MD *UWO;* FRCP(C)

Roach, Margot R., BSc *New Brunswick;* MD, CM *McGill;* PhD *UWO;* FRCP(C)

Rodger, N.W., BSc, MD, BSc(Med) *Manitoba;* FRCP(C)

Shaw, D.B., BSc *St.F.X.;* MDCM, PhD *McGill*

Stuart, R.K., MD *UWO;* FRCP(C)

Thompson, J.M., BA *Amherst;* MD *UWO;* FRCP(C)

Wolfe, B.M., BA *Saskatchewan;* MA, BM, BCh *Oxon;* MSc *McGill;* FRCP(C)

Wood, T.E., BA, MD *UWO;* MSc *McGill;* FRCP(C)

Clinical Assistant Professors

Aikenhead, D.E., MD *Manitoba;* MRCP *London;* FRCP(C)

Albers, H.J., MD *Dusseldorf;* CRCP(C)

Chertkow, G.C., BA *Saskatchewan;* MD *Toronto;* FRCP(C)

Coulter, W.K., MD *UWO;* FRCP(C)

McInnis, W.P., BA, MD *UWO*

Pickard, H.A., MD *UWO;* FRCP(C)

Price, I.C., MDCM *Dalhousie;* CRCP(C)

White, D.F., MD *UWO;* FRCP(C)

Lecturer

Goddard, M.D., MB ChB *Dunedin New Zealand,* FRCP(C)

Clinical Lecturers

Cholod, E.J., MD *Alberta;* CRCP(C)

Douglas, J.H.C., BA, MD *UWO*

Hagerman, E.S., MD, CM *Queen's;* FRCP(C)

Honorary Lecturers

Bartram, E.A., MD *UWO*

Goddard, E.S., MD *UWO;* DPsych *Toronto;* CRCP(C)

Hobbs, G.E., BA, MD *Toronto;* MPH *Michigan;* FRCP(C)

Kennedy, F.S., BA, MD *UWO;* MS in Medicine *Minnesota;* FACP

Langland, K.G., BA *Saskatchewan;* MSc *UWO*

Middleton, W.W., MD *UWO;* FCCP

Neufeld, A.H., BSc, MSc, PhD *Manitoba;* MDCM *McGill;* FCIC

Parker, J.M., MD *Manitoba;* DPH, PhD *Toronto*

Robinson, J.B., MD *Toronto*

Sexton, G.B., MDCM *Queen's*

Warwick, O.H., BA *Mount Allison;* MDCM *McGill;* MA *Oxon;* FRCP *London;* FRCP(C), FACP, LLD *Mount Allison*

Watt, A.J., MD *Toronto;* FCCP, CRCP(C)

Webling, D.D., BSc, MB, BS, PhD *Adelaide;* DTM&H *Sydney*

Wilcox, L.D., MD *UWO;* FRCP(C)

Instructors

Stiller, C.R., MD *Sask*

Tevaarwerk, G.J., MD *UWO*

DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY

Professors

Armstrong, D.T., BSA *Toronto;* MS, PhD *Cornell*

Plunkett, E.R., MD, PhD *UWO.* Chairman of the Department

Walters, J.H., BA, MD *UWO;* MRCOG, FRCS(C)

Clinical Professor

Allen, H.H., MD *UWO;* FRCS(C)

Associate Professor

Harding, P.G.R., MD, MSc *UWO;* FRCS(C)

Clinical Associate Professor

Collins, J.A., MD *UWO;* FRCS(C)

Assistant Professors

Gammal, E.B., MB BCh *Cairo;* PhD *UWO*

Raud, H.R., BSc, MSc, PhD *McGill*

Yuzpe, A.A., BSc *Assumption of Windsor;* MD, MSc *UWO;* FRCS(C)

Clinical Assistant Professors

Copeland, G.G., BA, MD *UWO;* CRCS(C)

Girvan, G.R., MDCM *McGill;* CRCS(C)

Manners, D.O., BA, MD *UWO;* FRCS(C), FACOG, FACS

Prueter, G.W., MD, BSc(Med) *Toronto;* MRCOG, FRCS(C)

Wearing, M.P., MD, MSc *UWO;* CRCS(C)

Clinical Lecturers

Robinson, M.L., BA *McMaster;* MD *UWO;* MRCOG, FRCS(C), FACS, FACOG

Tew, W.L., BA, MD *UWO;* FRCS(C), FACS

Wright, V.C., MD *UWO;* FRCS(C)

Honorary Lecturer

Johnson, F.L., MD *Toronto;* FRCS(C)

DEPARTMENT OF OPHTHALMOLOGY

Clinical Professor

Dyson, C., MD *UWO;* DOph *McGill;* CRCS(C). Head of the Department

Clinical Associate Professors

Ballantyne, J.F., MD *Toronto;* FRCS(C)

Nicholls, J.V.V., BA, MDCM, MSc *McGill;* FACS, FRCS(C)

Thompson, C.A., BA *UWO;* MD, CM *McGill;* CRCS(C)

Clinical Assistant Professor

McFarlane, D.C., MD *UWO;* CRCS(C)

Clinical Lecturers

Burt, W.L., MD *UWO;* FRCS(C)

Collyer, R.T., BA, MD *UWO;* FRCS(C)

Mills, D.W., BA, BSc *Carlton;* MD *UWO;* MSc(Med) *Queen's;* FRCS(C)

Oliver, G.L., MD, MSc *UWO;* FRCS(C)

Honorary Lecturer

Hollenberg, M.J., BSc(Med), MD *Manitoba;* MSc, PhD *Wayne State*

DEPARTMENT OF OTOLARYNGOLOGY

Professor

Rounthwaite, F.J., BSc, MDCM *McGill;* FRCS(C), FACS. Head of the Department

Clinical Professor

Greenway, R.E., MD *UWO;* FRCS(C)

Clinical Associate Professors

Babb, J.W., BA, MD *UWO;* CRCS(C)

Burnett, W.H., MD *Toronto;* CRCS(C)

Assistant Professor

Ruby, R.R., BA, MD *UWO;* FRCS(C)

Clinical Assistant Professor

Leboldus, G.M., MD *UWO;* FRCS(C)

Clinical Lecturers

MacRae, E.E., MD *Dalhousie;* CRCS(C)

Smith, D.M., BA, MD *UWO;* CRCS(C)

Wong, G.L., BSc, MD *Alberta;* CRCS(C)

Honorary Lecturer

Gettas, P.G., MD *UWO;* CRCS(C)

Department of Paediatrics

Professors

Rathbun, J.C., MD *Toronto;* FRCP(C), FAAP. Head of the Department

Valentine, G.H., MB, ChB *Bristol;* MRCS(Eng), MRCP(London), DCH(Eng), FAAP, FRCP(C)

Associate Professors

de Veber, L.L., MD *Toronto;* FRCP(C)

Hinton, G.G., BSc, MDCM *McGill;* DCH(Eng), FRCP(C)

Jaco, N.T., MA, BSc, BM, BCh *Oxon;* MRCP, CRCP(C), DCH(Eng)

Clinical Associate Professors

Denison, A.G., MD *UWO;* DCH(Eng), FAAP, CRCP(C)

Vincent, J.E., MDCM *Queen's;* BSc *McGill;* FAAP, CRCP(C)

Assistant Professors

Ecclestone, E.R., MD *UWO;* FRCP(C)

Li, M.D., MB *National Taiwan;* FRCP(C)

Sutton, Marilyn D., MD *UWO;* FRCP(C)

Young, J.A., MBChB *Glasgow;* MRCP, RCPS *Glasgow;* MRCP(London)

Clinical Assistant Professors

Cram, D.M., MD, MSc *UWO;* CRCP(C)

McKim, J.S., MD, MSc, DCH(Eng), CRCP(C)

Nicholson, J.R., BA, MD *UWO;* FAAP, CRCP(C)

Rajic, D.S., MD *Graz;* CRCP(C)

Riese, R.R., BA, MA, PhD *UWO*

Whelen, W.S., BSc, MDCM *McGill;* CRCP(C)

Lecturers

Albarracin, Aurora B., Associate in Arts and MD *Santo Tomas, Philippines*

Amacher, A.L., MD *UWO;* FRCS(C)

Clinical Lecturers

Dubois, J.R., BSc, MD *Michigan;* CRCP(C)

Li, K.T., MB *Taiwan,* CRCP(C)

Pozsonyi, J., MD *Pecs, Hungary*

Trout, Ellen E., MD *UWO;* CRCP(C)

Uilenberg, Catharina, MD *Rijks Holland;* CRCP(C)

Honorary Lecturers

Campbell, Margaret K.P., MD *Toronto;* CRCP(C)

Feasby, W.H., DDS, DipPaed *Toronto;* FRCD(C)

Haust, M. Daria, MD *Heidelberg;* MSc *Queen's* CRCP(C)

McAlpine, K.L., MD *UWO;* CRCP(C)

Instructor

Robinson, Halina M.C., Chem(Eng) *Sweden*

DEPARTMENT OF PATHOLOGICAL CHEMISTRY

Professors

Barton, W.B., MD *UWO;* FRCP(C), DiplIntMed *McGill*

Brownstone, Y.S., BScA, MSc *Manitoba;* PhD *McGill*

Neufeld, A.H., BSc, MSc, PhD *Manitoba;* MDCM *McGill;* FCIC. Head of the Department

Associate Professors

de Veber, L.L., MD *Toronto;* FRCP(C)

Tustanoff, E.R., BA *Assumption;* MS *Detroit;* PhD *UWO*

Zaharia, W., BSc *Manitoba;* PhD *McGill*

Clinical Associate Professors

Binns Smith, M., MB, ChB, PhD *Edinburgh;* CRCP(C)

Haust, H.L., MD *Heidelberg;* MSc(Med), PhD *Queen's*

Meltzer, D.B., BSc *Manitoba;* MD *UWO;* FRCP(C)

Assistant Professors

Kimber, R.W., BA *McMaster;* MD *UWO;* FRCP(C)

Linton, A.L., MB, ChB *Edin;* FRCP *Glasgow;* FRCP *Edin*

McDonald, J.W.D., MD, PhD *UWO;* FRCP(C)

Raud, H.R., BSc, MSc, PhD *McGill*

Lecturer

Jones, D.S., BA *Albion College;* MS *Michigan State;* PhD *UWO*

DEPARTMENT OF PATHOLOGY

Professors

Haust, M. Daria, MD *Heidelberg;* MSc *Queen's* CRCP(C)

Paterson, J.C., OBE, MD, BSc(Med) *Toronto*

Wallace, A.C., BA, MD *UWO;* FACP, CRCP(C). Head of the Department

Clinical Professors

Mills, D.M., BA, MD *UWO;* CRCP(C)

Smout, M.S., MD *UWO;* MCPath, FCAP

Associate Professors

Frei, J.V., MDCM *Queen's;* MSc, PhD *McGill;* CRCP(C)

Gardner, D.G., DDS *Toronto;* MSD *Indiana.* Chairman, Division of Oral Pathology

Warren, B.A., BSc(Med), MBBS *Sydney;* DPhil, MA *Oxford*

Clinical Associate Professor

Vigneault, M., BA *Sudbury;* MD *Laval;* FRCP(C)

Assistant Professors

Jones, D.S., BA *Albion College;* MS *Michigan State;* PhD *UWO*

Lewis, F.N., BA, MD *UWO;* MCPath, CRCP(C)

Sapp, J.P., DDS *Dalhousie;* MS *Michigan*

Clinical Assistant Professors

Abdelnour, G.M., MB, ChB *Alexandria, Egypt;* CRCP(C)

Ball, M.J., MD *Toronto;* CRCP(C)

Davies, Eleanor M., MD *Toronto;* CRCP(C)

Enriquez, A.A., AA *San Carlos;* MD *Santo Tomas;* CRCP(C)

Ramzy-Saeed, I., MB, BCh, DMScPath, MDPath *Cairo;* FRCP(C)

Slinger, R.P., BA, MD *Toronto;* MCPath, CRCP(C)

Turnbull, D.I., BSc, MDCM *McGill*

Clinical Lecturer

Gursel, S., MD *Ankara;* MSc *Ohio State*

Instructors

Adilman, H.B., BA *Saskatchewan;* MD *Alberta;* CRCP(C)

Bell, J.H., DDS *Toronto*

Dietrich, M., MD *UWO;* CRCP(C)

Frishette, W.A., MD *UWO;* CRCP(C)

DEPARTMENT OF PHARMACOLOGY

Professors

Gowdey, C.W., BA, MSc *UWO;* DPhil *Oxon.* Head of the Department

Parker, J.M., MD *Manitoba;* DPH, PhD *Toronto*

Associate Professors

Colhoun, E.H., BSA *Toronto;* PhD *Cantab*

Hamilton, J.T., BSc, PhD *Edinburgh*

Philp, R.B., DVM *Toronto;* PhD *UWO*

Assistant Professors

Hersey, M.L.W., BSc *McGill;* MD, PhD *UWO;* CRCP(C), FACA

Hirst, M., BSc, PhD *Liverpool;* PhD *UWO*

Honorary 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)

Instructors

Dinel, B., BScPhm *Toronto;* MSc *Ohio State*

Hansford, D.F., PhmB *Toronto*

White, D.F., MD *UWO;* FRCP(C)

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

Professor

Cameron, M.G.P., MD *Toronto;* FRCP(C). Head of the Department

Assistant Professors

Durnin, R.A., MD, CM *Queen's;* FRCP(C)

Stewart, Olive J., BA, MD *UWO;* CRCP(C)

Clinical Lecturer

Berkeley, J., MBChB, DPH, MD *Glasgow;* CRCP(C)

Honorary Lecturer

Robinson, J.B.C., MD, MSc *UWO*

PROGRAM IN MEDICAL REHABILITATION

PROGRAM IN PHYSICAL THERAPY

Associate Professor

Morgan, Sally, BA *UWO;* DipP *Toronto;* MCPA, Teacher's Diploma in Physiotherapy.

Lecturers

Edwardson, Barbara M., BPT *Manitoba,* DipTP *Manitoba,* MCPA, MCSP

Egan, D.A., MCSP, MCPA, Teacher's Diploma in Physiotherapy

Grantham, P.W., MCSP, MCPA, DipTP *Toronto*

Instructors

Cameron, Sheila E., BA(PT) *Manitoba;* MCSP, MCPA

Gilroy, Jean F., DipTP *Toronto;* MCPA

MacRae, Agnes G., MCSP, MCPA

Valentine, Pamela J., MCSP, MCPA

PROGRAM IN COMMUNICATION DISORDERS

Assistant Professors

Kroll, A., BSc *McGill;* MS *Brooklyn;* PhD *Purdue*

Stouffer, J.L., BS *Suny College at Buffalo;* MS, PhD *Penn State*

PROGRAM IN OCCUPATIONAL THERAPY

Assistant Professor

Trider, Margaret F., DipOT *Toronto;* OTReg, OTR

DEPARTMENT OF PHYSIOLOGY

Professors

Armstrong, D.T., BSA *Toronto;* MS, PhD *Cornell*

Mogenson, G.J., BA, MA *Saskatchewan;* PhD *McGill.* Acting Chairman of the Department

Stevenson, J.A.F., BA, MA MDCM *McGill;* FRSC

Associate Professors

Bondy, D.C., MD *UWO;* FRCP(C)

Calaresu, F R., BA *Pavia;* MD *Milan;* PhD *Alberta*

Critz, J.B., BS in Ed, MA, PhD *Missouri*

Dellow, P.G., BDS, MB, BS *Adelaide;* FACDS

Harding, P.G.R., MD, MSc *UWO;* FRCS(C)

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, PhD *McGill*

Associate Professor (Electrical Engineering)

Chess, G.F.H., BASc *Toronto;* MEng *McGill*

Assistant Professors

Cunningham, D.A., BA *UWO;* MSc *Alberta;* PhD *Michigan*

Girvin, J.P., MD *UWO;* PhD *McGill;* FRCS(C)

O'Hea, E.K., BAgrSc, MAgrSc *Dublin;* PhD *Illinois*

Stewart, D.J., BSc *British Columbia;* PhD *California, Santa Barbara*

Ziegler, W.H., MD *British Columbia;* MSc *Drexel Institute of Technology*

Lecturers (sessional)

Reese, L., MDCM *Queen's;* FRCS(C), FACS

Sellery, G.R., MD *Toronto;* DA *England;* DA *Toronto;* FRCP(C)

Honorary Lecturers

Hart, J.S., BA, MA, PhD *Toronto;* FRSC

Hinton, G.G., BSc, MDCM *McGill;* DCH, FRCP(C)

Manning, G.W., MA, MD, PhD *Toronto;* FRCP(C)

Rounthwaite, F.J., BSc, MDCM *McGill;* FRCS(C), FACS

Steele, J.E., BSc *Dalhousie;* MSc *UWO;* PhD *Saskatchewan*

Instructor

Walker, Esme H., BA, MA *Toronto*

DEPARTMENT OF PSYCHIATRY

Professor

Hobbs, G.E., BA, MD *Toronto;* MPH *Michigan;* FRCP(C), FAPA. Head of the Department

Associate Professors

Keil, W.E., MD *UWO;* CRCP(C)

Tillmann, W.A., MD, MSc *UWO;* CRCP(C)

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

Jurjans, V., MD *Tuebingen;* CRCP(C)

McLeish, J.C., MD *UWO;* CRCP(C)

Max, P., BA, MD *UWO;* CRCP(C)

Clinical Assistant Professors

Boyce, R.M., MD *UWO;* DPsych *Toronto;* CRCP(C)

Carscallen, H.B., MD *UWO;* DPsych *Toronto;* CRCP(C)

Galbraith, D.A., MD *UWO:* CRCP(C)

Johnson, F.G., MB, BS *London;* LRCP, MRCS, CRCP(C)

McGregor, K.M., BA, MD *UWO;* DPsych *Toronto;* CRCP(C)

Lecturers

Gort, G.H., MD *Alberta;* CRCP(C)

Stewart, Olive J., BA, MD *UWO;* CRCP(C)

Thurlow, H.J.A., BA, MA, MD *UWO*

Clinical Lecturers

Babiak, W., MD *Kiel;* DPsych *Toronto*

Deinum, E. Jeanne, MD *UWO;* DPsych *Toronto;* FRCP(C)

Dubois, J.R., BSc, MD *Michigan;* CRCP(C)

Galbraith, H.C., MD *UWO;* CRCP(C)

Jenkins, G.E., MD *UWO;* DPsych *Toronto;* CRCP(C)

Lapp, C.A., BA, MDCM *Queen's;* CRCP(C)

Summerby, J.H., BSc, MDCM *McGill;* CRCP(C)

Honorary Lecturer

Goddard, E.S., MD *UWO;* DPsych *Toronto;* CRCP(C)

Instructors

Andrews, W.N., MB, ChB *New Zealand;* CRCP(C)

Corrin, R.C., MD *UWO;* DPsych *Toronto;* CRCP(C)

Dingus, R.L., BA, MA *Cincinnati*

Dingus, Ruth Marie Adams, AB *Wellesley College;* MA *Pittsburgh*

Dolan, J., MBChB *Glasgow;* DPH(Eng), DPM(Eng), MRCP *Glasgow;* FRCP(C)

Hoover, M.P., MD *Toronto*

Johnson, Diana M.M., BA, MD *UWO;* CRCP(C)

Kalb, S., MD *Manitoba;* DPsych *Toronto;* CRCP(C)

Kaufman, J.J., BA *UWO;* MD *Ottawa;* CRCP(C)

Lovegrove, T.D., BA, MD, MSc *UWO*

McKenzie, F.A., BA *Iowa;* MD *UWO;* CRCP(C)

McKim, Mary E., MD *Toronto,* CRCP(C)

Mountain, H.E., MD *UWO;* CRCP(C)

Palmer, R.B., MD *UWO;* CRCP(C)

Riese, R.R., BA, MA, PhD *UWO*

Tobin, W.G., MD *Toronto*

DEPARTMENT OF DIAGNOSTIC RADIOLOGY

Professor

Carey, L.S., MD, CM, MSc(Med) *Queen's;* MS *Minnesota.* Chairman of the Department

Clinical Associate Professors

Allcock, J.M., MRCS, LRCP(Eng), MB BS *London;* DMRD(Eng), FFR

Hill, M.B., MDCM *Queen's,* CRCP(C)

Johnston, E.E., MDCM, DMR *Queen's;* CRCP(C)

Wilkins, W.W.J., MDCM *Queen's;* DMR *Toronto;* FRCP(C)

Clinical Assistant Professors

Agnos, J.W., MD *UWO;* DMR *Toronto;* CRCP(C)

MacDonald, A.C., MD *UWO;* FRCP(C)

Mullen, L.H., MD *Toronto;* FRCP(C)

Nicol, D.A., BA *Saskatchewan;* MD, DMR *Toronto;* CRCP(C)

Rajic, D.S., MD *Graz;* CRCP(C)

Clinical Lecturers

Coates, R.K., BA, MD *UWO;* FRCP(C)

Edgar, H.W., MD *UWO;* DMR *McGill;* CRCP(C)

Hamilton, G., MD *UWO;* FRCP(C)

Reid-Smith, E.A.M., BA, MB, BCh *Dublin;* DMRD *London;* CRCP(C)

Honorary Lecturer

Hauch, P.P., MD *UWO;* DMRD *London;* CRCP(C)

Instructors

Black, J.H.D., MB, BCh *Dublin;* MRCPI, FRCP(C)

Brown, T.C., MD *UWO;* CRCP(C)

Greenhow, P., MD *Toronto;* CRCP(C)

Harwood, R.A., MD *UWO;* CRCP(C)

Linsdell, F.J., BA, MD *UWO;* CRCP(C)

DEPARTMENT OF THERAPEUTIC RADIOLOGY

Clinical Professor

Watson, T.A., MB, ChB *New Zealand;* DMR *London;* MD *Saskatchewan;* FACR, FRCP(C). Head of the Department

Associate Professors

Heagy, 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;* DMRT(Eng), CRCP(C)

Clinical Assistant Professors

Banerjee, P., MBBS *Calcutta;* DMRT(Eng), FFR(Eng)

Fetterly, J.C.M., MD, CM *Queen's;* DMRT, CRCP(C)

Lecturer

Sutherland, R.M., BSc *Acadia;* PhD *Rochester*

Honorary Lecturers

Barton, W.B., MD *UWO;* FRCP(C), DiplIntMed *McGill*

McCredie, J.A., MB, BCH, BAO *Belfast;* FRSC(Edin), FRCS(Eng), MCh *Belfast;* FRCS(C), FACS

Plunkett, E.R., MD, PhD *UWO*

Reese, L., MDCM *Queen's;* FRCS(C), FACS

Warwick, O.H., BA *Mount Allison;* MDCM *McGill;* MA *Oxon;* FRCP *London;* FRCP(C), FACP, LLD *Mount Allison*

White, D.F., MD *UWO;* FRCP(C)

Clinical Lecturer

Dawson, D.J., BASc, MA, PhD *Toronto*

DEPARTMENT OF SURGERY

Professors

Carroll, S.E., BA, MD *UWO;* FRCS(C), FACC, FACS, FACCP

Drake, C.G., MD, MSc *UWO;* FRCS(C), MS *Toronto*

McLachlin, A.D., MD, MSc *UWO;* DPhil *Oxon;* MS *Toronto;* FRCS(C), FRCS(Eng), FACS. Head of the Department

Clinical Professor

Johnston, D.W.B., BA, MD *UWO;* FACS, FRCS(C)

Associate Professor

McCredie, J.A., MB, BCH, BAO, MCh *Belfast;* FRCS(Edin), FRCS(Eng), FRCS(C), FACS

Clinical Associate Professor

McLarty, T.D., BA, MD *UWO;* FRCS(C)

Assistant Professors

Girvin, J.P., MD *UWO;* PhD *McGill;* FRCS(C)

Passi, R.B., MD *UWO;* FRCS(C), FACS

Clinical Assistant Professors

Barr, H.W.K., BSc(Med) *Toronto;* MD *UWO;* FRCS(C)

Jamieson, W.G., BA *Eastern Michigan;* MD *UWO;* FRCS(C), FRCS(Eng)

McKenzie, D.A., MD *UWO;* MSc *Minnesota;* FRCS(C), FACS

Clinical Lecturer

Meads, G.E., BA *Michigan;* MD *UWO;* FRCS(C)

Instructors

McLachlin, J.A., MD *UWO;* FRCS(C); FACS, MClSc

Marshall, D.G., MD *UWO;* FRCS(C), FAAP

Walker, J.H., MD, MSc *UWO;* FRCS(C), FACS

DIVISION OF CARDIOVASCULAR AND THORACIC SURGERY

Clinical Professor

Coles, J.C.G., BA, MD, MSc *UWO;* FRCS(C). Chairman of the Division

Clinical Lecturer

Gergely, N.F., MD *Budapest;* FRCS(C)

DIVISION OF NEUROSURGERY

See Department of Clinical Neurological Sciences

DIVISION OF ORTHOPAEDIC SURGERY

Clinical Professor

Kennedy, J.C., MD *UWO;* FRCS(C). Chairman of the Division

Clinical Assistant Professor

Cameron, H.S., MD *UWO;* FRCS(C), FACS

Clinical Lecturers

Bailey, W.H., BA, MD *UWO;* FRCS(C)

Fowler, P.J., BA, MD *UWO;* FRCS(C)

Grainger, R.W., MD *UWO;* FRCS(C)

Instructor

Ollerhead, W.W., BA, MD *UWO;* MChOrth *Liverpool;* CRCS(C)

DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

Clinical Professor

McFarlane, R.M., MD, MSc *UWO;* FRCS(C), FACS. Chairman of the Division

Clinical Lecturer

Stavraky, W.K., MD *UWO;* FRCS(C)

DIVISION OF UROLOGY

Professor

McAninch, L.N., MD *UWO;* FRCS(C), FACS. Chairman of the Division

Clinical Assistant Professors

Reese, L., MDCM *Queen's;* FRCS(C), FACS

Sales, J.L., MD *UWO;* FRCS(C)

Wyatt, J.K., MD *UWO;* FRCS(C)

Instructors

Busby, S.M., MD *UWO;* CRCS(C)

Downham, D.W., BA, BChir, MB *Cantab;* FRCS(Eng), CRCS(C)

SPECIAL LECTURERS

Special Lecturer in Legal Medicine

Krever, H., QC, BA, LLB *Toronto*

Special Lecturer in Medical Ethics

Robinson, J.B.C., MD, MSc *UWO*

Faculty of Medicine
Program in Communication Disorders

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COMMUNICATION DISORDERS

General Information

The Program in Communication Disorders is a three year Program which follows one year of general University training. The aim of the Program is to provide students with a general education in the natural, medical, and behavioral sciences while at the same time preparing the student for a career in Speech Pathology and Audiology through professional courses in these area. Students graduating from this Program are trained to provide diagnostic and therapeutic services for individuals manifesting disorders of speech and/or auditory function. Graduates of the Program are encouraged to seek post graduate training to further develop their therapeutic and remedial skills.

Admission Requirements

Completion of the First Year University studies, at The University of Western Ontario with standing in Psychology 20, Sociology 20 and at least two of Biology 22, Chemistry 20 or Physics 20. Applicants with equivalent standing from other recognized Universities will also be considered for admission to the program.

Admission will be based on:

(a) first year achievement – Minimum "C" standing
(b) achievement in required courses – Minimum, overall "C" standing.

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.

Final date for appliction to the Program in Communication Disorders: May 31.

Fees and Other Expenses

Refer to the General Information section of this Calendar.

Courses of Study

SECOND YEAR

Physics 33. The physics of Music and Sound.

Psychology 56. Child Psychology.

Anatomy. Basic human gross anatomy with special reference to the functional anatomy of the speech and hearing mechanism.

Neuroanatomy. The anatomy of the nervous system, including special lectures in the neuroanatomy of the speech and hearing mechanism.

Survey of Speech Disorders. Development of speech and language. Introduction to the etiology, symptomatology, and nature of defective speech.

Introductory Audiology. Basic considerations of hearing and hearing impairment. Discussion of causes, types and measurement of hearing loss.

Elective

Approximate number of hours in Second Year: 20 per week

THIRD YEAR

Sociology 46. Medical Sociology and Public Health.

Psychology 59. Exceptional Children.

Advanced Audiology. Advanced pure tone 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.

Remedial Principles in Speech Disorders. Principal methods used for rehabilitation of individuals manifesting disorders of articulation, voice, language, and rhythm. Students will be required to observe and participate in the therapeutic process at various clinics.

Audiology. Methods in Auditory Training and Speech Reading. Principle and techniques of remedial procedures for hearing handicapped; examination of clinical practices; evaluation of recent research in this field.

Audiology. Interpretations of Clinical Tests. Supervised clinical practice in pure tone air and bone conduction audiometry. Audiogram interpretations and rehabilitative recommendations considered.

Elective

Practicum*

Approximate number of hours in Third Year: 19 hours per week.

***Practicum.** During the summer months after the third and fourth years, students in Communication Disorders will be required to undergo a 6 – 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

Psychology 79. Abnormal Psychology.

Seminar in Speech Pathology. A consideration of physiogenic and psychogenic disorders of speech with reference to diagnostic and rehabilitative procedures.

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.

Medical Problems Related to Communication Disorders. The relationship between the speech and hearing clinician and the physician and dentist. Facilities available and referral procedures will be discussed.

Diagnostic Methods in Speech Disorders. Principal methods of diagnosis and testing, application of diagnostic tools; interviewing and counselling procedures.

Speech Science and Phonetics. Descriptive and articulatory phonetics including broad transcription. The physical attributes of speech and their measurement.

Two electives chosen from the following:

Research Problems in Speech Pathology. A review of current literature and research in Speech Pathology.

Individual Study in Special Areas. Directed study of special problems in Speech Pathology and Audiology.

Psychoacoustics. Lectures and discussion on advanced topics and current research in auditory sensation and perception.
(Consent of instructor)

Industrial Audiology, Hearing Conservation, and Noise Control. Environmental noise: its characteristics, effects on hearing and control, associated topics.
(Consent of instructor)

Practicum*

Approximate number of hours in Fourth Year:
20 hours per week.

***Practicum.** During the summer months after the third and fourth years, students in Communication Disorders will be required to undergo a 6 – 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

Within the three professional years of the Program, a student qualifies for advancement to each subsequent year if he obtains a grade average of at *least 60% and a passing grade in every course.* (One supplemental examination is permitted in professional courses in each academic year).

A student who obtains an average grade of 80% or better in any year is considered to have passed that year with honors. A student who passes with honors in each year in the Program in Communication Disorders will be graduated *cum laude.*

A student will be considered to have failed a complete year if his general average (in all courses of that year) falls below 60%; or if he failed in more than one professional course.

A student may be given permission to write a supplemental examination in a professional course at the discretion of the instructor. (Note that supplemental examinations are not offered by the Faculties of Arts, Science or Social Science.)

A student who has failed to complete a year may be permitted by the Program in Communication Disorders to repeat that year if a vacancy is available. A student may repeat only one year of the Program. 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 Speech Pathologists and Audiologists be licensed. Therapists may work in any other Province without being registered.

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
Box 1314
Winnipeg, Manitoba

The American Speech and Hearing Association
9030 Old Georgetown Road
Washington, D.C. 20014
U.S.A.

Secretary
The College of Speech Therapists
47 St. John's Wood High St.
London, N.W. 8
England

International Association of Logopedics and Phoniatrics
Svejagervej 52, Hellerup
Copenhagen, Denmark

MEMBERS OF THE FACULTY OF THE PROGRAM IN COMMUNICATION DISORDERS

Assistant Professors

Kroll, Allan, BSc *McGill;* MSc *Brooklyn,* PhD *Purdue*

Stouffer, James L., BSc *Buffalo State;* MSc, PhD *Pennsylvania State*

Faculty of Medicine
Program in Occupational Therapy

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PROGRAM IN OCCUPATIONAL THERAPY

The objective of the four-year 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.

Admission Requirements

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 1971-72 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.

The applicant must be of sound physical and mental health.

An interview is given by a member 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 with Advanced Standing

Students with credits in required courses from an approved University may apply for admission with advanced standing.

Students who are currently registered in First Year General Program at the University of Western Ontario, or in a similar program at another approved University, and who are taking the required courses in Biology, Psychology and Sociology, may apply for admission into Second Year Occupational Therapy.

Applications for the Program should be submitted to the Director of Admissions by March 31.

Fees

Each Year:

Payable at registration $517.50

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.

Program of Study

FIRST YEAR

Biology 21 or 22
Psychology 20
Sociology 20
Occupational Therapy A
Elective

SECOND YEAR

Psychology 56
Psychology 62
Sociology 40
Anatomy 214
Neuroanatomy 278 (for 8 weeks)
Physiology 201
Occupational Therapy B

THIRD YEAR

Psychiatry (½ course)
Paediatrics (½ course)
Medical and Surgical Lectures 198
Occupational Therapy C
Occupational Therapy D
Elective

Four weeks field work supervised by the Faculty is required following the end of the academic year.
Occupational Therapy E (½ course)

FOURTH YEAR

Sociology 42
Psychology 79
Psychiatry (½ course)
Occupational Therapy F
Occupational Therapy G
Occupational Therapy H (Thesis)
Two Electives

Electives must be approved by the program.

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 of Psychology 20, Sociology 20 and Occupational Therapy A, and an overall grade average of not less than 60%, with a passing grade in each subsidiary course. A student who fails to qualify for automatic admission but has a grade of at least 60% in each of Psychology 20, Sociology 20 and Occupational Therapy A, and an overall grade average of at least 60%, and a passing grade in each 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.)

A student who has failed to complete a year may be permitted by the Program in Occupational Therapy to repeat that year, if a vacancy is available in that year. A student may repeat only one year of the four-year Program.

Description of Courses

FIRST YEAR

Biology 21 or 22. 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.
2 lectures, 2 laboratory hours

Psychology 20. Introduction to Psychology. Problems and methods; individual differences and their assessment; learning; memory; thinking; sensation and perception; motivation; emotion, personality.
3 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 hours

Occupational Therapy A. An introductory course emphasizing the philosophy and orientation of occupational therapy; the history of practice; a survey of systems of delivering health care,

and orientation to the Health Sciences and Behavioral Sciences. The course will include lectures and demonstrations.
2 lecture hours, 2 laboratory/demonstration hours

SECOND YEAR

Psychology 56. An introduction to theory and research in selected areas of child behavior, with particular emphasis on learning, motivation, perception and personality.
2 lectures, 1 tutorial hour

Psychology 62. Individual Differences. Quantitative methods in the study of human differences. Elementary statistics, the development and use of psychological tests, and the nature and assessment of human abilities.
3 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 hours

Occupational Therapy B. A lecture and laboratory course in the Theory and Practice of Occupational Therapy, including an introduction to techniques of activity analysis.
1 lecture hours, 4 laboratory/demonstration hours

Anatomy 214. A lecture and laboratory dissection course with special emphasis on the nerves, muscles and skeletal system; demonstration lectures in organ anatomy. A short course in Neuroanatomy will be included.
2 lecture hours, 7 laboratory hours

Physiology 201. A lecture and laboratory course designed to enable the student to understand the normal human physiology.
2 lecture hours, 3 laboratory hours

THIRD YEAR

Psychiatry. An introduction to the clinical syndromes of psychiatry.
1 hour

Paediatrics. An introduction to clinical paediatrics.
1 hour

Pathology. A brief description of general pathological processes enabling the student to comprehend the pathology of disease.
1 hour

Medical and Surgical Lectures. Lectures and demonstrations emphasizing the aetiology, symptomatology and treatment of diseases, emphasizing those of particular interest to the occupational therapist.
3 hours

Occupational Therapy C. Theory and practice of Occupational Therapy, including lectures and laboratories in specific techniques and procedures as applied to paediatric, medical, surgical and psychiatric conditions; advanced activity analysis.
3 lecture and seminar hours, 6 laboratory/demonstration hours

Occupational Therapy D. Introduction to the analysis of occupational roles and occupational behavior; introduction to Case Method; presented through lectures, laboratories and seminars.
2 lecture and seminar hours, 6 laboratory/demonstration hours

Note. At the end of the third academic year, the student is required to spend four weeks becoming oriented to selected community and institutional programs in which occupational therapy may be practised. The placements are arranged and supervised by the faculty.

FOURTH YEAR

Occupational Therapy F. Lectures, laboratories and seminars in advanced theory and practice, including Analysis and Assessment of Occupational Roles and Behavior.
3 seminar hours, 5 laboratory/demonstration hours

Occupational Therapy G. Lectures, laboratories and seminars in advanced theory and practice, including Program Planning and Administration; Case Method; Ethics and Jurisprudence; Community Programs and Public Health, Studies of Selected Topics in Theory and Practice.
10 laboratory/demonstration hours

Occupational Therapy H. 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

Sociology 42. Sociology of Work. The study of the sociological aspects of economic organization. The sociology of industry, business enterprise, occupations and professions, and the relationship of the economy to other social institutions will be emphasized.
3 hours

Psychology 79. Abnormal Psychology. A consideration of abnormal activities in sensation, perception, memory, emotion, thought and behavior; mental deficiency; the causes and symptoms of psychoneuroses; some reference to major mental disorder; psychotherapeutic techniques.
3 hours

Psychiatry. Lectures emphasizing the background knowledge essential in the understanding of the psychiatric cases and the various therapies.

Note: The above outline of courses is subject to change.

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, and in addition, must successfully complete six months postgraduate interning arranged by the CAOT. A small stipend is paid during the interning period.

Registration permits the therapist to practise in any province in Canada.

Regulations regarding eligibility for practice in Britain, the United States, or other countries may be obtained by writing to the following:

Canadian Association of Occupational Therapists
Suite 412, 57 Bloor Street West
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

Financial Assistance

The University of Western Ontario's "General Information" booklet lists scholarships, prizes, awards, bursaries and loans open to all students registering at this University.

FACULTY

Assistant Professor

Trider, Margaret F.(Mrs.), Dip OT *Toronto,* OT Reg, OTR

Lecturer

Ernest, Marilyn L., Dip OT *Toronto;* BSR, OTReg

Faculty of Medicine
Program in Physical Therapy

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PROGRAM IN PHYSICAL THERAPY

The Program in Physical Therapy consists of three years of specialized instruction in the Faculty of Medicine, following one year of studies in the Faculties of Arts, Science or Social Science.

Admission Requirements

Completion of First Year university studies, the courses of which must include at least one in Psychology and at least two of Biology, Chemistry or Physics.

Admission will be based on:

(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, 1971.

Final date for application to Physical Therapy Program: April 30, 1971.

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.

Applications for admission with advanced standing for the 1972 Summer Session must be submitted to the Director of Admissions by December 15, 1971.

Fees

Each Year:

Payable at registration $517.50

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.

Other: Texts, uniforms, travel, instruments – $700.

Program of Study

SECOND YEAR

Anatomy 214
Neuroanatomy 278
Pathology 189
Physiology 201
Electrotherapy 280 – 2
Kinesitherapy 282 – 2
*Elective

Approximate hours: 30 per week.

Two weeks of hospital orientation in London Institutions in May following final examinations.

THIRD YEAR

Survey of Human Diseases 198
Electrotherapy 280 – 3
Kinesitherapy 282 – 3
*Elective

Approximate hours: 30 per week

FOURTH YEAR

Physical Therapy 274
Medical Rehabilitation Paper 490
Physiology 442 – 201
Sociology 46
*Elective

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", 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.

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*Elective shall be selected after consultation with the Program Director.

GRADING SCHEDULE

Key to Grades is as follows:

A – 80 – 100%
B – 70 – 79%
C – 60 – 69%
D – 50 – 59%
E – 40 – 49%
F – 0 – 39%

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 55%.

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.

Unsatisfactory clinical performance.

Failure in two or more subjects.

Description of Courses

SECOND YEAR

Anatomy 214. A lecture and laboratory dissection course with special emphasis on the nerves, muscles and skeletal system; demonstration lectures in organ anatomy.

Neuroanatomy 278. A descriptive course of the gross anatomy of the central nervous system with demonstrations of prepared specimens.

Pathology 189. Introductory course.

Physiology 201. A lecture and laboratory course designed to enable the student to understand the normal human physiology.

Electrotherapy 280. An introduction to the production, effects and uses of various types of electrical energy.

Kinesitherapy 282. An introduction to the underlying theories of posture, movement and exercise, as related to the normal and abnormal. Practice is gained in the application of massage, movement and exercise, and in general patient management. Includes patient evaluation which closely follows anatomy lectures, and trains the student in observing and recording normal muscle action, joint movement, sensation and function, as a preparation for assessment of disability.

THIRD YEAR

Survey of Human Diseases 198. Lectures and demonstrations of disease, emphasizing those which may benefit from Physical Therapy techniques.

Electrotherapy 280. Demonstration and practice in the application of various forms of electrical energy, heat and cold.

Kinesitherapy 282. Physical Therapy and Rehabilitation aspects of conditions described in Survey of Human Diseases. Various forms of exercise as therapeutic measures.

Clinical Physical Therapy. Practical experience through observation and practice of, under supervision, the methods used in evaluating and treating patients in the hospital situation.

FOURTH YEAR

Physical Therapy 274. Studies in more specialized areas of Physical Therapy; discussion of problems of administration, research and continuing education; sessions pertaining to the total field of Medical Rehabilitation.

Medical Rehabilitation Paper 490. A comprehensive report or study done by the student on some aspect of Medical Rehabilitation or Physical Therapy.

Physiology 442. Further studies in Physiology of Exercise and Neurophysiology.

Sociology 46. Study of the sociological nature of health and illness, medical establishments and professional roles.

Clinical Physical Therapy. The student will be given increasing responsibility in more difficult areas for evaluating his patient, planning the program and carrying out the treatment.

Special Bursaries

The London District, Canadian Physiotherapy Association Bursary: Value $100. 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.

Interning

(a) In addition to the supervised work in the hospital setting during the Program, the student must also fulfill the requirements of a further four-month internship to be acceptable for licensing.

(b) A small stipend is paid the intern during this period.

(c) Following internship, the graduate is eligible for membership in the Canadian Physiotherapy Association.

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
64 Avenue Road
Toronto 180, 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

MEMBERS OF THE FACULTY

Associate Professor

Morgan, S. (Miss), BA, DipP *Toronto;* MCPA
Teacher's Diploma in Physiotherapy

Lecturers

Edwardson, Miss B., MCSP, MCPA, BA(PT)
Teacher's Diploma in Physiotherapy

Egan, D.A., MCSP, DipTP, MCPA Teacher's Diploma in Physiotherapy

Grantham, P.W., MCSP, MCPA Teacher's Diploma in Physiotherapy

Instructors

Cameron, Sheila E., BA(PT) *Manitoba;* MCSP, MCPA

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Faculty of Music

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Administrative Staff

Administrative Officer and Secretary to the Dean

Mrs. Marjorie Thomas, BA

Administrative Assistant

Eric A. Cosgrove

Secretary to the Associate Dean

Mrs. Erlene Prevett

Departmental Secretaries

Mrs. Marjorie Semple
Mrs. Sheila Turcon, BA
Mrs. Gwen Willison

Requirements for Admission to all Programs

1. Academic Requirements

(a) *1971-72:* Three Grade 13 subjects other than Music, one of which must be English, or four Grade 13 subjects including Grade 13 Music.
1972-73: Five Grade 13 credits other than Music, one of which must be English, or six Grade 13 credits including Grade 13 Music.
Consideration will be given to the quality of the student's achievement in several of the traditional central subjects such as: English, French, other languages, Mathematics, Sciences, History and Geography.

II. Music Requirements

Satisfactory results in an audition to be held at the Faculty of Music by appointment. To ensure early acceptance, applicants should plan to complete the audition at the earliest opportunity.

Applicants must demonstrate a performance level of Grade VIII standard in a performance area. The audition includes the performance of two or three pieces of contrasting styles of at least Grade VIII level of difficulty, some scales and other technical exercises, sight reading and general musicianship tests. Pieces need not be memorized.

Students whose principal instrument is other than piano are required, in addition, 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 Grade VI level of difficulty.

Proficiency beyond Conservatory Grade II Theory and Grade III Harmony, or Ontario Grade 13 Music, would be helpful to students in the general musicianship portion of the audition.

Admission to the Faculty of Music

All inquiries regarding admission should be directed to: The Dean of the Faculty of Music, The University of Western Ontario, London 72, Canada.

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 & Church Music, or Orchestral Instrument; (3) Theory & 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 (see pages 282 and 283)

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.

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.

Financial Assistance

Lady Eaton Bursaries

Awards up to $250.00

Faculty of Music

One award of $300.00 to be awarded to a music student from a country other than Canada.

One award, the amount to be determined annually, to a deserving music student.

Prize of $50.00 per year to be awarded to a student in any year for outstanding achievement.

Gordon V. Thompson Bursary

One award of $100.00

Women's Committee to the London Symphony Association Bursary

One award of $200.00

Waterloo Music Company Bursary

One award of $500.00

London Women's Music Club Award

One award annually to a student of voice, piano, organ, or string instrument.

Julius A. Cohen Award

One award of $100.00 to a student of a string instrument.

St. Paul's Cathedral Choir Prize

One award of $50.00 to a student of composition for a musical setting of a text specified by the donors.

Board of Governors Scholarship

Two awards of $60.00 each 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.

University Gold Medal

For a graduating student with the highest standing in a Bachelor of Music Honors program, when no other medal is awarded.

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.

The above awards, scholarships and bursaries are available to full-time students registered in the Faculty of Music.

Music students are also eligible for any of the scholarships or bursaries listed in the Faculty of Arts, Music, Science and Social Science Calendar that are available to General Arts students. Application should be made to the Awards officer.

The Library

The Music Library is a divisional/professional Library of the University of Western Ontario Libraries. It is staffed by three full-time professional librarians and six full-time clerks, together with a varying number of part-time student assistants.

The collection presently totals 20,000 items. Of this total, 18,000 items are housed together and are comprised of books, bound periodicals, scores and/or parts, records, tapes, microfilms and microcards. The remaining 2,000 items form a separate but adjoining library comprised of choral, band and orchestral scores and parts. This library is called the "Choral/Orchestral Music Library". In addition, the library currently subscribes to 180 periodicals.

Study and Listening facilities will accommodate a total of 76 persons. Other equipment includes a microcard reader, a microfilm reader and a photocopier.

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. A two-manual Challis harpsichord and two practice organs are also a part of this growing collection.

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 Symphonic Band

One of the most active ensembles on campus, this group is for instrumental majors and is open, by audition, to students from all university faculties. Its repertoire ranges widely and includes major works for symphonic band.

University of Western Ontario Choir

This is an interfaculty mixed choir of about 80 members whose activities are closely allied to the Faculty of Music program.

Chamber Ensembles

Experience in chamber literature is provided in a variety of trio, quartet and quintet ensembles.

Admission to Honors Programs, Second Year

Completion of the Common First Year with an average of at least 70%. All students must reach the minimum of the Associate level in performance in their principal applied music subject before graduation.

Honors in Music Education

Students planning to teach music in the secondary schools should enrol in the Honors Music Education (Secondary) program in second year.

Those planning to teach music in the elementary schools should enrol in the Honors Music Education (Elementary) program in second year.

The Bachelor of Music in Music Education meets the requirements of the Ontario Department of Education circular 649, and leads to the Type A certificate in instrumental and vocal music.

On application, all other Bachelor of Music programs will be evaluated by the Registrars of the Ontario Colleges of Education for admission to the Type A or Type B programs for secondary school teaching. Students who may decide to enter school music teaching upon graduation are advised to include all the choral technique courses in their program.

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 the area of specialization.

	Hours
21. Applied Principal Instrument	1
24. Instrumental Music	1
25. Theory	5
26. Music History	3
27. Choral Technique	1
28. Ensemble	3
117. Brass and Woodwind Class (For prospective Music Education [Secondary] majors only)	1
Class Piano (if required)	
English 20	3
One other course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	19 to 21

(Those intending to major in Honors Music History or Honors in Performance with a major in Voice must take a language other than English.)

HONORS IN MUSIC EDUCATION (SECONDARY)

Second Year

217. Brass and Woodwind Class	1
231. Applied Principal Instrument	1
232. Music Education Ensemble	1
235. Theory	5
236. Music History	3
237. Choral Technique	1
238. Ensemble	3
247. String Class	1
Class Piano (if required)	
Any senior English course	3
One course from the Faculties of Arts, Science or Social Sciences	2 to 3
Total Hours	21 to 22

Third Year

317. Brass and Woodwind Class	1
332. Music Education Ensemble	1
337. Choral Technique	1
341. Applied Principal Instrument	1
342. Conducting	1
347. String Class	1
348. Ensemble	3
350. Music Education Seminar	1
Two music electives, one to be chosen from music history or theory area	3 to 5
Physics 33	3
One course from the Faculty of Arts, Science or Social Science	2 to 3
Total Hours	18 to 21

Fourth Year

417. Brass and Woodwind Class	1
432. Music Education Ensemble	1
437. Choral Methods and Materials	2
442. Conducting	1
447. String Class	1
447A. Music Education String Repertoire	1
450. Music Education Seminar	2
451. Applied Principal Instrument	1
455. Orchestration	2
458. Ensemble	3
467. Percussion Class	½
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	17½ to 18½

HONORS IN MUSIC EDUCATION (ELEMENTARY)

Second Year

229. The Child Voice	1
231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
237. Choral Technique	1
238. Ensemble	3
One of:	
217. Brass and Woodwind Class (Prerequisite 117)	1
or	
247. String Class	1
Class piano (if required)	
Physics 33	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	20 to 21

Third Year

332. Music Education Ensemble	1
337. Choral Technique	1
339. Communication in Music (Prerequisite 229)	2
341. Applied Principal Instrument	1
342. Conducting	1
348. Ensemble	3
One of:	
317. Brass and Woodwind Class (Prerequisite 217)	1
347. String Class (Prerequisite 247)	1
350. Music Education Seminar	1
Two music electives, one to be chosen from music history or theory area	3 to 5
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	16 to 19

Fourth Year

432. Music Education Ensemble	1
437. Choral Methods and Materials	2
442. Conducting	1
449. Comparative Studies in Music Education	2
450. Music Education Seminar	2
451. Applied Principal Instrument	1
455. Orchestration	2
458. Ensemble	3
One of the following two combinations:	
417. Brass and Woodwind Class	1
and	
467. Percussion Class (Prerequisite 317)	½
or	
447. String Class	1
and	
447A. Music Education String Repertoire (Prerequisite 347)	1
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	17½ to 19

HONORS IN PERFORMANCE WITH A MAJOR IN PIANO

For admission to this Program, Grade X in piano, as well as evidence of exceptional performing ability, will be required in addition to the requirements listed on page 275.

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
238. Ensemble	3
Any senior English course	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	17 to 18

Third Year

341. Applied Principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
354(P). Piano Literature	1
One music elective	2
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
	14 to 16

Fourth Year

451P. Applied Principal Instrument (1 hour individual lesson) (1 hour class lesson)	2
453. Piano Pedagogy	1
458. Ensemble	3
One music elective	2
One course from the Faculties of Arts, Science or Social Science	2 to 3
	10 to 11

HONORS IN PERFORMANCE WITH A MAJOR IN VOICE

For admission to this Program, Grade X in voice, as well as evidence of exceptional performing ability, will be required in addition to the requirements listed on page 275.

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
238. Ensemble	3
Class Piano (if required)	
One course from the Faculties of Arts, Science or Social Science	2 to 3
One language course other than English	2 to 3
Total Hours	16 to 18

Third Year

341. Applied Principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
352. Music History Seminar	2
One music elective	2
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	15 to 17

Fourth Year

451P. Applied Principal Instrument (1 hour individual lesson) (1 hour class lesson)	2
452. Music History Seminar	2
453. Vocal Pedagogy	1
458. Ensemble	3
One music elective	2
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	12 to 13

HONORS IN PERFORMANCE WITH A MAJOR IN ORGAN AND CHURCH MUSIC

For admission to this Program, Grade X in organ, as well as evidence of exceptional performing ability, will be required in addition to the requirements listed on page 275.

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
237. Choral Technique	1
238. Ensemble	3
Class Piano (if required)	
Any senior English course	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	18 to 19

Third Year

337. Choral Technique	1
341. Applied Principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
353. Church Music	1
354(O). Organ Literature	1
One music elective	2
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	16 to 18

Fourth Year

437. Choral Methods and Materials	2
451P. Applied Principal Instrument (1 hour individual lesson) (1 hour class lesson)	2
453. Organ Pedagogy	1
458. Ensemble	3
463. Church Music	2
One music elective	2
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	14 to 15

HONORS IN PERFORMANCE WITH A MAJOR IN ORCHESTRAL INSTRUMENT

For admission to this Program, Grade X in the Orchestral Instrument, as well as evidence of exceptional performing ability, will be required in addition to the requirements listed on listed on page 275.

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
238. Ensemble	3
Class Piano (if required)	
Any senior English course	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	17 to 18

Third Year

341. Applied Principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
One music elective	2
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	13 to 15

Fourth Year

451P. Applied Principal Instrument (1 hour individual lesson) (1 hour class lesson)	2
453. Pedagogy	1
458. Ensemble	3
One music elective	2
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	10 to 11

HONORS IN THEORY AND COMPOSITION

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
238. Ensemble	3
239. Composition	2
Class Piano (if required)	
Any senior English course	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	19 to 20

Third Year

341. Applied Principal Instrument	1
342. Conducting	1
345. Counterpoint	3
348. Ensemble	3
349. Composition	3
Physics 33	3
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	16 to 17

Fourth Year

451. Applied Principal Instrument	1
455. Orchestration	2
458. Ensemble	3
459. Composition	3
One music elective from the Music History area	2
One course from the Faculties of Arts, Science or Social Science	2 to 3
Total Hours	13 to 14

HONORS IN MUSIC HISTORY

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
238. Ensemble	3
252. Music History Seminar	2
Class Piano (if required)	
One course from the Faculties of Arts, Science or Social Science	2 to 3
One language course other than English	2 to 3
Total Hours	18 to 20

Third Year

341. Applied Principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
Two Music History electives	4
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	15 to 17

Fourth Year

451. Applied Principal Instrument	1
452. Music History Seminar	2
458. Ensemble	3
One Music History elective	2
One other music elective	2
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	14 to 16

BACHELOR OF ARTS WITH HONORS MUSIC

Second Year

231. Applied Principal Instrument	1
235. Theory	5
236. Music History	3
237. Choral Technique	1
238. Ensemble	2
Class Piano (if required)	
Three courses from the Faculties of Arts, Science or Social Science	6 to 9
Total Hours	18 to 21

Third Year

337. Choral Technique	1
341. Applied principal Instrument	1
345. Counterpoint	3
348. Ensemble	3
Two music electives from Theory or Music History areas	4
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	16 to 18

Fourth Year

437. Choral Methods and Materials	2
451. Applied Principal Instrument	1
458. Ensemble	2
Two music electives	4
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	13 to 15

BACHELOR OF ARTS WITH MUSIC OPTIONS

Requirements for Admission

Completion of the common first year with an average of at least 50%.

Second Year

31. Applied Principal Instrument	1
35. Theory	5
36. Music History	3
37. Choral Technique	1
38. Ensemble	2
Class Piano (if required)	
Three courses from the Faculties of Arts, Science or Social Science	6 to 9
Total Hours	18 to 21

Third Year

41. Applied Principal Instrument	1
45. Counterpoint	3
47. Choral Methods and Materials	2
One music elective	2
Three courses from the Faculties of Arts, Science or Social Science	6 to 9
Total Hours	14 to 17

BACHELOR OF MUSICAL ARTS

Requirements for Admission

Completion of the common first year with an average of at least 50%.

Second Year

29. The Child Voice	1
31. Applied Principal Instrument	1
35. Theory	5
36. Music History	3
37. Choral Technique	1
38. Ensemble	3
One of:	
217. Brass and Woodwind Class	1
or	
247. String Class	1
Class Piano (if required)	
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	19 to 21

Third Year

39. Communication in Music	2
41. Applied Principal Instrument (If graduation requirements have not been completed)	1
42. Conducting	1
47. Choral Methods and Materials	2
49. Comparative Studies in Music Education	2
50. Music Education Seminar	1
One or 317. Brass and Woodwind Class (Prerequisite 217)	1
or	
347. String Class (Prerequisite 247)	1
Two music electives	4
Two courses from the Faculties of Arts, Science or Social Science	4 to 6
Total Hours	17 to 20

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 fields of Music Theory, Music Education, Composition, and 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 new 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 then B in the other areas. Deficiency courses may not be used as a means of improving the academic average so as 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 successful classroom teaching. This prerequisite does not apply to all courses, but it does apply to the music education seminar, advanced conducting, and the choral and instrumental technique courses.

Candidates in Composition must submit scores of their recent compositions and have them accepted by the Graduate Music Faculty.

Candidates in the area 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 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 thesis 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 Head 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 who register for applied music study.

Thesis. 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 the makeup of the Examining Board that conducts the oral examination.

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 Head 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 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. 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 Head 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

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 of 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 of Vocal Art**
590. M.A. 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

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

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

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***Half Course**

developments and an introduction to twentieth century style.
Prerequisite: Music 25
Five 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

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 345
Two hours

239. Composition. An introductory course in composition including analysis of widely divergent works in the established literature. Students will write compositions for voices and instruments.
Two 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.
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

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.
Texts: Grout, A History of Western Music
Three hours

36, 236. Music History II. A continuation of the survey to the present time.
Texts: Grout, A History of Western Music
Starr & Devine, Music Scores Omnibus, Vol. II
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(P). Piano Literature. A study of the literature for solo piano. For piano majors in the third year.
Prerequisite: Music 36 or 236
One hour

354(O). Organ Literature. A study of the literature for organ. For organ majors in the third year.
Prerequisite: Music 36 or 236
One hour

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

APPLIED MUSIC AND PEDAGOGY

21, 31, 231, 41, 341, 451. Individual lessons in the student's principal applied music areas.
One hour

At the end of each academic year, the student must successfully pass an examination of 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.

Class Piano. A deficiency course for students whose principal instrument is other than piano and who are unable successfully 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. Materials, methods and techniques of service playing. For organ majors in the third and fourth years.
Music 353 One hour
Music 463 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.
One hour

28, 38, 48, 238, 348, 458. Band, Orchestra, Chorus, Collegium Musicum, Chamber Ensembles and Accompanying. Performance of major works for the respective media. The faculty will assign students to those performing ensembles which are deemed necessary to the musical development of the individual.
Three 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

MUSIC EDUCATION

24. Instrumental Music. A general history of the development of the wind and string instruments. The instrumentation of the orchestra and band. Transposing instruments. Elementary score reading and conducting.
One hour

117, 217, 317, 417. Woodwind and Brass Class. Class instruction in the woodwind and brass instruments. The student is expected to acquire playing proficiency in one instrument of each family and a general playing knowledge of the others.
One hour

232, 332, 432. Music Education Ensemble. Performance of band and orchestral literature suitable for school performing ensembles.
One hour

27, 37, 237, 337. Choral Technique. Basic elements of voice production and choral singing. Elementary choral conducting. Study of rehearsal techniques through performance of selected repertoire.
One hour

29, 229. The Child Voice. Music materials and procedures which may be employed in the development of the child and adolescent voice.
One hour

39, 339. Communication in Music. An exploratory course in rhythmic movement, instrumental activities, and listening techniques which are related to the development of the child. Attention will be given to special areas of creativity.
Two hours

49, 449. Comparative Studies in Music Education. A comparative study of the materials and procedures in music education. The work of Kodaly, Orff, and Suzuki will be selected for more intensive work.
Two hours

47, 437. Choral Methods and Materials. A survey of choral repertoire suitable for use in high schools. Advanced choral conducting. The administration of a choral music program in the schools.
Prerequisite: Music 337
Two hours

247, 347, 447. String Class. Class instruction in performance on the string instruments.
One hour

447A. String Repertoire. A survey of string literature for school orchestras and ensembles.
One hour

42, 342. Conducting. Basic conducting techniques.
One hour

442. Conducting. Advanced instrumental conducting techniques.
One hour

50, 350. Music Education Seminar. An introductory seminar dealing with the historical background and evolving philosophy of school music and its administration.
One hour

450. Music Education Seminar. School music administration. Classroom teaching techniques. School music libraries. Methods and materials of school wind, string and percussion classes. Band and orchestra performing materials. Psychology of the musical mind. Tests and measurements of musical ability.
Two hours

467. Percussion Class. Instruction in the fundamental playing techniques of percussion instruments.
One half hour

MUSIC COURSES FOR ARTS AND SCIENCE STUDENTS

The following music courses are offered on the main campus as electives for Arts and Science students.

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 the 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)

Survey of Music Literature. Baroque, Classic and Romantic repertoire. Students will be expected to prepare works for class performance.
One hour lecture, one hour lab. (half course) — 18

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. — 18

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. 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) — 24

Music 30Y. A continuation of Music 20Y, including a detailed study of several large-scale compositions from a listener's viewpoint.
Prerequisite: Music 20Y or equivalent
Two hours, plus lab. — 18

Members of the Faculty of Music

Dean of the Faculty and Professor

von Kuster, Clifford, LRCT *Toronto;* MusBac *Toronto*

Associate Dean and Professor

McKellar, Donald A., ARCT *Toronto;* AMus *London, Ontario;* MusBac *Toronto;* MM *Eastman*

DEPARTMENT OF MUSIC HISTORY

Associate Professor and Department Chairman

Greene, Gordon K., AMus, BA, BEd, MA *Alberta*

Professor

Rosé, Alfred, BA *UWO*

Associate Professor

Downs, Philip G., BA *Leeds, England;* MusM, PhD *Toronto*

Stark, James A., BA *Minnesota;* MusM *Toronto*

Assistant Professor

Pendle, Karin, BA *Minnesota;* MM, PhD *Illinois*

Seiffert, Stephen, BM *Eastman;* MA *Brown;* AMD *Eastman*

Lecturer

Gustafson, Roger, BM *Oberlin;* MA *Kent State;* MA (Musicology) *Michigan State*

Instructor

Stokes, Jeffrey, BM *Eastman*

DEPARTMENT OF MUSICAL THEORY AND COMPOSITION

Associate Professor and Department Chairman

Haenselman, Carl F., BMusEd, MMus *Colorado;* PhD *Indiana*

Visiting Professor

Bartalus, Ilona, Graduate of Franz Liszt Academy of Music (MA of Music) *Budapest*

Associate Professor

Bray, Kenneth I., MusBac *Toronto;* MM *Eastman*

Assistant Professor

Aldrich, Ralph, LRSM, LGSM *London, England;* MusBac *Victoria, Wellington, N.Z.*

Clements, Peter J., MusBac, MM *Michigan*

Giron, Arsenio, BMus *Oberlin;* MA *Tulane*

Hughes, Robert, MusBac, BEd, MM *Toronto*

Riseling, Robert, BMEd *Illinois Wesleyan;* MM *Texas*

Lecturer

Cortner, Larry, MusBac *Oberlin;* MM *Eastman*

Fisher, Alfred J., BM *Boston University;* MM *Michigan State*

Instructor

Anderson, Jean M., LRAM *Royal Academy, London, England;* BM *Nottingham;* MM *Eastman*

Baker, Kathryn, ARCT *Toronto;* AMus *London, Ontario;* MusBac *UWO;* MM *Eastman*

Jaeger, Laura, BM *Indiana*

Longton, Michael, ARCT *Toronto;* LTCL *Trinity, London, England;* BMus, MMus *British Columbia*

Stokes, Jeffrey, BM *Eastman*

Wechsler, Malcolm, BSc, MSc *Juilliard School of Music*

DEPARTMENT OF MUSIC EDUCATION

Associate Professor and Department Chairman

Green, J. Paul, ARCT, MusBac *Toronto;* MM *Eastman*

Visiting Professor

Bartalus, Ilona, Graduate of Franz Liszt Academy of Music (MA of Music) *Budapest*

Professor

McKellar, Donald A., ARCT *Toronto;* AMus *London, Ontario;* MusBac *Toronto;* MM *Eastman*

Associate Professor

Bray, Kenneth I., MusBac *Toronto;* MM *Eastman*

Johnson, Deral J., BA *Sterling, Kansas;* MA *Colorado*

Assistant Professor

Aldrich, Ralph, LRSM, LGSM *London, England;* MusBac *Victoria, Wellington, N.Z.*

Dilmore, Hermon C., BM, MM *Eastman*

Hughes, Robert, MusBac, BEd, MM *Toronto*

Skelton, Robert A., ARCT, MusBAc *Toronto;* MM *Indiana*

Terry, Earle, BA, BPaed *Toronto;* MMus *Montreal*

VanOstrand, George, BSc *State University of New York;* MM *Eastman*

Lecturer

Dalkert, Charles, BM *Illinois Wesleyan;* MM *Eastman*

Ford, Allan J.

Instructor

Jaeger, Laura, BM *Indiana*

Stokes, Jeffrey, BM *Eastman*

DEPARTMENT OF APPLIED MUSIC AND PERFORMANCE

Associate Professor and Department Chairman

McIntosh, John S., ARCT, MusBac *Toronto;* AAGO *New York;* MM *Eastman*

PIANO

Professor

von Kuster, Clifford, LRCT, MusBac *Toronto*

Assistant Professor

Bratuz, Damiana, Master's Diploma in Piano *Trieste;* MM *St. Louis;* MusDoc *Indiana*

Munn, Howard

Instructor

Aldrich, Pauline, LTCL *Trinity;* LRSM *Royal Schools, London, England;* Premier Prix *Luxembourg*

Bracey, John-Paul, BM *Converse;* MM *Eastman*

Giron, Patricia, BMus *Oberlin*

MacLennan, Marian, RCAD (Artist's Diploma) *Toronto;* BA *UWO*

Mazan, Antonia, LMus *London, Ontario;* Graduate of Vienna Academy; BA *UWO*

Munn, Lesley, BMus *Philadelphia Conservatory of Music*

Weaver, Sandra, BM, MM *Indiana*

CLASS PIANO

Instructor

Baker, Kathryn, ARCT *Toronto;* AMus *London, Ontario;* MusBac *UWO;* MM *Eastman*

Bracey, John-Paul, BM *Converse,* MM *Eastman*

ORGAN

Associate Professor

McIntosh, John S., ARCT, MusBac *Toronto;* AAGO *New York;* MM *Eastman*

Lecturer

Cortner, Larry, MusBac *Oberlin;* MM *Eastman*

HARP

Instructor

Lorcini, Maria

STRINGS

Visiting Professor

Tsutsumi, Tsuyoshi, Graduate of To Ho Conservatory *Tokyo;* Artist Diploma *Indiana* (Violoncello)

Assistant Professor

Aldrich, Ralph, LRSM, LGSM *London, England;* MusBac *Victoria, Wellington, N.Z.* (Viola)

Dilmore, Hermon C., BM, MM *Eastman* (String classes)

Skelton, Robert A., ARCT, MusBac *Toronto;* MM *Indiana* (Violin)

Instructor

Evens, Mary (Violoncello)

Stokes, Jeffrey, BM *Eastman* (Double Bass)

WOODWIND

Associate Professor

Bray, Kenneth I., MusBac *Toronto;* MM *Eastman* (Bassoon)

Assistant Professor

Riseling, Robert, BMEd *Illinois Wesleyan;* MM *Texas* (Clarinet)

VanOstrand, George, BSc *State University of New York;* MM *Eastman* (Clarinet)

Instructor

Jaeger, Laura, BM *Indiana* (Oboe)

Meyer, G.J., Graduate of Royal Conservatory *Amsterdam* (Flute)

Murphy, Philip, BA, MusGPaed *UWO* (Clarinet)

BRASS

Assistant Professor

Seiffert, Stephen, BM *Eastman;* MA *Brown;* AMD *Eastman* (French horn)

Lecturer

Dalkert, Charles, BM *Illinois Wesleyan;* MM *Eastman* (Trombone)

Ford, Allan J., (Trumpet)

Instructor

Clarke, Joan, MusBac *Toronto* (Trumpet)

PERCUSSION

Assistant Professor

Hughes, Robert, MusBac, BEd, MM *Toronto*

VOICE

Professor

Rosé, Alfred, BA *UWO*

Associate Professor

Johnson, Deral J., BA *Sterling, Kansas;* MA *Colorado*

Stark, James A., BA *Minnesota;* MusM *Toronto*

Assistant Professor

Pendle, Karin, BA *Minnesota;* MM, PhD *Illinois*

CONDUCTING

Professor

McKellar, Donald A., ARCT, MusBac *Toronto;* AMus *London, Ontario;* MM *Eastman*

Associate Professor

Johnson, Deral J., BA *Sterling, Kansas;* MA *Colorado*

Assistant Professor

Dilmore, Hermon C., BM, MM *Eastman*

FACULTY OF MUSIC LIBRARY

Librarian

Lewis, Larry C., AMus *London, Ontario;* BA *UWO* BLS *Toronto*

Faculty of Nursing

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ACADEMIC CALENDAR

1971

September 7	Classes start for Year 3, Basic Nursing
September 13	Classes start for Year 2, Basic Nursing
September 13 – 18	Registration Week
September 16	Classes Start for Year 4, Basic Nursing
September 20	Classes start for all other BScN students
October 29	Convocation
December 10	Classes end
December 11	Christmas vacation starts

1972

January 3	Classes start
January 8	Term 1 ends
January 10	Term 2 starts
February 21 – 26	Conference Week (no classes)
April 15	Term 2 ends
April 17 – May 6	Examinations
April 26	*Term 3 starts for Year 3, Basic Nursing
May 7	Term 3 starts for Years 2 and 3, Program for Registered Nurses
May 27	Term 3 ends
May 30 – June 2	Convocation

*Starting date of Term 3 for Years 1 and 2, Basic Nursing, to be determined by examination dates of courses involved.

The Booklet *"General Information"*, presenting concise introductory information about The University of Western Ontario, may be obtained from the Registrar's Office, The University of Western Ontario, London 72, Canada.

History of the Faculty of Nursing

The year 1971 marks the fifty-first 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 forLondon 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 undergraduate 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. 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 enrollment.

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 in Nursing 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 School of Nursing is thus able to provide well-lighted, air-conditioned lecture, group conference and case-method rooms, and study-hall space in which books of reference and professional journals are available for student and faculty use. Additional reading room space, conference rooms and faculty offices are being planned.

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".

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. This is done with a view to appreciating factors involved in the formulation of a generalized theory of nursing which can be tested.

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 1971-72 Announcement of the Faculty of Graduate Studies.

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.

ADMISSION REQUIREMENTS 1971-72

The Faculty of Nursing reserves the right to limit the number of applicants admitted to either Bachelor of Science in Nursing program.

Academic Admission Requirements

A. For Applicants With Ontario Grade 13 Standing

A student must satisfy general admission requirements for the University. Nursing requires Grade 13 Chemistry and Biology with minimum science average of 60%.

NOTE: Students applying for admission in 1971 without Grade 13 Biology will be considered on the proviso they complete Biology 21 or 22 during the Summer School session of 1971 or 1972.

1. Registered nurses are advised to review Grade 12 and Grade 13 Chemistry prior to registration.

2. 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.

3. A nursing school is not considered a "school" as it relates to Section 21 of the Application for Undergraduate Admission.

B. For Applicants With High School Standing From Other Canadian Provinces

"All Applicants (excluding Registered Nurses) with high school standing from high schools in jurisdictions outside of Ontario must write the tests offered by the College Entrance Examination Board (CEEB) or the tests of the Service for Admission to College and University (SACU)."

1. Students from other provinces in Canada are eligible to apply for admission to the first year at this Faculty if their academic records meet in subject matter and standing obtained both the requirements for admission to this Faculty and the requirements for admission to a recognized university in their own province in a program similar to the one to which admission is being sought at this University.

2. Registered Nurse applicants who meet admission requirements of this University must have obtained the equivalent of Ontario Grade 13 Chemistry with a 60% standing for admission to the Nursing Program.

C. For Applicants With High School Standing From Other Countries

All applicants from other countries interested in either of theBachelor of Science in Nursing programs are requested to write to the Dean, Faculty of Nursing, The University of Western Ontario, London 72, Ontario.

Other Admission Requirements

A. 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

3. Professional competence.

B. Prior to enrolling in the Faculty of Nursing, all students are requested to 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

Applications for admission to the Program for Registered Nurses are to be submitted to the Dean, Faculty of Nursing, The University of Western Ontario.

Applications for admission to the Basic Nursing Program are to be submitted to the Registrar, The University of Western Ontario.

THE BASIC NURSING PROGRAM

This is a four-year program leading to the degree of Bachelor of Science in Nursing (BScN) 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 nursing. These are currently arranged in teaching hospitals and health agencies in the community. The facilities of the University Hospital will also be utilized on its completion.

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, Social Science. In Years 1 and 2 there follows an additional term of four weeks. Year 3 is preceded by a two-week experience and followed by a five-week experience. Year 4 is preceded by a one-week experience.

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 a minor of choice consisting of three courses.

Year 1

Chemistry	25
Nursing	20
Psychology	20
Sociology	20
Anatomy	206

Year 2 (for 1971 only)

Anatomy	206
Biochemistry	206b
Chemistry	33a
Nursing	230
Physiology	206

One elective
One elective from Sociology, Psychology or Anthropology

Year 3

Bacteriology	206
Nursing	330
Nursing	340
Pathophysiology	206
Pharmacology	206
Statistics	200

Year 4

Community Medicine	206
Nursing	450
Nursing	460
Nursing	470
Psychiatry	206

Three electives

THE PROGRAM FOR REGISTERED NURSES

This is a three-year program leading to the degree of Bachelor of Science in Nursing 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.

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, Social Science. A third term of a maximum of three weeks may be required at the end of Years 2 and 3.

Required Courses

Year 2

Chemistry	25
Nursing	221

One elective from Psychology, Sociology or Anthropology
Two other electives

Year 3

Biochemistry	206b
Chemistry	33a
Nursing	371
Physiology	206
Statistics	200

One elective from Psychology, Sociology or Anthropology
One other elective

Year 4

Bacteriology	206
Nursing	471
Pharmacology	206

One elective from Psychology, Sociology or Anthropology
Two other electives

(a) Students are required to select a sequence of three courses from one of Psychology, Sociology or Anthropology, which will be studied during each of the three years of the program.

(b) Among the electives, students are required to select a minimum of five courses from the Faculties of Arts and Social Science.

Course Descriptions

Anatomy 206. An introductory course in Human Anatomy. The gross and microscopic structure of the human body is taught by systems, with an emphasis on the clinical importance of surface anatomy. Some radiology, embryology and teratology are included. Student participation seminars are distributed throught the course.This course is taught by the Department of Anatomy.
3 hours – Term 1
2 hours – Term 2

Bacteriology 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.
3 hours – Terms 1 and 2

Biochemistry 206b. Lectures dealing with the chemical nature of biological material including blood, bile, urine, cerebrospinal fluid and tissues, and an introduction into catabolic and anabolic process of physiological and medical interest. This course is taught by the Department of Biochemistry.
2 hours – 3 laboratory hours – Term 2

Chemistry 25. General Chemistry stressing modern atomic theory, the physico chemical properties of solutions and including an introduction to organic chemistry. This course is taught by the Department of Chemistry.
2 hours – 3 laboratory hours – Terms 1 and 2

Chemistry 33a. Organic Chemistry. This course is taught by the Department of Chemistry.
2 hours – 3 laboratory hours – Term 1

Community Medicine 206. A course dealing with the epidemiologic and organizational aspects of communicable disease control, occupational health, family and child health, mental health, chronic disease control and other programs directed toward the prevention of disease and disability as well as the provision of primary, continuing and comprehensive care of individuals and families. Taught by the Faculty of Medicine
2 hours – Terms 1 and 2

Nursing 20. Introduction to professional nursing. Some of the major concepts, assumptions and skills underlying professional nursing practice are considered. Attention is directed toward developing a beginning understanding of the nature of health and illness and the organization of resources for the practice of comprehensive health care. Study is made of the contribution of the individual nurse, organized nursing services, and the nursing profession in the local and wider community health service. Theory is supplemented by selected experiences in community agencies.
6 hours – Terms 1 and 2
4 weeks – Term 3

Nursing 221. An historical approach to the study of current issues in health services; the organization, development and delivery of health services, concepts of health and illness trends are examined. This course is designed to promote an understanding of the nurse's role and responsibilities in relation to the individual, family and community. The nursing practicum will focus on an examination of the community structure.
4 hours – Terms 1 and 2

Nursing 230. 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.
6 hours – Terms 1 and 2
4 weeks – Term 3

Nursing 330. 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.
6 hours – Terms 1 and 2

Nursing 340. Consideration of the role of the professional nurse in the care of adults with primary focus on their needs in illness. Nursing practice in relation to early diagnosis and prompt treatment, disability limitation and rehabilitation, also health promotion and illness prevention. Experience is provided in the nursing of selected individuals to augment and facilitate theoretical learning and to develop increasing skill in nursing practice.
2 weeks preceding Term 1
12 hours – Terms 1 and 2
5 weeks – Term 3

Nursing 371. The middle year considers the more specific aspects of the professional role with consideration of the developmental tasks of the individuals and families. Students are introduced

to research methodology with beginning exploration of the contribution of research to the development of a nursing science and the furthering of professional goals. There is increasing emphasis on the nurse's leadership role in influencing the quality of care for patients and directing others; on her role as a teacher of patients and families; and on her professional interactions within the context of comprehensive patient care. A nursing practicum is included.
6 hours — Terms 1 and 2

Nursing 450. Nursing of the individual and his family with emotional health problems. Promotion of therapeutic nursing with emphasis upon the collaborative relationships with the health team. Experience is provided in the nursing of selected individuals and families in hospital and community.
One week preceding Term 1
5 hours — Terms 1 and 2

Nursing 460. Nursing of the family within the community in complex situations. Promotion of family nursing with emphasis on community health services. Advanced experience is provided in the nursing of selected individuals and families in the community.
4 hours — Terms 1 and 2

Nursing 470. Guided study, class discussion and practice related to the role of a beginning professional nurse practitioner. Interrelated areas receiving focus:

(a) the leadership role,

(b) developments in the delivery of health services, with special emphasis on nursing,

(c) brief introduction to research methodology, evaluation and utilization.
4 hours — Terms 1 and 2

Nursing 471. This course is designed to allow the student to examine critically the purpose and practice of nursing in the light of her increased knowledge, both professional and general, acquired through the three years of the program. Specific nursing authors' views about the purpose and practice of nursing are considered. The practicum provides an opportunity for the student to evaluate such views. A choice of nursing electives are offered in second term for the student to examine in greater depth, aspects of her professional role, eg. leadership, and teaching-learning process, interviewing and counselling and research. The setting for the practicum may be in the hospital and/or the community.
6-8 hours — Terms 1 and 2

Pathophysiology 206. Introductory classes in general pathological processes followed by consideration of pathophysiological basis of signs, symptoms, medical diagnosis and therapy. Taught by the Faculty of Medicine.
3 hours — Term 1
2 hours — Term 2

Pharmacology 206. A survey of the principles involved in drug actions, classification of drugs, description of the characteristic effects of drugs on various systems of the body in health and disease and their uses, abuses and toxicity. The aim of this course is to provide a basis for skillful and safe therapy. This course is taught by the Department of Pharmacology.
1 hour — Term 1
2 hours — Term 2

Physiology 206. 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.
5 hours — Terms 1 and 2

Psychiatry 206. A lecture course covering the clinical syndromes of Psychiatry. Emphasis is on the syndromes encountered in professional practice.
Taught by the Department of Medicine
2 hours — Terms 1 and 2

Psychology 20. Introduction to Psychology; Problems and Methods; individual differences and their assessment; learning, memory, thinking sensation and perception, motivation; emotion; personality. This course is taught by the Department of Psychology.
3 hours — Terms 1 and 2

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. This course is taught by the Department of Sociology.
3 hours — Terms 1 and 2

Statistics 200. Introduction to Statistics: basic concepts, sampling, measures of central tendency, variability, tests of probability, correlation, significance.
1 hour — Terms 1 and 2

Examinations and Grades

The following policies for examination and grades obtain for the academic year 1971-1972. The Faculty of Nursing reserves the right to alter these academic requirements in subsequent years.

Final Grade

The final grade for most courses is based upon individual assignments, group projects, satisfactory clinical performance and written examinations.

Mid-Term Examinations

Mid-term examinations are given in some courses. The purpose of these papers is to help students evaluate their progress and by subsequent conferences with members of the Faculty, afford an opportunity to discuss problems encountered.

Requirements To Sit For Examination

The right to sit for examinations is conditional upon regular attendance at classes, completion of assignments and satisfactory clinical performance.

Final Examinations

Final examinations for students registered in intramural courses are conducted in April, May and June.

A student may be refused permission to write the final examination for failure to maintain satisfactory academic standing throughout the year.

Final examination papers will not be returned to students.

Supplemental Examinations

Supplemental examinations are not offered by the Faculty of Nursing.

Nursing Courses

If a student has a second failure in a nursing course, she may only proceed with special permission of the Dean, Faculty of Nursing.

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.

Aegrotat Standing

Aegrotat standing (academic standing without examination) may be given only to students in the final year of a Bachelor of Science in Nursing program. No aegrotat standing is given in the other years of either program. On compassionate grounds, and with supporting documents, a student may petition the Dean of the Faculty of Nursing for:

1. the privilege of writing deferred examinations

or

2. aegrotat standing which would be 50% in non-nursing courses and 60% in nursing courses.

Failure To Appear At Examination

A student who fails to appearfor an examination at the time set in the timetable will not be allowed to write on the examination paper thus missed. The student may petition the Dean of the Faculty of Nursing for the privilege of writing a deferred examination or for aegrotat standing if she is in the final year of a program. Petitions will be entertained only when they are submitted on compassionate grounds with supporting documents.

Failed Course

If a student is given permission to repeat a failed course, 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.

Failed Year

A student who fails to complete a year may be permitted by the Dean of the Faculty of Nursing to repeat the 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, she must pass that year without conditions to be allowed to continue in the program.

Grading System

The following grading system is used:

80% - 100% A
70% - 79% B
60% - 69% C — passing grade in nursing courses
50%-59% D — passing grade in non-nursing courses

Passing Grade

Students may proceed to the next year of their respective programs if the following conditions are met:

1. Satisfactory clinical performance

2. A grade of 60% and above in each nursing subject
3. A grade of 50% and above in all non-nursing subjects
4. An overall average of 60%

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.

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 the 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	$517.50
If paid in two instalments	
Registration day	$300.00
First day of Second Term	$222.50
Part-time Intramural Students	
per course	$105.00
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	$517.50
Board and room (terms 1 and 2	800.00
	to $1,000.00
Books and supplies	$100.00
	to $120.00

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 enrollment.)

Registered nurses are expected to bring their own uniforms.

Cost of transportation related to required clinical experience and for laundering uniforms is an annual expense item for all students.

REGULATIONS

1. Experience proves that success in nursing studies requires that students devote a substantial portion of their time to the requirements of the program. The Faculty advises all students to avoid outside employment unless absolutely necessary. If a student believes that outside employment is essential in order to remain at the University, she should discuss this with the Dean. Efforts will be made to secure financial assistance so that employment will not be necessary.

2. Students admitted to the Faculty of Nursing are not permitted to take additional courses concurrently in other faculties of the University, or other educational institutions, without special permission from the Dean of the Faculty of Nursing.

3. Regular attendance is expected of students in all courses. A student who is absent from two or more consecutive classes in a course because of illness or other valid reason should report to the instructor upon return to class. Leave of absence is permitted in unusual circumstances after consultation with the Dean or a member of the Faculty of Nursing. Students in good standing who withdraw from the Faculty can only be readmitted subject to the regulations in force at the time they apply to re-enter.

AWARDS

The Gold Medal of the Alumni Association of The University of Western Ontario is awarded each year. 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.

FINANCIAL ASSISTANCE

The University of Western Ontario's "General Information" booklet lists scholarships, prizes, awards, bursaries and loans open to all students registering at this University. There are also a number of additional sources of financial aid available to students enrolling in nursing programs.

I.O.D.E. (Dr. David Crombie Chapter) Bursary

VALUE: $100.00
FOR: A student registered in the Faculty of Nursing.
Enquiries are to be directed to the Awards Officer, Thames Hall, The University of Western Ontario, London 72.

Ontario Department of Health Bursaries

VALUE: Tuition fees and $1,400 ($1,800 for students with a spouse or children totally dependent upon them for support).

FOR: Students registered in the final two years of the Program for Registered Nurses. Enquiries are to be directed to Principal Nurse Consultant, Research and Planning Branch, Department of Health, Parliament Buildings, Toronto 181.

VALUE: Tuition fees and $1,600 ($2,000 for students with a spouse or children totally dependent upon them for support).

FOR: Students registered in the MScN programs. Enquiries are to be directed to Principal Nurse Consultant, Research and Planning Branch, Department of Health, Parliament Buildings, Toronto 181.

Registered Nurses' Association of Ontario Fellowship

VALUE: $3,500.00

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.

Registered Nurses' Association of Ontario Loan Fund

VALUE: Up to $1,000.00, interest free for three years.

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.

St. John Ambulance Association of Canada – The Countess Mountbatten Bursary Fund

VALUE: $200.00 to $400.00

FOR: Students enrolled in any year of any nursing program.
Enquiries are to be directed to the Chairman of Bursary Funds, St. John Ambulance, 321 Chapel Street, Ottawa 2, not later than May 16.

St. John Ambulance Association of Canada – The Margaret MacLaren Memorial Fund

VALUE: $1,000.00

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 16th.

The Mildred I. Walker Bursary

VALUE: Up to $500.00

FOR: A nursing student in a Bachelor of Science in Nursing program. Enquiries are to be directed to the Awards Officer, Thames Hall, The University of Western Ontario, London 72.

The W.B. Saunders Company Canada Limited Nursing Fellowship

VALUE: $1,200.00

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.

Miss Helen Marion Cole RN Memorial Bursary

VALUE: $100.00

FOR: Students in the penultimate year of a nursing program.
Enquiries are to be directed to the Awards Officer, Thames Hall, The University of Western Ontario, London 72.

Victorian Order of Nurses for Canada (National) Bursaries

VALUE: $1,800.00

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 2.

Victorian Order of Nurses, Brantford Branch Bursaries

VALUE: $1,500.00

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 be directed to Victorian Order of Nurses, Brantford Branch, 194 Terrace Hill, Brantford.

Victorian Order of Nurses, Hamilton-Dundas Branch Bursaries

VALUE: $1,500.00

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.

Victorian Order of Nurses, Metropolitan Toronto Branch Bursaries

VALUE: $1,000.00

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.

Victorian Order of Nurses, Windsor-Essex Branch Bursaries

VALUE: $1,000.00

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.

Members of the Faculty of Nursing

Professor and Dean

Aikin, R. Catherine, RegN; BA, BN *McGill;* MA *Chicago*

Professors

Griffin, Amy E., RegN; BA *Toronto;* MSc *Wayne State;* EdD *Columbia*

Hibbert, Dorothy M., RegN; BS, MA, Professional Diploma *Columbia*

Associate Professors

Brown, Louise S., RegN; BScN *UWO;* MS *Western Reserve*

Healey, Eileen N., RegN; BScN *UWO;* MA London

Horn, Ethel M., RegN; BS, MA *Columbia*

Stewart, Diane Y., RegN; BScN, MScN *UWO;* (Part-time)

Wood, Vivian (Mrs.), RegN; BScN *UWO;* EdM *Boston*

Assistant Professors

Brown, Barbara, RegN; BScN *UWO;* MN *Washington*

Calvert, Phyllis R., RegN; BSN *British Columbia;* MS *California*

Creeggan, Sheila, RegN; BScN *Windsor;* MScN *UWO*

Forrest, Jean W., RegN; BN *McGill;* BA *Laurentian;* MS *Boston*

Gerhard, Wendy (Mrs.), RegN; BScN, MScN *UWO*

Hezekiah, Jocelyn A., RegN; BN *McGill;* MEd *Toronto*

McWhirter, Jeananne, RegN; BN *McGill;* MPH *Pittsburg*

Mantle, Jessie H., RegN; BN *McGill;* MS *California*

Potter, Thelma I., RegN; BN *McGill;* MScN *Boston*

Shea, Hattie (Mrs.), RegN; BScNEd *Texas*

Lecturers

Fraleigh, Donna M. (Mrs.), RegN; BScN *UWO*

Jasinski, Joan (Mrs.), RegN; BScN *UWO;* (Part-time)

Skafel, Ann (Mrs.), RegN; DNEd *UWO;* (Part-time)

Weber, Elizabeth (Mrs.), RegN; BScN *UWO*

Instructors

Mahoney, Lorraine M., RegN; BN *McGill*

Melchior, Lorraine (Mrs.)., RegN; BScN *UWO;* (Part-time)

Parker, Patricia J. (Mrs.), RegN, BScN *Toronto*

Petersson, Carolyn (Mrs.), RegN; BScN *Wayne State*

Pfisterer, Janet (Mrs.), RegN; BScN *UWO*

Visiting Professor

Leonard, R.C., BA *Washington;* MA *California;* PhD *Oregon*

Faculty of Science

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GENERAL

Dean

A. E. Scott, BSc, PhD *St. Andrews,* Professor of Chemistry

Assistant Dean

W. C. Howell, BSc, MSc, PhD, Associate Professor of Chemistry

Administrative Offices: Room 108, 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 and arranged alphabetically. For further information, reference should be made to the first section of the Calendar and to the booklet, "General Inormation"

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. Regulations applicable to particular programs of study are published under the Departments offering the programs. 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.

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 (see page 308).

Approved areas of concentration are available only in:

Plant Sciences	Mathematics
Computer Science	Zoology
Geology	

Three-Year Programs leading to the BSc degree, and which require concentration in a Major subject, in accordance with the regulations described on page 309. Approved programs are now available in the following subject areas:

Applied Mathematics	Geophysics
Chemistry	Mathematics
Computer Science	Physics

Four-Year Honors Programs leading to an Honors BSc degree (with the exception of Mathematics).

These are available in the following disciplines:

Anatomy	Chemistry
Applied Mathematics	Computer Science
Astronomy	Geology
Bacteriology and Immunology	Geophysics
Biochemistry	Mathematics (Hons. BA)
Biophysics	Physics
Biology (Plant Sciences option)	Physiology
Biology (Zoology option)	Physiology and Pharmacology
	Zoology

Further details of the availability and nature of programs in specific subjects or disciplines will be found in the sections devoted to individual Departments which follow this one.

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. Similarly a student in a Science program may be eligible 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 and final examination time-tables.

Accuracy of Registration. It is the responsibility of the student to ensure the completeness and accuracy of his registration.

First Year

The purpose of the First Year General Program is to offer one year of basic general education and to postpone the selection of a specific program until the second year. Thus the student can make a final decision as to his future program on the basis of university work which will 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 Programs or the second year of one of the Honors Programs.

The First Year General Program in the Natural Sciences is intended to lead primarily to senior Programs offered by the Departments within the Faculty of Science but does not preclude admission to programs in other Faculties (Arts, Engineering Science, Social Science) provided that the 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 1971-72 to the First Year General Program, Natural Sciences, are provided in the "General Information" publication. The basic requirement is

successful completion of Ontario Grade XIII with standing in five subjects. It will be noted that there are no longer any *specific* course requirements for initial admission to the Faculty of Science. Nevertheless students intending to enter Science programs are advised to include in their High School preparation at least two Science subjects to the Grade XIII level. In this regard, Mathematics is of special importance! It must be recognized clearly that although no longer *required* for admission to a First Year Program in the Faculty of Science, Mathematics A, or its equivalent, Mathematics 10, is a mandatory prerequisite for Mathematics 20, 24, 27, Applied Mathematics 20, and Physics 20, 22 and 26, *and that* one or more of these courses are required, or are prerequisites for further courses, in most senior programs in the Faculty of Science. It follows, therefore, that a student admitted to the Faculty of Science lacking standing in Mathematics A must pass *both* Mathematics 10 *and* one of Mathematics 20, 24, 27 or Applied Mathematics 20 *prior* to admission to many Second Year Programs and certainly before completing the requirements for graduation in most Science Programs. At the present time, the only exceptions to this general qualification (outside the unstructured General BA Program) are Honors Zoology and the General BA Programs with Plant Sciences or Zoology Majors. Moreover, it is anticipated that with the introduction of a Three-Year BSc in Biology in September, 1972, these last few exceptions will also be removed.

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 elect 5 courses, with inclusion of at least one from each of two of the Faculties of Arts, Science and Social Science. 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 (i.e., one additional) course may be elected with the permission of the Dean. 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 include among the courses elected, those required to proceed to the second year of the programs and subjects in which he may wish to continue his studies.

Special prerequisites are stated in the listings 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 elect to continue his studies for a further two years in one of two programs leading to either a BA degree or a BSc degree respectively.

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 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 possibility 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.

Significant revisions in the structure and content of the Three Year Programs and certain academic regulations in the Faculties of Arts, Science and Social Science were effected by the Senate of The University of Western Ontario in January, 1970. Below are given the requirements for graduation which are applicable to all students registering in the University for the first time, beginning with the commencement of Summer School 1970. Students registered in the University prior to that date may in some instances elect to graduate in accordance with either the new requirements or the old requirements. Full details of the rules pertaining, including a statement of the old graduation requirements, will be found in the General section of this Calendar.

General Regulations for the BA Degree (New)

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 (New)

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 or approved area of concentration. 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 a minimum average of 60% in the courses counted for graduation and a minimum average of 60% in four senior courses of 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 the accumulation of course credits toward eventual achievement of the graduation requirements. The following Grade Point Scale is employed to determine the minimum level of satisfactory performance for progression in the program:

Letter Grade	Percentage Range	Grade Point
A+	90 - 100	5
A	80 - 89	4
B	70 - 79	3
C	60 - 69	2
D	50 - 59	1
F	0 - 49	0

Following admission to the University and initial registration, continued acceptance of registration for further work is subject to the following limitations:

(a) a student must accumulate a Grade Point Total of at least six in the first five full courses attempted*.

(b) a student must accumulate a Grade Point Total of at least fourteen in the first ten full courses attempted*.

(c) in any event, a student must complete the requirements for graduation in the Three Year Programs within the first twenty full courses (including repeated courses) attempted*.

When any one of the above requirements is not, or cannot, be fulfilled, the student shall be required to withdraw from the University for one year or longer at the discretion of the Senate Admissions Committee.

HONORS PROGRAMS

Subsequent to the First Year General Program, a student may elect to 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 (or Honors BA, 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 meeting 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.

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.**

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*An "attempt" is defined as a course registration recorded with the Registrar which has not been formally cancelled with the Registrar by January 15th of the current academic session.

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 courses listed as principal courses* by the Department(s) of the discipline in which he is specializing and a passing grade in every subsidiary course.

A student who fails to qualify for automatic admission but 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 of 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.

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. Although ultimately personal interviews are most desirable, in many instances minor problems may be solved satisfactorily or adequate information supplied, by correspondence.

FACULTY OF SCIENCE COURSES

The Faculty of Science offers three courses of a general nature which are not associated with any individual Department of the Faculty.

Contemporary Science A. This is a course in the general physical sciences for non-science students. It has no prerequisites and will not be accepted as a prerequisite for other science courses. Much of today's most productive research is interdisciplinary in nature and the treatment will reflect this approach by using guest lecturers to treat certain contemporary issues in science. Enrolment may be limited.
3 lecture/demonstration/laboratory hours – 4

Contemporary Science B. The description and application of this course are the same as those of Contemporary Science A, except that it is in the Life Sciences. Enrolment may be limited.
3 lecture/demonstration/laboratory hours – 4

Science 200. History of Scientific Thought. An introductory course in the development and evolution of scientific ideas from early antiquity to the late nineteenth century, this course is intended primarily as an open option for senior students in Science Programs, but is open to other students as well. This course is presented by the Department of History of Medicine and Science (Faculty of Medicine) in cooperation with the Faculty of Science. Enrolment may be limited.
3 lecture/discussion hours – 18

ANATOMY

Department Chairman

R.C. Buck, MD, MSc; PhD *London*

Departmental Office: MS 472

PROGRAMS

The Department of Anatomy provides an Honors Program, leading to an Honors BSc degree after four years of study.

Requirements for Admission. The admission requirements are determined by the prerequisites of the program selected for the Second Year.

Second Year

One of:
(a) Second Year of Program in Honors Biology
For prerequisite and courses see pages 340 and 342.

(b) Second Year of Program in Honors Chemistry
For prerequisite and courses see page 319.

(c) Second Year of other Honors Programs

With permission of the Department of Anatomy, a student may petition the Vice President (Academic) for recognition of the Second Year of such other Honors Programs as permit inclusion of a course in Organic Chemistry.

Third Year

Principal Courses

Anatomy 300

Two of: Bacteriology 300; Biochemistry 300; Biophysics 300; Physiology 300

One of: Botany 255; Physiology and Pharmacology 301; Zoology 255, 270, 353

Subsidiary Courses

Two options

Mathematics 20, 24 or 27 or Applied Mathematics 20 is required as a subsidiary course of students who have not previously taken a university course in Mathematics.

Fourth Year

Principal Courses

Anatomy 441, 460, 461, 462, 463, 464, 480; Bacteriology and Immunology 440 (History of Scientific Ideas)

Subsidiary Courses

Two options selected with the advice of the Department of Anatomy. One of Mathematics 255, Botany 300, Psychology 255 or Zoology 465 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.
3 hours a week – 29

300. Histology. Survey of mammalian cytology and microscopic anatomy for Honors students.
2 lectures, 3 laboratory hours – 1

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.
2 lectures – 7

461. Cell Structure. Cytology and histology with emphasis on techniques and recent developments, especially in electron microscopy.
Prerequisite: Anatomy 300 or equivalent.
2 lectures, one term (half course) — 13

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 mammalian 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

APPLIED MATHEMATICS

Department Head

J.H. Blackwell, BSc *Melbourne;* MSc, PhD *UWO*

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.

BSc Honors Program

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 grades required for admission and progression see page 309.

Second Year*

Principal Courses

Applied Mathematics 200, 202
Mathematics 256
Physics 250, 264, 265

Subsidiary Course

One option

Third Year*

Principal Courses

Applied Mathematics 300, 350, 351b, 361a
Two of: Mathematics 350, 356, Physics 353, 357

Subsidiary Course

One option

Note: 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 from the Department.

Fourth Year*

(1) Continuum Mechanics Option

Principal Courses

Applied Mathematics 400, 403b, 420, 452
Two of: Applied Mathematics 453, 454, 460, Physics 353**

(2) Theoretical Physics Option

Principal Courses

Applied Mathematics 400, 403b, 420, 454
Two of: Applied Mathematics 452, 460, Physics 353 or Physics 462 and 467**

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. For general regulations for the three-year BSc degree see page 309.

Second Year

Applied Mathematics 200, 202
Physics 252, 256

One option

Third Year

Applied Mathematics 300, 340
Three options

Note: (1) It is strongly recommended that Computer Science 37 or 200 and Physics 357 be included among the options selected.

(2) In consultation with the Department of Applied Mathematics, some substitutions may be made in this program.

*Students should consult the Department before choosing their principal course or subsidiary course options.

**With the approval of the Department other principal course options may be substituted.

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 Departmental 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, and in the Social Sciences. Two of the hours are devoted to a problems period during which time students receive individual attention.
Prerequisite: Grade 13 Mathematics A or Mathematics 10
4 hours — 29

200. Advanced Calculus and Vector Analysis. Three dimensional analytic geometry, functions of several variables, partial derivatives, extrema including the use of Lagrange multipliers, Taylor's formula, Jacobians, multiple integrals, integral theorems, vector fields, sequences and series.
Prerequisite: A minimum grade of C in Applied Mathematics 20 or Mathematics 24 or Mathematics 27
Corequisite: Applied Mathematics 202
3 hours — 30

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 is included.
Prerequisite: A minimum grade of C in Applied Mathematics 20 or Mathematics 24 or Mathematics 27
3 hours — 4

270. Engineering Mathematics II. For Second Year Engineering Science students and for certain other Science students. Elementary differential equations and complex numbers, an introduction to determinants, matrices and the solution of simultaneous linear equations, vectors and an introduction to vector calculus, partial differentiation, multiple integrals, Taylor's theorem and an introduction to infinite series and power series.
Prerequisite: Applied Mathematics 20 or Mathematics 24 or Mathematics 27
3 hours — 20

300. Methods of Applied Mathematics I. Introduction to the theory of ordinary and partial differential equations, solutions of ordinary differential equations with variable coefficients and the special functions of mathematical physics, orthogonal function expansions, eigenvalue or boundary value problems, solutions of partial differential equations of mathematical physics, functions of a complex variable, stressing their applications to the physical sciences.
Prerequisites: Applied Mathematics 200 and 202 or Mathematics 250 and 278.
4 hours — 1

340. Numerical Analysis and Statistics. An introduction to numerical analysis and applied statistics. The course is made up of the material of two half courses, Applied Mathematics 361a and Applied Mathematics 403b.
Prerequisites: Applied Mathematics 200 and 202 or Mathematics 250 and 278.
3 hours — 14

350. Advanced Classical Dynamics. A logically connected development of classical mechanics including a thorough treatment of Lagrangian and Hamiltonian methods.
Prerequisites: Physics 250, Applied Mathematics 200 and 202
3 hours — 12

351b. Introductory Fluid Dynamics. An introduction to Fluid Dynamics, with principal emphasis on ideal fluid theory.
Corequisite: Applied Mathematics 300
3 hours for one term — 7

360. Numerical Analysis. Accuracy of approximate calculations, interpolation, summation of series, numerical differentiation and integration, solution of numerical algebraic and transcendental equations, numerical solution of ordinary differential equations, least squares and harmonic analysis, numerical solution of simultaneous linear equations. Students are encouraged to use the digital computer.
Prerequisites: Applied Mathematics 200 and 202 or Mathematics 250 and 278
3 hours — 14

361a. Numerical Analysis. An introduction of Numerical Analysis and its applications, being the first term of Applied Mathematics 360.
Prerequisites: Same as for Applied Mathematics 360
3 hours for one term — 14

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; also included are continuations of the topics of linear algebra and infinite series from Applied Mathematics 270 and Fourier Series methods.
Prerequisite: Applied Mathematics 200 or 270
3 hours — 26

380. Applied Mathematics for Chemists. Vector calculus, infinite series and power series, solutions of ordinary differential equations including Bessel and Legendre functions, Fourier series and orthogonal function expansions, partial differential

equations, linear algebra, and elementary probability theory.
Prerequisite: Applied Mathematics 200 or 270
3 hours – 1

For each course numbered from 400 to 454, except for 403b, 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, integral transforms, special topics in complex variable theory, an introduction to asymptotic expansions, tensor analysis.
3 hours – 19

403b. Applied Statistics. A course in statistics for application. Topics included are: elementary probability theory, random variables, probability distributions, sampling theory and decision making, curve fitting and experimental design.
Prerequisite: A course in calculus
3 hours for one term (half course) – 6

420. Electrodynamics. Electrostatics from a Green's function point of view, magnetostatics, derivation of macroscopic electromagnetic fields from microscopic ones, time varying fields, Maxwell's equations, conservation laws, simple radiating systems, diffraction, special theory of relativity, relativistic particle kinematics, radiation by accelerating charges, multipole fields.
3 hours – 24

452. Fluid Dynamics. An advanced course in Fluid Dynamics divided approximately equally between viscous fluid flow and gas dynamics.
3 hours – 28

453. Solid Mechanics. A first course in the theory of the mechanics of the solid continuum, including elasticity and plasticity.
3 hours – 22

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 – 3

460. Advanced Numerical Analysis. A sequel to Applied Mathematics 361a, with particular attention given to the techniques requried for numerical solution of ordinary and partial differential equations.
Prerequisite: Applied Mathematics 361a
3 hours – 9

470. Engineering Mathematics IV. A sequel to Applied Mathematics 370. It includes the following topics: vector calculus including the integral theorems, ordinary differential equations with variable coefficients, orthogonal function expansions, an introduction to partial differential equations, elementary probability theory, random variables and probability distributions, sampling theory and decision making, curve fitting and experimental design.
Prerequisite: Applied Mathematics 370
3 hours – 24

ASTRONOMY

Department Head

W. H. Wehlau, AB, PhD *California;* Director of the Observatories

Departmental Office: 1383-89 Western Road, G-15

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. For grades required for admission and progression see page 309.

Students entering or continuing in the Honors Astronomy Program are required to consult with the Department for approval of their programs.

Second Year

Principal Courses

Astronomy 220

Applied Mathematics 202 or Mathematics 250

Applied Mathematics 200 or Mathematics 278

Physics 250, 254, 255

Subsidiary Course

German 5 or Russian I*

Third Year

Principal Courses

Astronomy 320

Applied Mathematics 300

Applied Mathematics 350 or Physics 360

Physics 353, 357

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*In special circumstances alternative courses may be chosen with permission of the Department.

One additional Applied Mathematics or Physical Science Course at the 300 or 400 level

Subsidiary Course

German 35 or Russian 35*

Fourth Year

Principal Courses

Astronomy 420

Applied Mathematics 420 or Physics 465 and another half course

Applied Mathematics 454 or Physics 451 and another half course

Two additional courses at the 300 or 400 level, from Applied Mathematics, Geophysics, Mathematics or Physics

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 hours – 13

21. General Astronomy. Astronomy as a science including its historical development. Topics to be covered include Newton's laws of inertia, force and gravitation and Kepler's laws of motion; the solar system: planets, earth, sun, moon, comets, meteors; light, spectra, and astronomical equipment including radio and optical telescopes; stars: their nature, distances, motions, size, composition and evolution; star systems– open and globular star clusters, the milky way, stellar populations, and galaxies; the interstellar material: its density, composition and structure including types of nebulae; the universe, cosmology; selected topics of current interest. Quantitative development of the topics required will be given occasional evening observations with the 6-inch refractor.
3 hours – 13

HONORS COURSES

220. Astronomy II. Fundamental astronomy; computing; elementary orbit theory; binary stars. Prerequisite: Astronomy 20 or permission of the instructor
2 hours – 1

*In special circumstances alternative courses may be chosen with permission of the Department.

320. Astrophysics I. Radio Astronomy and Interstellar Material– Maxwell's equations, wave motion, emission and absorption of radiation; Fourier transforms, antennas, interferometers and radiation coherence; gas and dust in interstellar space studied by optical and radio methods, diffuse and reflection nebulae,interstellar clouds and magnetic fields.
3 hours – 6

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 hours – 11

BACTERIOLOGY AND IMMUNOLOGY

Department Head

R. G. E. Murray, BA, MA *Cantab;* MD, CM *McGill;* FRSC

Departmental Office: MS 352

PROGRAM

A program is offered by the Department leading to an Honors BSc (Bacteriology and Immunology). The Honors work in the Department begins in the third year.

Requirements for Admission. The admission requirements are determined by the prerequisites of the program selected for the Second Year.

Second Year

Either

(a) Second Year of Program in Honors Biology.
For prerequisites and courses see pages 340 and 342.

or

(b) Second Year of other Honors Programs.
With permission of the Department of Bacteriology and Immunology, a student who has completed First Year General Programs (Arts or Social Sciences), may petition the Dean of Science for recognition of the Second Year of such other Honors Programs as permit inclusion of a course in Organic Chemistry.

Third Year

Principal Courses

Bacteriology 300

Biochemistry 300

One course from each of the following groups

(a) Anatomy 300, Biophysics 300 or Physiology 300

(b) Botany 342, 353, Physiology and Pharmacology 301, Chemistry 353, 354 or Zoology 370

Subsidiary Courses

Two options
Mathematics 20, 24, or 27 or Applied Mathematics 20 is required for students who have not previously taken a university course in Mathematics.

Fourth Year

Principal Courses

Bacteriology 440, 441, 460, 461a, 462b, 467a, 470a, and 480

One of: 465, 472b, or an additional course at the Honors level approved by the Department.

Subsidiary Courses

One of Botany 300, Psychology 255, Zoology 465 or Mathematics 255 if a suitable course in Statistics has not been taken previously.

SPECIAL DEPARTMENT REQUIREMENTS AND ADVICE

(a) Mathematics 20, 24 or 27 or Applied Mathematics 20 is required for students who have not previously taken a university course in Mathematics.

(b) Students should note the specific prerequisites for Biochemistry 300.

(c) 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

Prerequisites for the Fourth Year course: Successful completion of previous year's program or permission of the Head of the Department.

300. Microbiology. A comparative study of the morphology, biology and relationships of algae, bacteria, fungi, protozoa and viruses. Given in collaboration with the Department of Botany (Botany 351).
2 lectures, 3 laboratory hours — 16

440. History of Scientific Ideas. A history of scientific ideas given in collaboration with other Health Science Departments.
2 lectures (half course) — 1

441. Seminar. The presentation of scientific reports and the writing of an essay on an assigned topic.
2 lectures (half course)

460. Advanced Microbiology. An advanced treatment of the biology and physiology of microbes with particular emphasis on the bacteria and their viruses.
2 lectures — 22

461a. Microbial Anatomy. A survey of cytological methods and applications to the understanding of the structure of procaryotic organisms and fungi.
2 lectures (half course) — 9

462b. Virology. A survey of the structure and function of microbial, animal and plant viruses.
2 lectures (half course) — 13

465. Microbial Biochemistry. Topics involving the biochemical activites and process of microbes.
Prerequisites: Biochemistry 300, 406 or 456
2 lectures (half course) — 5

467a. Microbial Genetics. Aspects of genetics applied to microorganisms. Given in Collaboration with the Department of Botany (Botany 455).
2 lectures, 2 laboratory hours (Half Course) — 26

470a. Immunology. A course concerned with immunological theory and interpretation of basic and medically applied immune phenomena. (Given in collaboration with the Department of Medicine)
2 lectures (half course) — 17

472b. Immunochemistry. An advanced course dealing with the chemical structure of antigens and antibodies. Given in conjunction with a laboratory where students will become familiar with immunochemical techniques.
Prerequisite: Bacteriology and Immunology 470a or its equivalent.
2 lectures, 2 laboratory hours (half course) — 32

480. Laboratory and Tutorial. To give training in the techniques employed in modern microbiology with emphasis upon individual effort and resourcefulness. The tutorial will provide an opportunity for staff-student discussion and supplementation of both laboratory and lecture topics. Designed to accompany the lectures of Bacteriology 460, 461a, 462b and 465.
Minimum of 10 hours.

BIOCHEMISTRY

Department Chairman

H. B. Stewart, MD, PhD *Toronto;* PhD *Cantab*

Departmental Office: MS 316

The Department of Biochemistry offers undergraduate programs in the Faculties of Medicine, Dentistry and Nursing as well as those outlined below.

PROGRAMS

An Honors Program leading to the BSc degree is offered.

REQUIREMENTS FOR ADMISSION

The admission requirements are determined by the prerequisites of the program selected for the Second Year.

Students who plan to continue into graduate studies are advised to select options which will satisfy the foreign language credit required by many graduate schools.

Second Year

One of:

(a) Second Year of Program in Honors Biology. For prerequisites and courses see pages 340 and 342*. Note that one of Applied Mathematics 20, Mathematics 20, 24 or 27 will be required.

(b) Second Year of Program in Honors Chemistry For prerequisites and courses see page 319*.

(c) Second Year of other Honors Programs
With permission of the Department of Biochemistry, a student may petition the Dean of Science for recognition of the Second Year of such other Honors Programs as permit inclusion of a course in Organic Chemistry.

Third Year

Principal Courses

Biochemistry 300

Three of:

Anatomy 300
Bacteriology 300 (Botany 351)
Biophysics 300
Physiology 300
Botany 255 (Zoology 255)
Chemistry 351*
Chemistry 353*
Chemistry 354*
Physiology 301 (Pharmacology 301)

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

Biochemistry 440

Biochemistry 460

Biochemistry 461

Biochemistry 464

Biochemistry 468

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.

*Accompanied by the appropriate laboratory course.

COURSES

46. General Biochemistry. A survey course for General Program students.
Prerequisites: Chemistry 33 or 203
2 lectures, 3 laboratory hours – 9

Honors Courses

300. General Biochemistry. A survey for Honors students.
Prerequisites: Chemistry 203, 253 or 313; Chemistry 204, 254 or 214
3 lectures, 2 laboratory hours – 28

400b. Biochemistry. A survey of primarily metabolic aspects of biochemistry for students in Honors Chemistry (Given in conjunction with the Department of Chemistry).
Prerequisite: Chemistry 456
3 lectures one term only (half course) – 28

406. General Biochemistry. A survey for students in Honors Biology.
Prerequisites: Chemistry 33 or 203
2 lectures, 3 laboratory hours – 9

440. History of Scientific Ideas. 26 lectures on the History and Development of Scientific Methods.
2 lectures one term only (half course)

460. Metabolism. An advanced treatment of intermediary metabolism.
Prerequisites: Biochemistry 300, 406 or 400
2 lectures – 14

461. Structure and Metabolism of Nucleic Acids. A discussion of the role of the nucleic acids in protein synthesis.
Prerequisites: Biochemistry 300, 406 or 400
2 lectures – 9

463b. Current Topics. A discussion of contemporary topics in the field of biochemistry.
Prerequisites: Biochemistry 300, 406 or 400
2 lectures, one term only (half course) – 20

464b. Enzymology. A survey of the principles of mechanism and function of enzymes.
Prerequisites: Biochemistry 300, 406 or 400
2 lectures one term only (half course) – 17

468a. Physical Biochemistry. A discussion of the physicochemical properties of macromolecules of biological interest.
Prerequisites: Biochemistry 300 or 400
2 lectures one term only (half course) – 36

480. 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

BIOPHYSICS

Department Chairman

Margot R. Roach, BSc *New Brunswick;* MD, CM *McGill;* PhD, FRCP(C)

Departmental Office; MS 122

PROGRAMS

The Department of Biophysics offers an Honors Program leading to an Honors BSc degree after four years of study.

Requirements for Admission. The admission requirements are determined by the prerequisites of the program selected for the Second Year, except that Mathematics 24 or 27 or Applied Mathematics 20 and Physics 20 should have been included in the First Year.

Each student planning to enrol in the Department of Biophysics should consult with the Department as soon as possible (even during first year). This will allow for maximum benefit to be derived from counselling.

All course selections must be made with the approval of the Chairman of the Department of Biophysics. During undergraduate training, the students should take at least one Physical Chemistry course, as much Mathematics or Applied Mathematics and as much Physics as possible.

Concerning the selection of an option in the Second and Third Year, students who plan to continue into graduate studies are advised to select courses which will satisfy the credit in a language other than English required by many graduate schools.

Second Year

One of:

(a) Second Year of Program in Honors Physics
For prerequisites and courses see page 334.

(b) Second Year of Program in Honors Biology
For prerequisites and courses see pages 340 and 342.

(c) Second Year of Program in Honors Chemistry
For prerequisites and courses see page 319.

(d) Second Year of other Honors Program. With the permission of the Department of Biophysics, a student who has completed the First Year of the General Program (Natural Sciences) may petition the Dean, Faculty of Science, for recognition of the Second Year of other Honors Programs.

Third Year

Principal Courses

Biophysics 300

Biophysics 301*

One course from List A and two from the combined Lists A and B

List A: Anatomy 300
Bacteriology 300/Botany 351
Biochemistry 300
Physiology 300
Zoology 352

List B: *Applied Mathematics 270*
Physics 256
Chemistry 254 or 204
or other Honors Science courses at the 200 or higher level approved by the Department.

Subsidiary Course

One option

Fourth Year

Principal Courses

Biophysics 440, 441, 460, 461a, 462b, 463a, 464b, 480

Subsidiary Courses

Mathematics 255 (unless approved course in statistics already taken). One Natural Science, Mathematics, Applied Mathematics or Health Science course at the 200 or higher level.

HONORS COURSES

300. General Biophysics. A survey of the Physics of living things.
2 lectures, 3 laboratory hours – 8

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*Students may be permitted, in special cases, to defer this course until 4th year and to substitute another course from Lists A and B.

301. 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. A knowledge of first year calculus is assumed.
2 lectures – 20

440. History. History of scientific ideas – given in collaboration with other departments.
2 lectures (half course) – 2

441. Research Topics and Seminar. The presentation by students of scientific reports on laboratory projects and selected topics from the scientific literature.
1 lecture (half 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. Investigative tools and techniques.
2 lectures – 10

461a. Bioelectrical Phenomena. Bioelectric potentials, excitability and conduction, mechanism of biological transducers, and cybernetics.
2 lecturers (half course) – 15

462b. Radiobiology and Molecular Biophysics. [Given in collaboration with the Department of Botany (Botany 459b)]: Nature and effects of electromagnetic radiations on biomolecular structure and on living cells. Applied radiobiology and radioecology.
2 lectures, 1 laboratory hour – 6

463a. 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.
2 lectures (half course) – 30

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 theremodynamics.
2 lectures (half course) – 20

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

CHEMISTRY

Department Head

H. C. Clark, BSc, MSc, PhD *Auckland;* PhD *Cantab*

Departmental Office: CB 119

PROGRAMS

The Department of Chemistry provides both an Honors Program, leading to an Honors BSc degree after four years of study, and a Program leading to a BSc degree after three years of study. In either case 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.

BSc Honors

Requirements for Admission. A First Year General Program including Chemistry 20, Physics 20, and one of Applied Mathematics 20, Mathematics 24 or Mathematics 27, with all courses of the program as principal courses. Engineering Science I will be accepted as an equivalent First Year Program.

For grades required for admission and progression see page 5. Admission is granted automatically to those completing first year with a grade average of 70% with no course grade below 60%. Students who fail to qualify for automatic admission but who complete the first year with a grade average of 60% or greater **should apply** to the Department for consideration.

Students who fail to obtain the standing necessary for continuance in Honors, or decide not to continue in Honors, may transfer to the Three Year Program, but must meet all requirements of that program.

Students who plan to continue into graduate studies are advised to select options which will satisfy the foreign language credit required by many graduate schools.

Second Year

Principal Courses

Chemistry 250, 252, 254

Applied Mathematics 270

Physics 253

Subsidiary Course

One option

(Physics 250 and 256 may be elected instead of Physics 253 and an option)

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 355, 358 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 355, 358, 384, 451, 453, 454, 456, 474

Biochemistry 400b

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

BSc Degree (Three Year Program)

Requirements for Admission. A First Year General Program which includes Chemistry 20, Physics 20, 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.

Admission to this program will be granted **only after consultation** with the Department **prior** to registration.

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 a minimum of **four** senior courses in Chemistry but may include additional ones. In any event, the Program must include Chemistry 250, 252, and 254, all to be taken in the Second Year, and Physics 253. In addition the inclusion of Applied Mathematics 270, or its equivalent is strongly recommended.

A typical selection of courses is outlined below:

Second Year

Chemistry 250, 252, and 254

Applied Mathematics 270 or Mathematics 34

Option

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.

COURSES

20. General Chemistry. Primarily for students in First Year General Program (Natural Sciences) or First Year Engineering Science.
2 lectures, 3 laboratory hours — 25

21. General Chemistry. A terminal course for students not intending to specialize in Science.
2 lectures, 1½ tutorial and laboratory demonstration hours — 25

25. General Chemistry. For students in Home Economics and Nursing Programs only.
Prerequisite: Grade 13 Chemistry
2 lectures, 3 laboratory hours — 27

33. Organic Chemistry. For students in Home Economics and Nursing Programs only.
Prerequisite: Chemistry 25
Half course — 2 lectures, 3 laboratory hours— 1st term only — 25

203. Organic Chemistry. Intended primarily for students in Honors Biology and students interested in programs in the Health Sciences.
Prerequisite: Chemistry 20
2 lectures, 3 laboratory/tutorial hours — 23

204. Physical Chemistry. For students in Honors Biology. (Familiarity with calculus is desirable for this course.)
Prerequisite: Chemistry 20
2 lectures, 1½ laboratory hours — 2

211. Principles of Inorganic Chemistry. The application of current structural ideas and valence theory to inorganic systems. The laboratory work will involve the preparation and characterization of inorganic compounds. For students in Chemical Engineering Science.
Prerequisite: Chemistry 20
2 lectures, 3 laboratory hours – 6

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 and a full course in calculus
3 lecture hours – 12

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 – 13

252. Experimental Chemistry. For students primarily in Chemistry Programs.
Corequisite: Chemistry 250
8 laboratory hours – 2

254. Elementary Physical Chemistry. An introduction to kinetic theory and thermodynamics. For students in Chemistry Programs.
Prerequisite: Chemistry 20 and a full course in calculus
3 lecture hours – 8

314. Intermediate Physical Chemistry. For Chemical Engineering students. Content similar to Chemistry 354.
2 lectures first term, 3 lectures second term, 1½ laboratory hours

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
Half course, 1 lecture first term, 2 lectures second term – 4

352. Chemical Spectroscopy. Fundamental features of molecular spectroscopic methods including ultraviolet, visible and infrared spectroscopy, magnetic resonance and mass spectroscopy.
Half course – 2 lecture hours – first term only – 26

353. Intermediate Organic Chemistry. For students in Chemistry Programs.
Prerequisites: Chemistry 250 and 252
2 lectures

354. Intermediate Physical Chemistry. Chemical thermodynamics, phase equilibria and electrochemistry. For students in Chemistry Programs.
Prerequisite: Chemistry 254 and Applied Mathematics 270 or equivalent
Prerequisite or corequisite: Physics 253
2 lectures first term, 3 lectures second term
1½ laboratory hours – 7

355. Isotope Chemistry. Radioactivity, stable and radioactive isotopes. Nuclear reactions. Separation and preparation of isotopes. Uses of isotopes as tracers. Unstable elements.
Prerequisites: Chemistry 250, 211 or 203
2 lectures one term only (half course) – 10

358. Industrial Chemistry. Industrial applications of chemistry with emphasis on heat and mass transfer aspects. For students in Chemistry Programs.
Prerequisites: Chemistry 250, 211 or 203
2 lectures one term only (half course) – 22

361. Inorganic Chemistry Laboratory. For students in Chemistry Programs.
Corequisite: Chemistry 351
4 laboratory hours – half course

363. Organic Chemistry Laboratory. For students in Chemistry Programs.
Corequisite: Chemistry 353
4 laboratory hours – half course

364. Physical Chemistry Laboratory. For students in Chemistry Programs.
4 laboratory hours – half course

374. Quantum Chemistry I. An introduction to the theory of atomic and molecular structure.
Prerequisite: Applied Mathematics 270, or equivalent
2 lecture hours – 20

384. Chemical Kinetics. Modern theories and techniques; elementary processes; fast reactions; reactions in solution and at electrodes.
Prerequisite: Chemistry 254
1 lecture, half-course – 14

451. Advanced Inorganic Chemistry. Selected topics.
3 lecture hours – 3

453. Advanced Organic Chemistry. Selected topics.
Prerequisite or corequisite: Chemistry 353 and 363
3 lecture hours – 16

454. Advanced Physical Chemistry. Statistical thermodynamics.
2 lecture hours – 19

456. Bio-organic Chemistry. Organic Chemistry of biological molecules; mechanisms of enzyme catalyzed reactions; chemical basis of enzyme action.
2 lectures one term only (half course)

459. Experimental Chemistry and Seminar.
12 laboratory hours

474, Quantum Chemistry II. A continuation of Chemistry 374.
2 lecture hours — 31

COMPUTER SCIENCE

Department Chairman

J.F. Hart, BA, MA, PhD *Toronto*

Departmental Office: Engineering Science Building

Computer Science is the study of the structure, operation and use of the modern digital computer. It is also concerned with the paradigmatic relationship of machine function to biological and social behavior. Programing experience is expected prior to admission to Second Year. Mathematics courses including Algebra, Calculus and Statistics are recommended to be taken in parallel with or prior to a program os studies in Computer Science.

PROGRAMS

Note: Students proceeding with a major in Computer Science are required to consult the Department in their choice of courses.

General BA

There are no restrictions other than those imposed by the requirements for the BA Degree. Note however, that there are prerequisites for most senior Computer Science Courses.

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 (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 be included among the senior Mathematics courses selected. (Economics 35 may be substituted for Mathematics 35).

(c) *Computer Science students in the General* BA or Three Year BSc are advised to follow one *of the three thematic directions:* Systems Analysis, Computer Systems, or Education. Lists of courses considered suitable for these themes may be obtained from the Department.

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 one other principal course.*

(b) Program Structure

Caution: *All* students entering 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 Courses

One option
One option from the Natural Sciences

Third Year

Principal Courses

Computer Science 304, 313
Two Mathematics or Applied Mathematics courses at the 300 level

Subsidiary Course

One option

*While Computer Science 20 is the normal prerequisite, in some instances, the Department may permit registration without Computer Science 20 but only after satisfactory completion of a two week non-credit course starting immediately prior to registration.

*While Computer Science 20 is the normal prerequisite, in some instances, the Department may permit registration without Computer Science 20 but only after satisfactory completion of a two week non-credit course starting immediately prior to registration.

Fourth Year

Principal Courses

Two of: Computer Science 403, 404, 405
One 400 level course in Applied Mathematics, Mathematics, or Mathematics 350
One 300 or 400 level course from Natural Science or Social Sciences or one 400 level course in Computer Science.

Subsidiary Course

One option

(c) The Honors Program is for students who wish to concentrate on Computer Science and Mathematics and who may wish to continue in graduate studies and research, advanced computer systems analysis, scientific programming, or toward the specialist Certificate in Education.

COURSES

20. Computer Science. This course provides an over-all view of the entire field of Computer Science. The course consists of three components: Programing and applications, development and design of computers, and theoretical aspects. Students will have an opportunity to solve problems on the computer and to consider applications to science, business and education. They will study the over-all design of computers and some specific logical design techniques. In addition, students will study more theoretical aspects of the subject relating to the nature of machines and information, general systems, cybernetics and automata.

Prerequisite: Grade 12 mathematics or equivalent
3 lectures, 1 laboratory hour – 6

30. Computer Science. A survey of developments in Computer Science. Selected parts from the following three main topics: present and future impact of computers (general trends in applications, the information utility, computer-assisted instruction, automation and machine intelligence), computer programing techniques to non-numerical problems (i.e. computer assisted instruction, simulation); introduction to the theory of automata and computation and its implications to other disciplines (i.e. biology, philosophy, psychology).
Prerequisite: Computer Science 20 and a first year course in Mathematics at the 20 level
2 lectures, 2 laboratory hours – 18

31. Elements of Information Processing. A comprehensive course on the use of computers in data processing application for students who desire a career in the commercial use of computers. This is the basic course in the Systems Analysis theme and is divided into two phases. Phase I includes such topics as advanced problem solving, the COBOL language, computer design and communication concepts. Phase II covers System Analysis and the design of Information Systems.
Prerequisite: Computer Science 20*
2 lectures, 2 Laboratory hours – 6

34. Digital Computer Programing. An intensive course in computer programing. Emphasis on a compiler language and its applications to computer-oriented statistics, numerical analysis, simulation and other problems.
Prerequisite: Computer Science 20* and a first year course in Mathematics at the 20 level
3 lectures, 1 laboratory hour – 26

37. Digital Computer Programing. An intensive course in computer programing for students not majoring in Computer Science. Emphasis on a standard computer language (FORTRAN) and its application to computer-oriented statistics, numerical analysis, simulation and various problems in the humanities and the social sciences.
Prerequisite: A first year course in Mathematics at the 20 level.
2 lectures, 2 laboratory hours – 26

Note: For students who have not taken CS20.

41. Advanced Information Processing. Students are required to complete one major Electronic Data Processing project during the year. Lecture topics include: the study of the COBOL language, sorting, file maintenance and information retrieval, simulation, real time systems, time sharing.
Prerequisite: CS 31 or COBOL language
2 lectures, 2 laboratory hours – 34

42. Scientific Applications of Digital Computers. The structure and basis of algorithms for solving scientific problems on the computer. Topics in numerical methods, applied statistics and operations research, e.g., solution of sets of linear equations and differential equations, regression analysis and test of hypotheses, simulation, linear and dynamic programming.

Prerequisite: A Computer Science course and one of Mathematics 30, 34, 35
2 lectures, 2 laboratory hours – 10

43. Computer Logic and Programming. Theory of Boolean Algebra and switching circuits, basic logical elements of digital computer, logical design of computer components, software systems – compilers, interpreters, monitor systems, design of languages.
Prerequisite: A course in Computer Science or Mathematics
2 lectures, 2 laboratory hours – 20

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*While Computer Science 20 is the normal prerequisite, in some instances, the Department may permit registration without Computer Science 20 but only after satisfactory completion of a two week non-credit course starting immediately prior to registration.

200. Digital Computer Programing. An intensive course in computer programing and algorithms. Includes advanced FORTRAN, numerical and statistical techniques, information processing, COBOL, computer hardware and software.
Prerequisites: Computer Science 20* and a first year course in Mathematics at the 20 level
3 lectures, 1 laboratory hour – 26

206. Computational Mathematics. A study of the mathematics and mathematical systems relevant to machine theory. Topics included are number systems, codes, Macro 10 and DDT programing, as well as Boolean Algebra and theory of automata. A seminar dealing with computer applications is associated with the course.
Prerequisite: Computer Science 20* and a first year course in Mathematics at the 20 level.
2 lectures, 2 laboratory hours – 26

Prerequisite: CS 206 or equivalent

304. Advanced Operating Systems. This is a system programming course providing background and experience in connection with large scale computer utilities. A detailed exposition of modern computer hardware and software is accompanied by laboratory exercises in the design of a specific system function.
Prerequisite: CS 206 or equivalent.
2 lectures, 2 laboratory hours – 19

313. Computer Logic and Design. Theory of Boolean Algebra, and switching circuits, basic logical elements of the digital computer, logical design of computer components, theory of automata.
Prerequisite: A senior course in Mathematics
2 lectures, 2 laboratory hours – 7

403. Introduction to Computing Algorithms. Algorithmic aspects of traditional problems in numerical analysis.
2 lectures, 2 laboratory hours – 5

404. Theory of General Systems. A study of the mathematical theories related to General Systems and their applications in Computer Science.
3 hours – 23

405. Simulation Laboratory. Construction of mathematical models of various natural and social systems and their computer solutions. Monte Carlo methods, simulation languages. A knowledge of computer programming and statistics is required.
2 lectures, 2 laboratory hours – 2

*While Computer Science 20 is the normal prerequisite, in some instances, the Department may permit registration without Computer Science 20 but only after satisfactory completion of a two-week non-credit course starting immediately prior to registration.

413. Non-Numeric Computing. One semester of programming techniques for non-numeric computation, including translation of algebraic languages, and artificial intelligence programs; one semester on Theory of Computability, i.e., Turing machine and recursive function theory, mathematical machine theory and formal language theory.
Prerequisite: Mathematics 350 (Taken previously or concurrently), and Computer Science 200 or equivalent.
2 lectures, 2 laboratory hours – 17

GEOLOGY

Department Chairman (Acting)

A.E. Beck, BSc *London;* PhD *Australian National U.*

Departmental Office B&G 128

PROGRAMS

General BA Program

Students may complete a Three Year General Program for a BA degree with a Geology major by completing four or more Honors courses. Normally Geology 20 or Geology 21 with a B minimum are prerequisite for second year courses. The 400 category courses are primarily for Honors students. Before starting the program, the student should discuss his objectives with the Head of the Department.

Honors BSc Program

Requirements for admission: First Year General Program (Natural Sciences). The Honors Geology student should select Geology 20, Chemistry 20, Applied Mathematics 20 or Mathematics 24 or 27, and either Physics 20 or Biology 22. The following are considered alternates to corresponding courses listed above: Mathematics 20, Physics 22, Botany 20 or Zoology 20. Any three Natural Sciences courses will be considered the principal courses. The Honors Geology student should have completed at least one elementary university course in each of Chemistry, Physics, Mathematics and Biology before entering the Third Year.

Before registering in the Second, Third and Fourth Year, the Honors student should consult with the Head of the Department or his deputy. Generally the courses of one year are requisite for courses in the next year. Students should have completed at least one summer of field experience before entering the Fourth Year. For grades required for admission and progression see page 309.

Second Year

Principal Courses

Geology, 200, 210, 219, 275

Subsidiary Courses

Two of: Chemistry 214; Applied Mathematics 270; Zoology 265

One of: Physics 20; Biology 22 or Physics 256*

*Students who are still contemplating Geophysics (II) should elect Physics 256, Chemistry 214, and Applied Mathematics 270.

Immediately after final examinations, the Department conducts a field camp (Geology 200, 300) up to ten day's duration in which Second and Third Year students are required to attend. The cost of each session will not exceed $60.

Third Year

Principal Courses

Geology 300, 320, 340, 350, 360, 367

Subsidiary Courses

One of: Option of the Second Year, Chemistry 354, Computer Science 34, Geography 431, Zoology 270

OR

An elementary or intermediate course in Scientific German, Russian or French

OR

An Arts or Social Sciences course

Fourth Year

Principal Courses

Geology 400

Three of: Geology 415, 420, 425, 430, 450, 463, 475; Geophysics 365; Engineering Science 426

Subsidiary Courses

One of: an advanced science course, including Geology

OR

Intermediate course in scientific language

OR

An Arts or Social Science course

A student may substitute a science course in a closely related field for one selected Geology course provided permission is given by 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 – 34

21. Geological Science. A survey of the earth sciences with emphasis on geology; present day processes operating within and upon the earth's surface, and the earth's history as documented in the rocks.

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 – 34

200. Mapping Procedures. Involving aerial photo interpretation, pace and compass techniques. Emphasis on lithological examinations.
Prerequisite: Two Honors courses including Geology 219
Offered at field camp: (Half course)

210. Introductory Mineralogy and Crystallography. Symmetry, Stereographic projection, Derivation of the crystal classes, Systematic morphological crystallography, Practical determination of point group symmetry, Chemical Bonding and packing models, Structural chemistry and paragenesis of the rock forming minerals and their identification *in hand specimen and thin section.*
2 lectures, 3 laboratory hours – 5

Note: Restricted to Honors Students.

211. Materials of the Earth. An introduction to Mineralogy and Petrography including the use of the petrographic microscope. A discussion of the more important aspects of Petrology, Stratigraphy and the concept of geologic time. Primarily for Geophysics 1 (Physical) students.
2 lectures + 1 hour per week extra for those who have not had Geology 20 – 16

219. Optical Mineralogy and Petrography. Light transmission in minerals, Mineral identification using the polarizing microscope, Lithology and spatial distribution of rock bodies. Structural geology, map interpretation, and stereographic projection.
2 lectures, 3 laboratory hours – 13

275. Invertebrate Paleontology. Classification, Morphology and Ecology; Evolution, Index Fossils and their geologic and geographic ranges, some Plants and Vertebrates.
2 lectures, 3 laboratory hours – 27

300. Field Investigation. The chief emphasis will be on structural geology and igneous, metamorphic and sedimentary geology. Geology of the Huronian and rocks of the Sudbury basin. Geophysical, economic and Pleistocene field studies are included.
Prerequisite: Geology 20 and at least 4 Honors courses
Offered at field camp (half course)

311. Resources of the Earth. Concepts of Geology emphasizing sedimentary and tectonic structures favorable for the localization of petroleum and mineral deposits, Geochemistry and the study of mineral deposits emphasizing their physical characteristics as targets for the exploration geophysicist.
Primarily for Geophysics I (Physical) students
2 lectures per week – 5

320. Petrography. Megascopic and microscopic description and classification of igneous, sedimentary and metamorphic rocks.
Prerequisite: Geology 210 and 219
2 lectures, 3 laboratory hours – 15

340. Paleodynamics. The dynamic evolution of the earth. The present-day development of, and relationship between, oceans, continents, and island arcs, and the theory of plate tectonics. Techniques of structural analysis and petrology, strain analysis, and rock mechanics. Laboratory work will include the interpretation of geologic structures from maps.
Prerequisite: Geology 210 and 219
2 lectures, 3 laboratory hours – 31

350. Mineral Deposits. The origin and descriptive geology of the principal types of metallic and nonmetallic ore deposits with emphasis on their time-tectonic-stratigraphic relationships in the metallogenic sequence. Laboratory study of the ores and related rocks using the ore microscope.
Prerequisites: 210, 219
2 lectures, 3 laboratory hours – 4

360. Stratigraphy and Historical Geology. Principles of correlation, classification, paleogeography and geologic time, History of the Canadian Shield.
Prerequisite: Geology 210 and 275
5 hours per week – 11

367. 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 – 20

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

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 – 16

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 – 3

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 – 35

430. Geochemistry. Element abundancies, Meteorites, Trace element geochemistry, Application of thermodynamics to geological problems, Sedimentary geochemistry, Isotope geochemistry, Polymorphism.
3 lectures – 24

450. Economic Metal Deposits. The occurrence, production and mineral economics of metals, considering outstanding examples in Canada primarily and possible metallogenic relationships between different types. Laboratory work includes report preparation from geologic literature, seminar presentation, microscope examination of specific ores.
Prerequisite: Geology 350, Concurrent Geology 420 or 430
1 lecture hour, 3 laboratory hours – 7

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 – 11

475. Invertebrate Macropaleontology. Advanced study of rugose corals, graptolites and Paleozoic brachipods, 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 – 32

GEOPHYSICS

Department Head

A. E. Beck, BSc; PhD *Australian National U*

Departmental Office: B & G 62

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:

3 year BSc

Honors BSc (Geophysics I, II, III)

Three Year BSc

Requirements for admission

Candidates must satisfy the general regulations for the BSc degree (page 309) 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.

Honors BSc

Requirements for admission

Geophysics I (Physical). First Year General Program with Physics 20 and Mathematics 24 or Applied Mathematics 20 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.

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*This is regarded as a Geophysics course for the purposes of subject area concentration.

Third Year

Principal Courses

Geophysics 302, 303, 304

Geology 311

Subsidiary Courses

Applied Mathematics 370 or 300

Physics 366

One option

Fourth Year

Principal Courses

Geophysics 400, 401, 470

One of Applied Mathematics 470, 400, 360, 340, 453, 420

Subsidiary Courses

Geophysics 458

One option from Physics or Astronomy or Geology

One option

Geophysics II (Geological)

Requirements for admission. First year General Program with Physics 20 and Geology 20 as principal courses, Math 24 or Applied Mathematics 20 and Chemistry 20.

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 Honors Geology with permission of Head of Geology Department.

Principal Courses

Geology 200, 210, 219, 275

Physics 256

Chemistry 214 or Geophysics 202

Subsidiary Courses

Applied Mathematics 270

Third Year

Principal Courses

Geophysics 302, 304

Geology 320, 340

Subsidiary Courses

Geophysics 303 or Applied Mathematics 370

One option (Geophysics 202 if not taken in 2nd yr.)

Fourth Year

Principal Courses

Geophysics 400, 401, 470

Geology 350

Subsidiary Courses

Geophysics 458

One option from Physics or Astronomy, Mathematics or Applied Mathematics, or Geology

One option

Geophysics III (after 3 years BSc)

Prerequisites: 3 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

Geophysics 21. 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.

No Prerequisites
2 lectures, 2 laboratory hours — 18

Geophysics 202. Seismology. Fundamentals of seismology and wave propagation with applications to seismic exploration methods, studies of the earth's interior and earthquakes.
For Honors Geophysics students and Three Year BSc.
Prerequisites: Applied Mathematics 20 (or equivalent), Physics 20
2 lectures — 1

Geophysics 302. Exploration Geophysics. An introduction to gravitational, magnetic, electromagnetic, electrical and radioactive exploration methods.
For Honors Geophysics students and Three Year BSc.
Prerequisites: Physics 264, 265, (or 256), Applied Mathematics 270 or equivalent
2 lectures — 20

Geophysics 303. Potential Theory. Application of potential theory to problems concerning the earth's gravitational and magnetic field.
For Honors Geophysics students.
Prerequisites: Physics 264, 265, (or Physics 256), Applied Mathematics 270 (or equivalent).
2 lectures — 10

Geophysics 304. Laboratory. Covers various problems in exploration geophysics, earthquake seismology and computer programming and instrumentation.
For Honors Geophysics students and for Three Year BSc.
Prerequisites: Physics 264, 265, (or Physics 256), Applied Mathematics 270 (or equivalent)
4 laboratory hours

Geophysics 400. Communication theory. Introduction to time-series analysis, and digital filtering with applications to geophysical problems.
For Honors Geophysics students.
Prerequisites Applied Mathematics 270 (or equivalent), Geophysics 202 (or equivalent).
2 lectures, 2 laboratory hours — 29

Geophysics 401. Physics of the earth's interior. Application of mechanics, thermodynamics and atomic physics to problems of the earth.
For Honors Geophysics students.
Prerequisites: Geophysics 202, 302, 303, 304
2 lectures — 16

Geophysics 458. 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)

Geophysics 470. Thesis. A report on a field or laboratory study conducted by the student.
One full course.
For Honors Geophysics students (4th year)

Note. Geology 211 and 311 are regarded as Geophysics courses for the purposes of subject area concentration.

MATHEMATICS

Department Head

Professor D. Borwein, BSc *Witwatersrand;* PhD, DSc *London;* FRSE

PROGRAMS

Mathematics may be elected as the subject of concentration within the following degree programs: **Three Year BSc, General BA, Honors BA.**

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, 40, 44

(b) Mathematics 250, 256, 278 and at least one of Mathematics 340, 350, 351, 355, 363, 453.

Other programs may be set up in consultation with the Department.

A prerequisite for Program A is Mathematics 20 or 24 or 27 or Applied Mathematics 20. For any other program a prerequisite is Mathematics 24 or 27 or Applied Mathematics 20.

General BA Program

A prerequisite for this program is Mathematics 20 or 24 or 27 or Applied Mathematics 20.

Honors BA Programs

Requirements for Admission: First Year General Program with Mathematics 24 or 27 or Applied Mathematics 20 and any two other courses as principal courses. For grades required for admission and progression see page 309. For requirements concerning the joint Honors Program in Philosophy and Mathematics see page 47. For the Honors Program in Economics, Mathematics Option, see page 358.

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 Course

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.
May not be taken for credit by students with Grade 13 Mathematics A.
Prerequisite: Grade 12 Mathematics
3 lectures and 1 tutorial hour – 30

20. Introductory Calculus and Algebra. An introduction to calculus; a study of logic, set theory, probability theory, and the algebra of vectors and matrices.
Prerequisite: Grade 13 Mathematics A or Mathematics 10
3 lectures – 30

24. Calculus. Differential and integral calculus with applications.
Prerequisite: Grade 13 Mathematics A and Mathematics B
3 lectures and 1 tutorial hour – 30

27. Calculus. Differential and integral calculus with applications.
Prerequisite: Grade 13 Mathematics A or Mathematics 10. Students with Grade 13 Mathematics A and B should take Mathematics 24.
3 lectures and 1 tutorial hour – 30

30. Algebra. An introduction to abstract algebra, with principal emphasis on the structure of groups, rings, integral domains and fields.
Prerequisite: Mathematics 20 or 24 or 27 or Applied Mathematics 20.
3 hours – 19

31. Synthetic Geometry. Groups of transformations of the Euclidean plane, inversion, and coaxal systems; the projective plane.
Prerequisite: Mathematics 20 or 24 or 27 or Applied Mathematics 20
3 hours – 35

32. Analytic Geometry. Euclidean geometry of two and three-dimensional spaces studied with extensive use of vector and matrix methods.
Prerequisite: Mathematics 20 or 24 or 27 or Applied Mathematics 20.
3 hours – 5

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 20 or 24 or 27 or Applied Mathematics 20
3 hours – 9

35. Statistics. Standard probability distributions; sampling distributions; estimation; test of hypothesis, analysis of variance; regression and correlation.
Prerequisite: Mathematics 20 or 24 or 27 or Applied Mathematics 20
3 hours – 30

40. Elementary Theory of Numbers. Euclidean algorithm, congruences, indices, continued fractions, Gaussian integers, partitions and Diophantine equations.
Prerequisite: Mathematics 20 or 24 or 27 or Applied Mathematics 20
3 hours – 22

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 hours – 9

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 transformations, linear equations, canonical forms. Applications to bilinear forms, quadratic forms, geometry.
Prerequisite: Mathematics 24 or 27 or Applied Mathematics 20
3 hours – 14

253. Mathematics of Finance. Compound interest, annuities certain, amortization, sinking-fund, bonds; the mortality table; life annuities, standard forms of life insurance; commutation functions.
Prerequisite: Mathematics 24 or 27 or Applied Mathematics 20
3 hours – 17

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 20 or 24 or 27 or Applied Mathematics 20
3 hours – 1

255. 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 hours for one term – 12

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 hours – 2

278. Advanced Calculus. Functions of several variables, partial differentiation, coordinate 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 hours – 30

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 hours – 22

350. Algebra I. Introduction to abstract algebraic systems; elementary theory of groups, rings, fields.
3 hours – 25

351. Geometry I. Synthetic Euclidean geometry; synthetic and analytic methods in projective geometry.
3 hours – 9

353. Finite Differences. Advancing differences, interpolation, divided differences, central differences, inverse interpolation, summation, approximate integration; applications to life contingencies; theory of graduation.
3 hours – 5

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 hours – 23

356. Analysis II. Discussion of the real number system. Metric space topology and selected topics in real variable, including the Riemann-Stieltjes integral. Complex variable: differentiation and integration, Cauchy's theorem, Taylor and Laurent expansions, residue calculus and applications. Fourier and Laplace transforms.
4 hours – 31

363. Numerical Methods. Accuracy of approximate calculations, interpolation, summation of series, numerical differentiation and integration, solution of numerical algebraic and transcendental equations, numerical solution of difference equations and differential equations, least squares and harmonic analysis, numerical solution of simultaneous linear equations, use of digital computers in problem solving.
3 hours – 14

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 hours – 1

445. Theory of Probability. Probability measure, Lebesgue-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 hours – 31

450. Algebra II. Elementary factorization theorems; field theory; Galois theory; groups with operators, semi-simple rings, general factorization theorem.
3 hours – 8

452. Geometry II. Algebraic Geometry. Affine and projective varieties; divisors; Riemann-Roch Theorem; additional topics to be selected.
3 hours – 35

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.).
Prerequisite: Mathematics 250, and 256 or 278
3 hours – 17

455. Statistics II. Distributions in R^n; 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 hours – 21

456. Analysis III. Topics in point set theory. Introduction to measure and integration theory with applications.
3 hours – 11

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 hours – 18

463. Life Contingencies. General Life annuities and insurances, net and gross premiums, reserves, nonforfeiture values, combination benefits, joint annuities, last survivor annuities, generalized multiple life annuities, contingent assurances, reversionary annuities, population tables, multiple decrement tables.
3 hours – 25

464. Ordinary Differential Equations. Existence theorems; general linear equation, matrix systems, adjoint systems, Green's function, expansion problems; stability theory.
3 hours – 33

465. Multivariate Statistical Analysis. Matrix theory; normal distributions; correlations.
3 hours – 13

468. Differential Geometry and Tensor Calculus. Theory of curves, Serret-Frenet formulae; curvilinear coordinates, 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 hours – 27

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 hours – 24

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 hours – 19

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 hours – 24

PHARMACOLOGY

Department Head

C. W. Gowdey, BA, MSc; DPhil *Oxon*

Departmental Office MS 275

PROGRAMS

The Department of Pharmacology does not offer, at this time, any individual undergraduate degree programs. In collaboration 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.

301. General Physiology and Pharmacology. (Given in collaboration with the Department of Physiology.) A survey of the principles of general physiology and pharmacology.
2 lectures – 31

440. History of Scientific Ideas.
2 hours (half course) - 3

441. Seminar. The preparation of essays and the presentation of scientific reports or papers on assigned topics in pharmacology.
2 hours for one term

460. Advanced Physiology and Pharmacology. (Given in collaboration with the Department of Physiology.) Principles of general Physiology and Pharmacology at an advanced level.
2 lectures (half course) – 8

461. Chemical Pharmacology. Pharmacological screening, pharmacodynamics, structure-activity relationships, metabolism and toxicology of selected drug classes. Enrollment limited
2 lectures – 13

462. Survey of Pharmacology. Classification of the major drugs with emphasis on their absorption, metabolism, excretion, mechanism of action and importance.
2 lectures, one term only (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. Enrollment limited
Minimum of 10 hours

PHYSICS

Department Chairman

J.W. McGowan, BSc *St.F.X.;* MSc *Carnegie Mellon;* DSc *Laval*

Departmental Office PB 125

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 study not only basic Physics but also its relationship with other academic disciplines and with society. With a suitable choice of optional courses, the program is designed to lead to graduate research, secondary school teaching, or employment in many areas of government, industry and managerial or public relations positions. For details consult the Departmental brochure.

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 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 200* 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.

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. Those who plan to continue into graduate studies are advised to select options which satisfy the foreign language credit required by many graduate schools.

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, 451 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

Note: (i) Honors BSc (Physics): old program (not offered after 1972-73)

The students who are enrolled in the second and third year of the Honors BSc (Physics) program in 1970-71 may elect to join the new program in 1971-72 without any difficulty or increase in course load.

However, they can pursue their studies in the old program, as follows:

Third Year (not offered after 1971-72)

Principal Courses

Applied Mathematics 300

Physics 353, 357, 359, 360, 366

Subsidiary Course

One option

Fourth Year (not offered after 1972-73)

Principal Courses

Physics 451, 458, 465, 469

*AM 200 has a corequisite AM 202.

Five half-course senior options or 2½ full course senior options, as approved by the Physics Department; at least 1½ of these shall be Physics courses.

Subsidiary Course

One option

(ii) Honors BSc (Physics: Major-Minor) not offered after 1972-73)

Third Year (not offered after 1971-72)

Principal Courses

Physics 357, 360, 366

Two courses from the Minor

Subsidiary Course

One option

Fourth Year (not offered after 1972-73)

Principal Courses

Physics 353, 359

Two half-courses or one full course Physics option

One course from the Minor

Subsidiary Courses

Two options

COURSES

20. Introductory Physics. This course is a *suitable pre-requisite for all science programs* and is required for those students intending to specialise in the Physical Sciences. Grade XIII physics is strongly recommended.
Prerequisite: Grade XIII Mathematics A or equivalent
Corequisite: One of Applied Mathematics 20, Mathematics 24 or 27
2 lectures, 3 laboratory/tutorial hours — 22

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. For students who do not intend to proceed to any Honors course in Physics.
3 lecture-laboratory hours — 31

22. Introductory Physics. For students intending to pursue most programs in the Biological and Health Sciences; this course has no corequisites and does not lead to future studies in the Physical Sciences.
Prerequisite: Grade XIII Mathematics A or equivalent
2 lectures, 3 laboratory/tutorial hours — 22

26. Introductory Physics. For students in First Year Engineering Sciences.
Prerequisite: Grade XIII Mathematics A or Equivalent
Corequisite: Applied Mathematics 20
2 lectures, 3 laboratory/tutorial hours — 22

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 — 7

38. Selected Readings in Physics. A discussion course in which detailed study is made of writings selected from among the original works describing major achievements in physics and from among those commenting on the achievements. Enrolment may be limited.
Prerequisite: one of Physics 20, 21 or 26
2 discussion hours per week

HONORS COURSES

203. Fundamentals of Meteorology. Meteorological elements and instruments for their measurement, including temperature, pressure, wind, relative humidity, cloud forms and precipitation. 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 luminous atmospheric phenomena and severe types of storms.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
2 lectures — 18

204. Intermediate Physics for Biologists. Material on the mechanics of solids and fluids, sound, optics, DC and AC circuits, atomic and nuclear physics, with emphasis on biological and medical examples and applications.
Prerequisite: Physics 20, 22 or 26
2 lectures, 3 laboratory hours alternate weeks — 27

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.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 and 202 or equivalent
3 lectures — 12

252. Classical Mechanics. Vector algebra including triple products. A critical analysis of Newton's laws and their application to rotational motion, rigid body motion, central force motion and simple systems of particles.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 270 or 200 or Mathematics 278
2 lectures – 12

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 – 31

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.
Prerequisite: 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 – 36

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.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 and 202 or equivalent.
2 lectures, 3 laboratory hours – 8

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.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
3 lectures, 3 laboratory hours – 31

264. 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.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 and 202 or equivalent
2 lectures, 3 laboratory hours, alternate weeks – 36

265. 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.
Prerequisite: Physics 20 or 26 and Applied Mathematics 20 or Mathematics 24 or 27
Corequisite: Applied Mathematics 200 and 202 or equivalent
2 lectures, 3 laboratory hours, alternate weeks – 8

353. Statistical and Thermal Physics. An introduction to the basic concepts of statistical mech 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 – 36

357. Quantum Physics. A phenomenological study of the particles of modern physics followed by a detailed discussion of electrons, protons, neutrons, mesons and photons and their role in the structure of nuclei and atoms, including energy states, transition probabilities and spectra.
Prerequisite: Physics 250, 254 and 255 or equivalent
3 lectures – 19

359 Modern Physics Laboratory. A comprehensive laboratory designed to familiarise the student with the basic concepts of modern physics.
Prerequisite: Physics 254 and 255, or equivalent
6 laboratory hours

360. Advanced Classical Mechanics. Hamilton's equations and Poisson brackets: contact transformations and the Hamilton-Jacobi equation. Selected topics in rigid body motion, elasticity and special relativity theory.
Prerequisite: Physics 250
2 lectures – 12

364. Applied Optics. A discussion of the design and operation of interferometers, spectrographs, refractometers, polarimeters, lasers, etc. Fourier transforms and optical processing of information.
Prerequisite: Physics 254
2 lectures for 1 term (half course) – 22

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 – 13

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).
Prerequisite: Applied Mathematics 270 or 200 or Mathematics 278, Physics 252 and 256 (or equivalent), or permission of Chairman of Department.
3 lectures and 3 laboratory hours – 33

451. Quantum Mechanics I. An introductory course in quantum mechanics to include discussion of the free particle, barrier penetration, the harmonic oscillator and the hydrogen atom.
Prerequisite: Physics 357 and Applied Mathematics 300
3 lectures first term only (half course) – 35

458. Seminar. Students will conduct seminars on topics of current interest and write an essay upon an assigned topic.
1 hour (half course)

461. Quantum Mechanics II. Time-independent and time-dependent perturbation theory, scattering and radiation processes.
Prerequisite: Physics 451
3 lectures second term only (half course) – 10

462. Nuclear Physics. An introduction to nuclear and particle physics.
Prerequisite: Physics 357.
2 lectures for 1 term (half course) – 7

463. Atmospheric Physics. Basic concepts of physics applied to atmospheric phenomena.
Prerequisite or corequisite: Physics 353
2 lectures for 1 term (half course) – 3

464. Atomic and Molecular Physics. Interactions of atoms and molecules with photons, charged particles and each other.
Prerequisite: Physics 254 and 357
2 lectures for 1 term (half course) – 3

465. Electromagnetic Theory. The solution of Maxwell's equations for two and three dimensional problems. e.g. radiating systems, resonators, waveguides.
Prerequisite: Physics 255 or 256 and Applied Mathematics 300.
3 lectures first term only (half course) – 25

466. Radio Physics. A discussion of selected topics in circuit analysis, transmission line theory and the propagation of radio waves.
Prerequisite: Physics 465
2 lectures, second term only (half course) – 24

467. Solid State Physics. An introductory course covering the thermal, electric and magnetic properties of crystalline matter.
Prerequisite: Physics 357
2 lectures for one term (half course) – 7

468. Plasma Physics. An introduction to the properties of highly ionised gases and a discussion of the diagnostic techniques used to investigate them.
Prerequisite: Physics 465
2 lectures, second term only (half course) – 24

469. Laboratory. A laboratory in which the student selects or suggest 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

PHYSIOLOGY

Acting Department Chairman

G.J. Mogenson, BA, MA *Saskatchewan;* PhD *McGill*

Departmental Office: MS 222

PROGRAMS

The Department of Physiology offers an Honors Program in Physiology leading to the BSc degree. In the Fourth Year of this program students may choose either the Physiology option or the Physiology and Pharmacology option.

In conjunction with the Department of Psychology the Department of Physiology offers an Honors Program leading to the BSc degree in Psychology and Physiology.

Honors BSc Program: Physiology

Requirements for Admission. The admission requirements for these programs are determined by the prerequisites of the program selected for the Second Year (see page 309). In choosing options in these programs, a university course in Mathematics, required for the Honors Program in Physiology and a university course in Physical Chemistry, required for Biochemistry 300, should be considered.

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.

Second Year

One of:

(a) Second Year of Program in Honors Biology
For prerequisites and courses see pages 340 and 342.

(b) Second Year of Program in Honors Chemistry
For prerequisites and courses see page 319.

(c) Second Year of Program in Honors Physics
For prerequisites and courses see page 334.

(d) Second Year of other Honors Programs
With permission of the Department of Physiology, a student who has completed the First Year of General Program (Natural Sciences) may petition the Dean, Faculty of Science, for recognition of the Second Year of other Honors Programs. If these do not include Organic Chemistry, the student must take Organic Chemistry in the Third Year.

Third Year

Principal Courses

Physiology 300

Physiology and Pharmacology 301

Two of: Anatomy 300, Bacteriology 300, Biochemistry 300 or 406, Biophysics 300, Botany 255, Zoology 352.
Chemistry 203, 313, or 33 may 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.

Subsidiary Courses

Two options

Fourth Year

Students may choose either the Physiology option, or the Physiology and Pharmacology option in this last year of the program.

Physiology option

Principal Courses

History of Scientific Ideas 440

Physiology and Pharmacology 460

Physiology 441, 461, 462, 463, 464, 466, 480

Subsidiary Courses

One option from:

Botany 300; Psychology 255; Mathematics 255; Zoology 465 (only if Statistics not previously taken)
One additional option to be determined by consultation with the Department of Physiology.

Physiology and Pharmacology option

Principal Courses

History of Scientific Ideas 440

Physiology and Pharmacology 460

Pharmacology 441, 461, 462, 480

Two of Physiology 461, 462, 463, 464, 466, 467

Subsidiary Courses

One option from:

Botany 300; Psychology 255; Mathematics 255; Zoology 465 (only if Statistics not previously taken)

One additional option.

Honors BSc Program: Psychology and Physiology

Requirements for Admission: First Year General Program (Natural Sciences) with Psychology 20, Biology 22, or Zoology 20, Chemistry 20, Physics 20 as principal courses. Applied Mathematics 20, or Mathematics 24 or 27 is recommended as one option. For grades required for admission and progression, see page 309.

Second Year

Principal Courses

Psychology 235, 255
Chemistry 203
Zoology 255 or 270

One of: Physics 204, 256, Applied Mathematics 20 or Mathematics 20, 24 or 27 (if not taken previously), Mathematics 250, Applied Mathematics 200.

Subsidiary Course

One option

Third Year

Principal Courses

Psychology 338, 343
Physiology 300, 301

One of: Anatomy 300, Biochemistry 300

Subsidiary Course

One option

Fourth Year

Principal Courses

Physiology 463, 464, 480

Two of: Physiology 460, 461, 462, 466
Two of: Psychology 234, 236, 337, 349, 445, 446.

Subsidiary Course

One option

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, demonstrations 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 systems; 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 – 4

Prerequisites for Fourth Year Courses: Successful completion of previous year's program or permission of the Head of the Department.

300. Mammalian Physiology. A survey for Honors students.
2 lectures, 3 laboratory hours – 36

301. General Physiology and Pharmacology. (Given in collaboration with the Department of Pharmacology).
A survey of general physiology with special emphasis on cellular physiology as well as general principles of pharmacology.
2 lectures – 31

342. Human Physiology. A survey for students in Honors Physical and Health Education.
2 lectures; 3 laboratory hours – 4

440. History of Scientific Ideas. A survey of the history of science. Given in collaboration with other Departments.
2 hours (half course) – 3

441. Seminar. The presentation of scientific papers and reports and the writing of essays on assigned topics.
2 hours (half course)

442. Physiology of Exercise. A study of the response and regulation of the human cardiovascular, respiratory and neuromuscular systems to acute and chronic exercise. For students in Honors Physical and Health Education and others with adequate preparation.
Prerequisite course in Physiology 342 or equivalent
1 lecture; 3 laboratory hours – 1-5

460. Advanced Physiology and Pharmacology. Principles of general physiology and pharmacology at an advanced level. (Given in collaboration with the Department of Pharmacology (Advanced Physiology and Pharmacology 460)).
2 lectures, one term only (half course) – 8

461. Systematic Mammalian Physiology: Special physiology of the blood and other fluids, the cardiovascular, respiratory and gastrointestinal systems.
2 lectures, one term only (half course) – 13

462. Metabolic and Reproductive Physiology. Role of the endocrine system in regulation of metabolism and reproduction in mammals.
2 lectures, one term only (half course) – 17

463. Neurophysiology. The central and peripheral nervous systems and the special senses.
2 lectures (half course) – 21

464. Physiological Controls and Regulations. The role of various systems and control mechanisms in the maintenance of homeostasis and the regulation of behavior.
2 lectures (half course) – 35

465. Behavioral Physiology. Observation and measurement of external behavior and the role of the integrative systems in the control of external behavior.
2 lectures (half course) – 28

466. Body Water and Renal Physiology. Body fluid compartments and kidney function.
2 lectures, one term only (half course) – 30

467. Selected Advanced Topics in Physiology. A seminar course.
(Half course)

480. Laboratory and Tutorial. Instrumentation in physiology and laboratory research projects. Open only to honors students in Physiology.
Minimum 10 hours

481. Instrumentation in Physiology. Principles of measurement and instrumentation in physiology. Open only to students not in honors Physiology.
2 lectures, one term only (half course) – 10

PLANT SCIENCES

Department Chairman (Acting)

D.B. Walden, BA *Wesleyan;* MSc, PhD *Cornell*

Departmental Office: B.G. 232

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 with a Plant Sciences Major or to an Honors BSc degree in Biology (Plant Sciences option). The latter provides a basis for professional work in academic, government and industrial fields.

PROGRAMS

General BA Degree (Plant Sciences Major)

The Department provides a program leading to a General Program BA in accordance with the regulations as set forth on page 308.

Normally a student will take Biology 21 or 22 in the First Year and two courses in Plant Sciences in each of the Second and Third years.

Students are encouraged to include courses in Chemistry, Biochemistry and Mathematics in their options.

BSc Honors Biology (Plant Sciences Option)

Requirements for Admission. First Year General Program (Natural Sciences) including the following as principal courses: either Biology 22 or both Plant Sciences 20 and Zoology 20, (Only Biology 22 will be offered in 1971-72): Chemistry 20; Physics 20 or 22. It is also recommended that a course in mathematics be included.

For grades required for admission and progression see page 309. Admission to subsequent years is granted automatically to those completing the previous year with a grade average in the principal courses of 70% with no principal course grade below 60% and a passing grade in each of the subsidiary courses. Students who fail to qualify for automatic admission but who complete the first year with a grade average of 60% or greater in the principal courses should apply to the Department for consideration.

Second Year

Principal Courses

Plant Sciences 250
Plant Sciences or Zoology 255
Zoology 270

Subsidiary Courses

Chemistry 203
Two of: Chemistry 204, Mathematics 20, 24, 27 or Applied Mathematics 20, Geology 20; Physics 204; an Arts or Social Science course.

CAUTION: All Students entering Second Year should examine the prerequisites for courses which they expect to take in subsequent years.

All students entering Third and Fourth Years are required to participate in the Field Courses conducted by the Department.

All Third and Fourth Year students must consult the Chiarman of the Department of Plant Sciences before registering in any of the courses prescribed for Third and Fourth Years.

Third Year

Principal Courses

Plant Sciences 300, 342, 351, 353, 357

Subsidiary Courses

Biochemistry 406, or an Honors Course other than Plant Sciences from the Faculty of Science.

One option*

Fourth Year

Principal Courses

Plant Sciences 499
Four of: Plant Sciences 442, 443, 452, 453, 454, 455, 457, 459, 460, 461, 471

Subsidiary Courses

One course other than Plant Sciences from the Faculty of Science.

One option*

COURSES

20. Introductory Plant Sciences. For students of First Year General Program (Natural Sciences); the general principles of the Plant Sciences.
Not offered in 1971-72.
2 lectures, 3 laboratory hours — 16

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. This course is given both in the Department of Plant Sciences and in the Department of Zoology.
2 lectures, 2 demonstration/laboratory hours — 7

22. Biology. For students in the Faculty of Science. The fundamental principles of biology stressing the features common to all living organisms. This course is given jointly by the Department of Plant Sciences and the Department of Zoology.
5 Directed study/lecture hours — 8

GENERAL COURSES

Students in the General BA Program with a Plant Sciences Major are encouraged to participate in the field courses (363 and 463). First and Second Year students are advised to consult the Chairman of the Department in the spring since the Field Courses are conducted prior to fall registration.

*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.

Students not registered in Honors Biology but who wish to take Honors level Plant sciences courses must first obtain permission from the Chairman of the Department.

33. Plant Ecology. Methods of studying vegetation; environmental factors (physical and biological) that influence plant growth and distribution; development and distribution of plant communities.
Prerequisite: Plant Sciences 20, Biology 21, or Biology 22
4 lecture/Laboratory hours – 6

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.
Prerequisite: Plant Sciences 20, Biology 21, or Biology 22
2 lectures – 17

36. Microbiology. Morphology, biology, classification and economic importance of microorganisms.
Prerequisite: Plant Sciences 20, Biology 21 or Biology 22
4 lecture/laboratory hours – 3

37. Taxonomy and Phylogeny. Taxonomy and evolution with special references to flowering plants.
Prerequisite: Plant Sciences 20, Biology 21, or Biology 22
4 lecture/laboratory hours – 28

42. Plant Physiology. Aspects of the physiology of growth and development including growth regulation, reproduction and dormancy.
Prerequisite: Plant Sciences 20, Biology 21, or Biology 22
4 lecture/laboratory hours – 19

HONORS COURSES

Prerequisites for Second (250, 255), Third (300-363) and Fourth (442-499) Year Courses: successful completion of previous year's Biology program or permission of the Chairman of the Department.

Students not registered in Honors Biology but who wish to take Honors level courses must first obtain permission from the Chairman of the Department.

All students in Second Year who intend to enter the Third Year of the Plant Sciences option must consult the Chairman of the Department before the end of the Second Year in order to arrange for participation in the Field Course (363) which is conducted prior to registration in the fall.

250. Vascular Plants. Comparative morphology and anatomy of vascular plants with emphasis on the experimental approach to the study of growth and morphogenesis.
2 lectures, 3 laboratory hours – 10

255. 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.
2 lectures, 3 laboratory hours – 17

300. Biometrics. Study of statistical methods and their application to biological data.
2 lecture/laboratory hours – 31

342. Cell Biology. Structure and function of cells, with emphasis on cell types, organelles, and the biochemical and physiological processes occurring within them.
2 lectures, 3 laboratory hours – 11

351. Microbiology. A comparative study of the morphology, biology and relationships of algae, bacteria, fungi and viruses. Given in collaboration with the Department of Bacteriology and Immunology.
2 lectures, 3 laboratory hours – 16

353. Ecology and Developmental Physiology. Ecological and physiological considerations of plant survival, growth and development.
2 lectures, 3 laboratory hours – 20

357. Plant Taxonomy. Theory of taxonomy. Numerical taxonomy with emphasis on Q-techniques. Study of selected genera. History of taxonomic practice and theory.
4 lecture/laboratory hours – 28

363. Field Course. A course of study of plants in their natural environment for students entering Third Year. Students should be prepared to meet part of the expenses of travel and subsistence.

442a. Plant Biochemistry. Selected topics in plant biochemistry, including photosynthesis and nitrogen metabolism.
2 lectures, 2 laboratory hours for 1 term (half course) – 9

443a. Quantitative Plant Ecology. Sampling and description of natural communities. Analysis of distribution patterns. Ordination and classification procedures.
2 lectures, 2 laboratory hours for 1 term (half course) – 16

452b. Plant Physiology. Selected topics of current interest in plant physiology.
2 lectures, 2 laboratory hours for 1 term (half course) – 30

453b. Experimental Plant Ecology. Plant responses to environment under experimental conditions, plant competition; evolution and plant ecology.
2 lectures, 2 laboratory hours for 1 term (half course) – 6

454b. Cytogenetics. The study of chromosomes and the genetic consequences of meiosis.
2 lectures, 2 laboratory hours for 1 term (half course) — I

455a. Microbial Genetics. Aspects of genetics applying to micro-organisms. Given in collaboration with the Department of Bacteriology and Immunology.
2 lectures, 2 laboratory hours for 1 term (half course) — 26

457a. Evolution of Plants. Micro-evolution — gene flow, differentiation of populations; isolation of populations — with particular reference to cultivated plants. Macro-evolution — problems of homology, reliability of the fossil record; semilogical techniques of deriving phylogenies. Geographical-chronological evidences. Biochemical and physiological evolution.
2 lectures, 2 laboratory hours for 1 term (half course) — 36

459b. 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 Biophysics (Biophysics 462b).
2 lectures, 2 laboratory hours for 1 term (half course) — 34

460a. Algae and Limnology. Morphology and biology of fresh-water algae with particular reference to their significance in natural waters.
2 lectures, 2 laboratory hours for 1 term (half course) — 21

461b. Principles of Plant Pathology. Nature of plant diseases and of plant pathogens; relationships between host and pathogen; epidemiology of plant diseases; plant disease control.
2 lectures, 2 laboratory hours for 1 term (half course) — 10

463. Field Course. A course of study of plants in their natural environment for students entering Fourth Year. Students should be prepared to meet part of the expenses for travel and subsistence.

466b. Bacteriology and Virology. Selected topics in bacteriology and virology with emphasis on current developments.
2 lectures, 2 laboratory hours for 1 term (half course) — 19

471a. Mycology. Selected topics in mycology with emphasis on current developments.
2 lectures, 2 laboratory hours for 1 term (half course) — 14

499. Laboratory. A laboratory investigation in a selected field with presentation of a seminar and thesis.
9 laboratory hours

ZOOLOGY

Department Chairman

M. Locke, BA, MA, PhD *Cantab*

Departmental Office: BG 344

PROGRAMS

The Department of Zoology offers two programs of study which lead to an Honors BSc degree after four years of study: Honors Biology (Zoology option) and Honors Zoology. Also offered is a program with Zoology as the approved area of concentration which leads to the General BA degree after three years of study.

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:

General BA Program: (Zoology Major)

Students wishing to follow an approved area of concentration in Zoology must include Zoology 43 and Zoology 45 among the four senior courses elected in that subject; Biology 21 or 22 is the normal prerequisite for most senior courses in Zoology and should be included in the First Year General Program. Students wishing advice on the selection of courses should consult with the Department during the two weeks prior to registration in second and third years.

BSc Honors Biology (Zoology option) Program

Requirements for Admission: First Year General Program (Natural Sciences) including the following as principal courses: Biology 22, Chemistry 20, Physics 20 or 22. A course in mathematics is recommended. For grades required for admission and progression see page 309.

Second Year

Principal Courses

Botany 250

Botany or Zoology 255

Zoology 270

Subsidiary Courses

Chemistry 203

Two of: Chemistry 204, Mathematics 24, 27 or Applied Mathematics 20; Geology 20; Physics 204; One Arts or Social Science Course

Caution: All students entering Second Year should examine the prerequisites for courses which they expect to take in subsequent years. All students entering Third and Fourth years are required to participate in the field courses: 363 and 463.

Students wishing advice on the selection of courses should consult with the Department during the two weeks prior to registration.

Third Year

Principal Courses

Zoology 265, 352, 354, 363*, 454

Biochemistry 406 or Biochemistry 300

One course from the Faculty of Science, approved by the Department

Subsidiary Course

One option **

Fourth Year

Principal Courses

Zoology 463*

Four of Zoology 410, 453, 456, 460, 465, 470, 471, 473, 480

One course from the Faculty of Science, approved by the Department

Subsidiary Course

One option **

BSc Honors Zoology Program

Requirements for Admission. First Year General Program (Natural Sciences) including Biology 22 and Chemistry 20. For grades required for admission and progression see page 309. All the Natural Science courses that the student has taken will be counted as principal courses. A course in Mathematics is recommended.

Second, Third and Fourth Years

A minimum of 6 courses must be taken in the Second Year and 5 in each of the Third and Fourth Years. Of these, at least 8 must be Zoology courses which must include Zoology 265 and 270 to be taken in the Second Year; of the remainder, 2 courses must be selected from each of Sections II and III listed below, and the other 2 being optional Zoology courses. The student must obtain the approval of the Department for his program for each year.

Section I Zoology 265, 270, 410, 460, 471

Section II Zoology 255, 354. Zoology 352, 454; although for both of these courses Biochemistry 300 or 406 is prerequisite it may be taken concurrently. (Note that Chemistry 203 is prerequisite to either Biochemistry course).

Section III Zoology 470, 473; Zoology 453 (prerequisite Zoology 465)

Section IV Zoology 437, 465, 480; Zoology 456 (Prerequisite Zoology 354)

The only optional Zoology courses that may be taken in the Second Year are Zoology 255 and 465; Zoology 480 may be taken only in the Fourth Year. A student who lacks the necessary prerequisites for a particular Honors course may with the approval of the Department substitute the corresponding general course in the same subject.

Zoology 363 and 463 (Field Courses) are required and may be offered prior to registration at the beginning of the Third and Fourth years respectively. Students are advised to register for these courses in the spring of their Second and Third Years.

The remaining 8 courses additional to the 8 required Zoology courses are entirely optional but subject to the approval of the Department. Students are reminded that for the "Type A" High School Certificate in Biology, the following are required:

24 credits in Biology with a B average

3 credits in Calculus with a C average

15 credits in Chemistry, Mathematics, Physics (any combination) with a C average

Each of the Zoology courses offered is a full course, counting for 3 credits. For the computation of grades, the principal courses are those courses which are in Natural Science.

COURSES

20. Introductory Zoology. The principles of animal biology as illustrated by a study of the structure and physiology of particular forms. Not offered in 1971-72.
2 lectures, 3 laboratory hours — 7

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 applications of biology to social and economic problems. This course is given by the Departments of Plant Sciences and Zoology.
2 lectures, 2 demonstration/laboratory hours — 7

22. Biology. For students in the Faculty of Science. The fundamental principles of biology stressing the features common to all living organisms. This course is given by the Departments of Plant Sciences and Zoology.
2 lectures, 3 laboratory hours — 8

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*Students should inquire about these field courses at the end of their Second and Third Years since these may be offered before registration time in their Third and Fourth Years.

**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.

30. Mammalian Zoology. The biology of mammals with emphasis upon structure and function, and their adaptive significance.
Prerequisite: Zoology 20 or Biology 21 or Biology 22
2 lectures, 3 laboratory hours — 7

34. Comparative Vertebrate Histology. An introduction to the microscopic structure and development of tissues and organs.
Prerequisite: Zoology 30 or 270
2 lectures, 3 laboratory hours — 21

37. History of Biology. The history of discoveries and the development of biological thought. Not offered in 1971-72.
Prerequisite: one Zoology or Biology course
2 lectures — 3

41. Entomology. The biology and economic importance of insects and related arthropods.
Prerequisite: One Zoology or Biology course
2 lectures, 3 laboratory hours — 8

43. Animal Ecology. Modern ecological theories and their application to current problems concerning human populations and their environment. Reading in classical and modern ecology is required. Students should obtain the reading list in the spring preceding their registration in the course. Lists are available from the Department of Zoology Office.
2 lectures, 3 laboratory hours — 29

44. Embryology. A study of fundamental embryological processes as illustrated by selected invertebrate and vertebrate types.
Prerequisite: Zoology 30 or equivalent.
2 lectures, 3 laboratory hours — 15

45. Principles of Genetics. The principles of Mendelian genetics and the chromosome theory.
Prerequisite: One Zoology or Biology Course
2 lectures — 17

47. Parasitology. A study of parasitism as a way of life, representative animal parasites, host-parasite relationships and parasitological techniques.
Prerequisite: One Zoology or Biology Course
2 lectures, 3 laboratory hours — 36

HONORS COURSES

Students who are not registered in the Honors Program may be admitted to honors courses if they had a B average in the science courses and in all courses of the previous year together with permission of the instructors.

255. Principles of Genetics. The principles of Mendelian genetics and the chromosome theory, illustrated by lectures and the practical performance of simple breeding experiments.
2 lectures, 3 laboratory hours — 17

265. Invertebrate Zoology. The anatomy and biology of representative invertebrates.
2 lectures, 3 laboratory hours — 14

270. Comparative Vertebrate Zoology. The biology, origin and evolution of the classes of vertebrates; an introduction to some principles of evolution. Restricted to students in Honors Biology and Honors Zoology.
2 lectures, 3 laboratory hours — 33

352. Comparative Physiology. A study of chemical and physical principles of cell function, homeostatic mechanisms and the integration of organ systems in selected invertebrate and vertebrate types.
2 lectures, 3 laboratory hours — 12

354. Comparative Vertebrate Histology. An introduction to the microscopic structure and development of vertebrate tissues and organs.
2 lectures, 3 laboratory hours — 21

363. Biological Field Studies. Study of living organisms in their field environment. The student should be prepared to meet part of his expenses for travel and subsistence.
Prescribed but non-credit

410. Entomology. The biology of insects. Classification, physiology, ecology, insect-control, collecting techniques will be among the topics studied.
2 lectures, 3 laboratory hours — 8

437. History of Biology. The history of discoveries in biology and the development of biological thought. Not offered in 1971-72.
2 lectures — 3

453. Animal Ecology. A rigorous course in population biology. Dynamics of single and multiple species systems. Population structure. Strategies of reproduction and interaction. Diversity and stability in real ecosystems. Emphasis will be placed on the evolution of regulating mechanisms at the population level.
Prerequisite: Zoology 465
2 lectures, 3 laboratory hours — 31

454. Embryology. Principles of development as illustrated by selected invertebrate and vertebrate types.
Prerequisite: Biochemistry 300 or 406
2 lectures, 3 laboratory hours — 15

456. Histological Techniques. A practical course in the techniques of microscopy including sectioning and staining, photomicrography, preparation of illustrations and introductory electron microscopy.
Prerequisite: Zoology 354
3 laboratory hours

460. Insect Taxonomy. The principles and historical development of insect taxonomy and the classification of specimens by means of keys and monographs.
3 laboratory hours – 7

463. Biological Field Studies. Study of living organisms in their field environment. The student should be prepared to meet part of his expenses for travel and subsistence.
Prescribed but non-credit

465. Biometry. Methods of measurement and sampling and the application of statistical methods to zoological data.
2 lectures, 3 laboratory hours – 11

470. Evolution. Concepts of species, intra and interspecific variations including polymorphism; selection and gene flow; significance of central changes. A lecture and seminar course available only to students in Honors Zoology.
Not offered in 1971-72
3 lectures – 24

471. Parasitology. A study of parasitism as a way of life, representative animal parasites, host-parasite relationships and parasitological techniques.
2 lectures, 3 laboratory hours – 36

473. Comparative Ethology. An introduction to the study of animal behavior.
2 lectures, 3 laboratory hours – 25

480. Tutorial. A course in reading and practical work within a particular field of Zoology under the direction of a staff member.
Prerequisite: average of 70% in Third Year. A student will be admitted only with permission of an instructor.
Full course

NOTE: Certain graduate courses are available to undergraduates with the permission of the instuctor concerned and the Department Advisory Committee.

MEMBERS OF THE FACULTY OF SCIENCE

ANATOMY

Professors

Barr, M.L., SM, BA, MSc, MD *UWO;* LLD *Queen's, Toronto, Alberta and Dalhousie;* Dr med h c *Basel;* FRSC, FRCP(C)

Buck, R.C., MD, MSc *UWO;* PhD *London* (Department Chairman)

Hollenberg, M.J., BSc (Med), MD *Manitoba;* MSc, PhD *Wayne State*

Associate Professors

Gwinnett, A.J., BDS *Birmingham;* LDS, RCS (Eng); PhD *Bristol*

Gwyn, D.G., MRCS (Eng); LRCP, MBBS *London;* PhD *Birmingham*

Hoshino, K., MD, DMedSc *Tokyo*

Montemurro, D.G., 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*

Donisch, E.W.K.F., MD *Bonn;* MSc *UWO*

Gammal, E.B., MB, BCh *Cairo;* PhD *UWO*

Sergovich, F.R., BA *McMaster;* PhD *UWO*

Shaver, Evelyn L., BSc, MSc, PhD *UWO*

Singh, R.P., BA, MSc, PhD *UWO*

Lecturer

Clattenburg, R.E., BSc, MSc *Acadia*

Honorary Lecturers

Robinow, C.F., MD *Hamburg;* FRSC

Walden, D.B., BA *Wesleyan;* MSc, PhD *Cornell*

Instructor

Leyshon, G.A., BA; MS *Illinois*

APPLIED MATHEMATICS

Professors

Blackwell, J.H., ED; BSc *Melbourne;* MSc, PhD *UWO* (Department Head)

Dennis, S.C.R., BSc, ARCS, DIC, PhD *London*

Ehrman, J.B., BA *Pennsylvania;* MA, PhD *Princeton*

Fraser, P.A., BSc *UWO;* MS *Wisconsin;* PhD *UWO*

Naylor, D., BSc, PhD *London*

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*

Manuel, P.W., BSc, MSc, PhD *UWO* (Administrative Assistant)

Nerenberg, M.A.H., BSc, PhD *McGill*

Sakmar, I.A., MSc *Istanbul;* PhD *California, Berkeley*

Assistant Professors

Sullivan, P.J., BASc, MASc *Waterloo;* PhD *Cantab* (joint appointment with the Faculty of Engineering Science)

Zamir, M., C Eng, AFRAeS, BSc, PhD *London*

Visiting Assistant Professor

Digby, P.J., BSc, PhD *London*

Lecturer

Migneron, J.H.R., BA *Montreal;* BSc *Ottawa;* MSc *Cornell*

ASTRONOMY

Professor

Wehlau, W.H., AB, PhD *California* (Department Head, Director of the Observatories)

Associate Professors

Gray, D.F., BSc *Wisconsin;* MSc, PhD *Michigan*

Marlborough, J.M., BSc, MA *Toronto;* PhD *Chicago*

Assistant Professors

Landstreet, J.D., BA *Reed;* MSc, PhD *Columbia*

Mitalas, R., BA, MA *Toronto;* PhD *Cornell*

Moorhead, J.M., BSc *California Institute of Technology;* MA *UCLA*

Wehlau, Amelia, AB, PhD *California* (part time)

BACTERIOLOGY AND IMMUNOLOGY

Professors

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

Murray, R.G.E., BA, MA *Cantab;* MD, CM *McGill;* FRSC (Department Head)

Robinow, C.F., MD *Hamburg;* FRSC

Clinical Professor

Hatch, L.A., MBBS, Dip Bact, FRCPath, *London*

Associate Professors

Ebisuzaki, K., BSc, PhD *Wisconsin*

Medzon, E.L., BSc, MSc *Manitoba;* PhD *McGill*

Robinson, J., BSA *British Columbia;* MSc, PhD *McGill*

Zajic, J.E., MS *Wisconsin;* PhD, JD *Oklahoma*

Clinical Associate Professor

Bakerspigel, A., BA, MA *McMaster;* PhD *UWO*

Assistant Professors

Cheevers, W.P., BA *Colorado;* PhD *Mississippi*

Rozanis, J., MSc *Hebrew University, Israel;* PhD *McGill*

Sinclair, N.R., BSc, MD, PhD *Dalhousie*

Singhal, S.K., BSc *India;* PhD *McGill*

Strejan, G.H., MSc *Romania;* PhD *Hebrew University, Israel*

Wilkins, P.O.B., BM *New York;* MS *Hawaii;* PhD *Pennsylvania*

Clinical Assistant Professor

Campsall, E.W.R., BA *Queen's;* MD, CM *McGill*

Honorary Lecturers

Chodirker, W.B., MSc(Med), MD *Manitoba*

Hannay, C.L., BSA *Toronto;* DIC, PhD *London*

Roslycky, E.B., BSc, MSc *Manitoba;* PhD *Wisconsin*

Toogood, J.H., MD *Toronto;* Dip Int Med *McGill;* FRCP(C)

Clinical Lecturer

Black, W.A., MB, ChB *Glasgow University;* MRC Path

Instructor (Part Time)

Galsworthy, Sara B., BA *Pomona College, California;* PhD *Wisconsin*

BIOCHEMISTRY

Professors

Bigelow, C.C., BASc *Toronto;* MSc, PhD *McMaster*

Carroll, K.K., BSc, MSc *New Brunswick;* MA *Toronto;* PhD *UWO*

Fitz-James, P.C., BSA *British Columbia;* MSA *Toronto;* MD, PhD *UWO*

McCarter, J.A., BA, MA *British Columbia;* PhD *Toronto;* FRSC

McMurray, W.C., BSc, PhD *UWO*

Rossiter, R.J., BSc *W.Aust.;* BA, MA, DPhil, BM, BCh, DM *Oxon.;* FRIC (Eng); FRSC

Smith, D.B., BA, MA *British Columbia;* PhD *Toronto*

Stewart, H.B., MD, PhD *Toronto,* PhD *Cantab* (Head of Department)

Strickland, K.P., BSc, MSc, PhD *UWO*

Associate Professors

Ball, Judith K., BSc *Mount Allison;* MSc, PhD *Dalhousie*

Heagy, F.C., MD, MSc, PhD *UWO*

Magee, W.L., BSc, MSc, PhD *UWO*

Walker, I.G., BA *Saskatchewan;* MA, PhD *Toronto*

Webling, D.D., BSc, MB, BS, PhD *Adelaide;* DTM&H *Sydney*

Assistant Professors

Cook, R.A., BSc, MSc, PhD *Manitoba*

Donisch, Valentine, MD *Bonn;* PhD *UWO*

Galsworthy, P.R., BSc *Queen's;* PhD *Wisconsin*

Gatfield, P.D., MD *Queen's*

Gordon, B.A., MDCM, MSc, PhD *Queen's*

Guthrie, J.P., BSc *UWO;* PhD *Toronto*

Haines, D.S.M., BA, MD, PhD *Toronto*

Trevithick, J.R., BSc *Queen's;* PhD *Wisconsin*

Honorary Lecturers

Chefurka, W., BSc *Manitoba;* MSc *Montana State;* PhD *Harvard*

Hudson, A.J., MD, BSc *Toronto;* FRCP(C)

Krupka, R.M., MA *Saskatchewan;* PhD *McGill*

Spencer, E.Y., BSc, MSc *Alberta;* PhD *Toronto;* FCIC

BIOPHYSICS

Professor

Burton, A.C., MBE, BSc *London;* MA, PhD *Toronto;* LLD *Alberta;* FRSC, FRSA (part time)

Associate Professors

Groom, A.C., BSc, PhD *London;* FInstP

Inch, W.R., BSc *Queen's;* PhD *UWO*

Roach, Margot R., BSc *New Brunswick;* MD, CM *McGill;* PhD *UWO;* FRCP(C) (Department Chairman)

Taylor, C.P.S., BA *British Columbia;* BA, MA *Oxon;* PhD *Pennsylvania*

Assistant Professors

Canham, P.B., BASc *Toronto;* MSc *Waterloo;* PhD *UWO*

Duncan, R.I., BS, MS, PhD *Oklahoma*

Sherebrin, M.H., BSc *Manitoba;* MSc, PhD, PEng *UWO*

Sutherland, R.M., BSc *Acadia;* PhD *Rochester*

Honorary Lecturers

Johnson, L.N., BS *Pacific;* MS *Oregon;* PhD *Michigan*

Miller, D.M., BSc *Alberta;* PhD *McGill*

CHEMISTRY

Professors

Allnatt, A.R., BSc, PhD *London*

Bolton, J.R., BA, MA *Saskatchewan;* PhD *Cantab*

Brand, J.C.D., BSc, MSc, PhD, DSc *London*

Clark, H.C., BSc, MSc, PhD *Auckland;* PhD *Cantab* (Department Head)

Jacobs, P.W.M., BSc, MSc *Natal;* PhD, DSc *London*

King, J.F., BSc, PhD *New Brunswick*

de Mayo, P., BSc, MSc, PhD *London*

Scott, A.E., BSc, PhD *St. Andrews;* (Dean, Faculty of Science)

Stothers, J.B., BSc, MSc *UWO;* PhD *McMaster*

Warnhoff, E.W., AB *Washington U;* PhD *Wisconsin*

Associate Professors

Arnold, D.R., BS *Bethany;* PhD *Rochester*

Baldwin, H.W., BA, MA *Saskatchewan;* PhD *Chicago* (University Research Officer)

Bidinosti, D.R., BSc, MSc *Manitoba;* PhD *McMaster*

Graham, D.M., BSc, MSc *UWO;* PhD *Brooklyn Poly. Inst.*

Howell, W.C., BSc, MSc, PhD *UWO;* (Assistant Dean, Faculty of Science)

Kidd, R.G., BSc, MSc *Manitoba;* PhD *London* (Assistant Dean, Faculty of Graduate Studies)

Lorimer, J.W., BA, MA, PhD *Toronto*

Meath, W.J., BSc *Carleton;* PhD *Wisconsin*

Sukava, A.J., BSc, MSc *Manitoba;* PhD *McGill*

Willis, C.J., MA, PhD *Cantab*

Assistant Professors

Bancroft, G.M., BSc, MSc *Manitoba;* PhD *Cambridge*

Baird, N.C., BSc, PhD *McGill*

Chan, R.K., BA, PhD *Toronto*

Demas, Calliope Prevedorou-, BSc *Alexandria;* PhD *London*

Guthrie, P., BSc *UWO;* PhD *Harvard*

Haines, R.A., BSc, MSc *Dalhousie;* PhD *Pittsburgh*

Payne, N.C., BSc *Alberta;* PhD *UCLA*

Reynolds-Warnhoff, Patricia; AB *Trinity College, Washington DC;* MSc *MIT;* PhD *Southern California*

COMPUTER SCIENCE

Professor

Hart, J.F., BA, MA, PhD *Toronto* (Department Chairman)

Visiting Professor

Salomaa, A., BA, MA *Turku;* PhLic *Helsinki;* PhD *Turku*

Associate Professors

Beckhoff, G.F., Dipl Ing *Aachen;* MSc *Southern Methodist, Dallas*; DSc *Laval*

Carroll, J.M., BSc *Lehigh;* MA *Hofstra;* PhD *New York*

Gargantini, Irene, BA, PhD *Milan*

Pylyshyn, Z.W., BEng *McGill;* MSc, PhD *Saskatchewan* (joint appointment with Psychology)

Assistant Professors

Dunham, C.B., BA, MA *British Columbia,* PhD *UWO*

Mullin, J.K., BS, MS, PhD *Carnegie Mellon, Pittsburgh*

Steinby, M., BSc, MSc, PhD *Turku*

Suttie, I.P., BASc *Toronto,* MSc *UWO*

Lecturers

Bennett, J.M., BSc *Queen's;* MA *UWO*

Colpitts, B.A. (Mrs.), BSc *New Brunswick;* MSc *UWO*

Dewdney, A.K., BSc, MA *Waterloo*

Langland, K.G., BA *Saskatchewan*

Newkirk, R. (Mrs.), BSc, MSc *UWO*

Szilard, A.L., BA, MA *UWO*

Honorary Lecturers

Lake, G., BSc *Queen's* (Director of the Computing Centre)

Slemon, A.G., BA *Manitoba;* MA, PhD *Toronto;* (Professor of Psychology and Sociology, Althouse College of Education)

Instructors

Beresford, R.A., BA *Waterloo Lutheran*

Dewar, P.H., BSc, MSc *Guelph*

GEOLOGY

Professors

Dreimanis, A., Magrernat Riga; DSc *Waterloo*

Hutchinson, R.W., BSc *UWO;* MSc, PhD *Wisconsin*

Reavely, G.H., BA, MA *UWO;* DIC *Imperial College, Emeritus*

Suffel, G.G., BSc, MSc *Queen's;* PhD *Stanford,*

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*

Starkey, J., BSc, PhD *Liverpool*

Sutterlin, P.G., BSc *McMaster;* PhD *Northwestern*

Young, G.M., BSc, PhD *Glasgow*

Assistant Professors

Hodder, R.W., BA(Geol) *Queen's;* PhD *UCLA, Berkeley*

MacRae, N.D., BSc *Queen's;* MSc, PhD *McMaster*

Honorary Lecturers

Bancroft, G.M., BSc, MSc *Manitoba;* PhD *Cambridge*

Palmer, H.C., BSc *St.F.X.;* PhD *Princeton* (Associate Professor of Geophysics)

Quigley, R.M., BASc, MASc *Toronto;* PhD *MIT* (Associate Professor of Engineering Science)

GEOPHYSICS

Professors

Beck, A.E., BSc *London;* PhD *Australian National U* (Department Head)

Carmichael, G.M., BSc, MSc, PhD *UWO*

Associate Professors

Mansinha, L., BSc, MTech, IIT *Kharagpur;* PhD *British Columbia*

Mereu, R.F., BSc, MA *Toronto;* PhD *UWO*

Palmer, H.C., BSc *St.F.X.;* PhD *Princeton*

Schloessin, H.H., BSc *Zurich;* PhD *Cologne*

MATHEMATICS

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)

Magee, G.R., BA *UWO;* MS, PhD *Chicago* (part time)

Moore, J.T., BA *UWO;* MA *Wisconsin;* PhD *Chicago*

Ritcey, L.F.S., BA *Mount Allison;* MA *Harvard;* PhD *Chicago*

Thierrin, G., Licence Math; Doctorat Math. *Fribourg (Switzerland);* Doctorat Math (State Doctorat) *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*

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, N.Z.;* PhD *UWO*

Delkin, J.L., BA *Reid;* MA *British Columbia*

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 *Oxon;* PhD *Michigan State*

Robinson, I.J.W., BA, MA *Queen's;* PhD *UWO*

Strube, R.F.E., BS *Massachusetts Institute of Technology;* MS, PhD *Michigan*

Lecturers

Callaghan, Nancy L., BA, MA *UWO*

Horrocks, G., MA *Oxon;* FSA; FCIA, AIA (part time)

Mereu, J.A., BA *UWO;* FSA, FCIA (part time)

State, E.Y., BSc *Toronto;* MA *Illinois*

PHARMACOLOGY

Professors

Gowdey, C.W., BA, MSc *UWO;* DPhil *Oxon*

Parker, J.M., MD *Manitoba;* DPH, PhD *Toronto*

Associate Professors

Colhoun, E.H., BSA *Toronto;* PhD *Cantab*

Hamilton, J.T., BSc, PhD *Edinburgh*

Philp, R.B., DVM *Toronto;* PhD *UWO*

Assistant Professors

Hersey, M.L.W., BSc *McGill;* MD, PhD *UWO* CRCP(C), FACA

Hirst, M., BSc, PhD *Liverpool;* PhD *UWO*

Honorary 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)

Instructors

Dinel, B., BScPhm *Toronto;* MSc *Ohio State*

Hansford, D.F., PhmB *Toronto*

PHYSICS

Professors

Brannen, E., BA, MA *Toronto;* PhD *McGill*

Durnford, A.M.I.A.W., BA, MA *UWO;* PhD *Toronto, Emeritus*

Ferguson, H.I.S., BSc, MSc, PhD *UWO* (Administrative Assistant)

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*

McGowan, J.W., BSc *St.F.X.;* MSc *Carnegie Mellon;* DSc *Laval* (Chairman of Department)

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*

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*

Assistant Professors

Gaily, T.D., AB *Oregon State;* MS, PhD *Washington*

Gallaher, D.F., BASc, MSc *British Columbia;* MA *Toronto;* PhD *Washington*

Jarmain, W.R., BA *UWO;* MA *Wisconsin*

John, P.K., BSc *Kerala;* MSc *Madras;* PhD *Ohio State*

Jones, J., BSc, PhD *Sheffield*

Lane-Smith, D.R., BSc, MSc *Manchester;* PhD *Durham*

Lowe, R.P., BSc, PhD *UWO*

Rosner, S.D., BSc *Toronto;* MSc, PhD *Harvard*

Tunaley, J.K.E., BSc, PhD *Sheffield*

Whippey, P.W.W., BSc, PhD *Reading*

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*

PHYSIOLOGY

Professors

Armstrong, D.T., BSA *Toronto;* MS, PhD *Cornell*

Mogenson, G.J., BA, MA *Saskatchewan;* PhD *McGill*

Stevenson, J.A.F., BA, MA, MDCM *McGill;* FRSC

Associate Professors

Bondy, D.C., MD *UWO;* FRCP(C)

Calaresu, F.R., BA *Pavia;* MD *Milan;* PhD *Alberta*

Critz, J.B., BS in Ed, MA, PhD *Missouri*

Dellow, P.G., BDS, MB, BS *Adelaide;* FACDS

Harding, P.G.R., MD, MSc *UWO;* FRCS(C)

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, PhD *McGill*

Assistant Professors

Cunningham, D.A., BA, MSc *Alberta;* PhD *Michigan*

Girvin, J.P., MD *UWO;* PhD *McGill;* FRCS(C)

O'Hea, E.K., BAgrSc, MAgrSc *Dublin;* PhD *Illinois*

Stewart, D.J., BSc *British Columbia,* PhD *California, Santa Barbara*

Ziegler, W.H., MD *British Columbia;* MSc *Philadelphia*

Lecturers (sessional)

Reese, L., MDCM *Queen's;* FRCS(C); FACS

Sellery, G.R., MD *Toronto;* DA *England;* DA *Toronto;* FRCP(C)

Honorary Lecturers

Chess, G.F.H., BASc *Toronto;* MEng *McGill*

Hart, J.S., BA, MA, PhD *Toronto;* FRSC

Hinton, G.G., BSc, MDCM *McGill;* DCH FRCP(C)

Manning, G.W., MA, MD, PhD *Toronto;* FRCP(C)

Rounthwaite, F.J., BSc, MDCM *McGill;* FRCS(C), FACS

Steele, J.E., BSc *Dalhousie;* MSc *UWO;* PhD *Saskatchewan*

Instructor

Walker, Esme H., BA, MA *Toronto*

PLANT SCIENCES

Professors

Cook, F.S., BA, PhD *Toronto*

Cumming, B.G., BSc *Reading;* PhD *McGill*

Hickman, C.J., BSc, MSc, PhD *Birmingham*

McKeen, W.E., BSc, MSc *UWO;* PhD *Toronto*

McLarty, D.A., BA *UWO;* PhD *Columbia*

Wilson, D.G., BA, MA *Queen's;* PhD *Wisconsin*

Associate Professors

Cavers, P.B., BSA *Toronto;* PhD *Wales*

Greyson, R.I., BA *British Columbia;* MSc, PhD *Oregon*

Orloci, L., BSF *Sopron;* MSc, PhD *British Columbia*

Phipps, J.B., BSc *Birmingham;* PhD *UWO*

van Huystee, R.B., BA, MA *Saskatchewan;* PhD *Minnesota*

Walden, D.B., BA *Wesleyan;* MSc, PhD *Cornell* (Acting Chairman)

Wellman, Angela M., BSc, PhD *Bristol*

Assistant Professors

Day, A.W., BSc, PhD *Reading*

Fahselt, M. Dianne, BA *Saskatchewan;* PhD *Washington*

Hopkins, W.G., BA *Wesleyan;* PhD *Indiana*

Jancey, R.C., BSc, MSc *Southampton;* PhD *Sydney*

Instructors

Bohaychuk, Wendy, BSc *McGill;* MSc *Manitoba*

Chute, Marilyn, Hons BSc (Biol) *McMaster*

Day, Lynne L., BSc *Reading* (part time, joint appointment with Zoology)

Evernden, L.L.N., BSc, MSc *Alberta*

Scott, Rosemary E., BSc *Durham* (part time, joint appointment with Zoology)

Honorary Lecturers (part time)

Minshall, W.H., BSA *Toronto;* MSc, PhD *McGill*

Richardson, L.T., BA *McMaster;* MA, PhD *Toronto*

Venis, M.A., BSc *Reading;* DPhil *Oxon*

Ward, E.W.B., BSc *Wales;* MSc, PhD *Alberta*

ZOOLOGY

Professors

Battle, Helen I., BA, MA *UWO;* PhD *Toronto* (part-time)

Bourns, T.K.R., BA, MA *British Columbia;* PhD *Rutgers*

Judd, W.W., BA *McMaster;* MA *UWO;* PhD *Toronto*

Locke, M., BA, MA, PhD *Cantab.* (Department Chairman)

Scott, D.M., BSc, PhD *McGill*

Stinson, R.H., BA *McMaster;* PhD *Toronto* (Honorary)

Associate Professors

Dunbar, R.W., BA, MA, PhD *Toronto*

George, J.A., BSA *Saskatchewan;* MSA *Toronto;* PhD *UWO*

Keenleyside, M.H.A., BA, MA *British Columbia;* PhD *Groningen*

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*

Purko, J., BA, MSc, PhD *UWO*

Steele, J.E. BSc *Dalhousie;* MSc *UWO;* PhD *Saskatchewan*

Assistant Professors

Holsworth, W.N., BSc, MSc *British Columbia;* PhD *Western Australia*

Ogilvie, D.M., BSc, MSc *New Brunswick;* PhD *UWO*

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*

Instructors

Day, Lynne Lesley, BSc *Reading* (part time, joint appointment with Plant Sciences)

Moulton, Marjorie Eleanor, BSc, MSc *UWO*

Scott, Rosemary Eileen, BSc *Durham* (part time, joint appointment with Plant Sciences)

Honorary Lecturers (part-time)

Bond, E.J., BSA *Toronto;* MSc *UWO;* PhD *London*

Brown, B.E., BSc, MSc *UWO;* PhD *Illinois*

Chefurka, W., BSc *Manitoba;* MA *Montana State;* PhD *Harvard*

Colhoun, E.H., BSA *Toronto;* PhD *Cantab;* FRES

Harris, C.R., BA, MA *British Columbia;* PhD *Wisconsin*

Faculty of Social Science

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FACULTY OF SOCIAL SCIENCE

Dean

Grant L. Reuber, BA *UWO;* AM, PhD *Harvard,* Professor of Economics

Assistant Dean

David A. Chambers, BA *British Columbia;* MSc, PhD *McGill,* Associate Professor of Psychology

Administrative Offices: Room 112, University College

The Faculty of Social Science's faculty, courses and programs will be found on the following pages, organized under departments arranged alphabetically. For further information, reference should be made to the first section of this Calendar and to the University's General Information booklet.

PROGRAMS OF STUDY

The Faculty of Social Science offers the following programs leading to a Bachelor of Arts (BA) degree:

Three-year (General) Programs, with or without a major subject or approved Area of Concentration from the following fields:
Anthropology, Economics, Geography, History, Political Science, Psychology, Sociology

Three-year (General) Program in Secretarial Science.

Four-year (Honors) Programs in Economics, Economics with History options, Economics with Mathematics options, Geography, History, History combined with Economics, History and German, History and Philosophy, History and Russian, Journalism, Physical and Health Education, Political Science, Psychology, Psychology and Physiology, Psychology and Philosophy, 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 constraints of the lecture time-table.

Accuracy of Registration. It is the responsibility of the student to ensure the completeness and accuracy of his registration.

FIRST YEAR

The purpose of the First Year General Program is to offer one year of basic general education and to postpone the selection of a specific program until the second year. Thus the student can make a final decision as to his future program on the basis of university work which will 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 Programs or the second year of one of the Honors Programs.

The First Year General Program in the Social Sciences is intended to lead primarily to senior programs offered by the Departments within the Faculty of Social Science but does not preclude admission to programs in other Faculties (Arts, Science) provided that the course prerequisites are fulfilled. Similarly, admission to senior programs in the Faculty of Social Science from First Year Programs in other Faculties is subject only to the fulfilment of specific requirements.

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 elect five courses numbered from 1 to 29 and including courses from at least two of the Faculties of Arts, Science and Social Science, with no more than one course from each subject. One additional course may be elected with the permission of the Dean. 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 include among the courses elected, those required to proceed to the second year of the programs and subjects in which he may wish to continue his studies. Specific prerequisites are stated in the listings of the individual Departments of the Faculty. If in doubt, students should seek appropriate counselling and consult directly with the Department concerned.

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. Those courses considered to be core subjects are designated as Principal Courses; 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 courses in First Year.

Information regarding admission to the second and subsequent years of an Honors program can be found in the General Information section of this Calendar.

ACADEMIC COUNSELLING

The Academic Counselling Office of the Faculty of Social Science offers a full-time counselling service for all students registered (or intending to register) in the Faculty.

While counselling will be available on a year-round basis, students are strongly urged to utilize this service in resolving any academic difficulties or questions prior to registration in September. All inquiries should be directed to the Office of the Dean (University College, Room 112).

The Faculty of Social Science offers the following course which is not associated with any individual Department of the Faculty.

Social Science 31. Man in Contemporary Society. A course designed to provide students with an interdisciplinary way of exploring and understanding the relationships between themselves and society as well as the values and attitudes of society. Registration will be limited to the first 100 students who choose to register in the course and who have successfully completed at least one year in the Faculty of Social Science.
3 lecture/discussion hours – 15

ANTHROPOLOGY AND ARCHAEOLOGY

Program Director

D.L. Guemple, BA, MA, PhD *Chicago*

GENERAL COURSES

General BA students wishing to elect an area of concentration in Anthropology must earn credit in four senior Anthropology courses (full-year courses or their equivalent), and must have their program approved by the Program Director.

Not all of the following courses will be offered in 1971-72. Students should consult the Program Director before selecting their courses.

20. Introduction to Anthropology. 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 hours – 33

HONORS COURSES

Permission of the instructor is required for enrollment in the Honors Courses.

Not all of the following courses will be offered in 1971-72. Students should consult the Program Director before selecting their courses.

230a. Peoples and Cultures of North America. A survey of the social and cultural adaptations of simple societies in North America.
3 hours, (half course, first term)

231b. Peoples and Cultures of South America. A survey of the social and cultural adaptations of simple societies in South America.
3 hours – 12 (half course, second term)

232a. Peoples and Cultures of Eurasia. A surveyof the social and cultural adaptations of simple societies in Eurasia.
3 hours, (half course, first term)

233b. Peoples and Cultures of Oceania. A survey of the social and cultural adaptations of simple societies in Oceania.
3 hours – 34 (half course, second term)

234a. Peoples and Cultures of Africa. A survey of the social and cultural adaptations of simple societies in Africa.
3 hours, (half course, first term)

235a. Prehistoric Hunters. An examination of man's original condition, the hunting way of life, from its roots in the pleistocene to the advent of agriculture, with some discussion of historic hunting societies.
3 hours, (half course, first term)

236b. Food Producers. A study of the origin and spread of agriculture in the Old and New Worlds terminating with the advent of civilization.
3 hours – 13 (half course, second term)

340. Social Anthropology. An examination of the analytic models used by social anthropologists to describe and explain societies with emphasis on the comparative study of social, economic, political and religious institutions in simple societies.
Prerequisite: Sociology 30 or consent of instructor
3 hours – 9

341. *Anthropological Linguistics.* The anthropologist's use of language as an important tool in understanding culture is appraised, including consideration of the relation between language and culture and the use of the techniques of descriptive linguistics in analyzing other aspects of human behavior.
To be taken concurrently with English 43.
3 hours – 35

ECONOMICS

Chairman and Professor

R.J. Wonnacott, BA *UWO;* AM, PhD *Harvard*

Departmental Office: Room 261, University College

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 strongly advised 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.

GENERAL COURSES

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 and 1 optional tutorial hour – 15

21. Introduction to Economics. A mathematical treatment of introductory economics. Topics covered are the same as those in Economics 20.
3 lectures and 1 optional tutorial hour – 15

30. Intermediate Microeconomic Theory. A survey of microeconomic theory including theories of the firm, consumer behavior, market organization, distribution and welfare.
Prerequisite: Economics 20 or 21
3 hours – 34

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 – 13

32. Soviet Economics. Historical and doctrinal background; the structure and operation of the Soviet economy, including central planning techniques; contemporary problems. Attention will concentrate on the USSR.
Prerequisite: Economics 20 or 21
3 hours – 20

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 – 15

35. Statistics. 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 hours – 10

36. Labor Economics. A study of the labor market, wage determination and the relationship among wages, employment and prices.
Prerequisite: Economics 20 or 21
3 hours – 4

37. Economic History of Canada. An analysis of the main features of Canadian economic history. Topics will include staple trades, industrialization, transportation, land policy, money and banking, agriculture, National Economic Policy and interrelations with the USA and the world economy.
Prerequisite: Economics 20 or 21
3 hours – 9

38. Economic Development. A review of the principles of economic development and their application to contemporary problems.
Prerequisite: Economics 20 or 21
3 hours – 28

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: Economics 20 or 21
3 hours – 24

40. Seminar in Economic Policy. A discussion of policy issues of current interest.
Prerequisite: Economics 33
3 hours – 13

41. Introduction to Mathematical Economics. An introduction to the basic tools of mathematical economics and their application to economics.
Prerequisite: Economics 21 or 20, and a 20-level Mathematics course
3 hours – 1

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: Economics 20 or 21
3 hours – 31

45. Urban Economics. An analysis of theoretical and policy issues relating to urban centers. Topics will include the dynamics of urban growth, urban poverty and urban renewal, urban government, housing, transportation, industrial location.
Prerequisite: Economics 20 or 21
3 hours – 15

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: Economics 20 or 21
3 hours – 5

48. Special Topics in Economics. An analysis of selected problems in resource allocation.
Prerequisite: Permission of the instructor
3 hours – 36

49. Economic History of the United States. An analysis of the historical development of economic activity in the United States. Focus will be directed toward economic growth; the evolution of the national market during the 19th century; the changes in the urban, industrial and agricultural sectors during the 20th century.
Prerequisite: Economics 20 or 21
3 hours – 18

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 either Mathematics 254 or an Honors Mathematics course in the second year.

Mathematics 35 may not be credited as a subsidiary course in the Honors Economics program.

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 he pick up the 20-level Mathematics requirement in his second year.

Students already in the program, who will in 1971-72 enter the fourth 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

Three 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, Science or Social 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 Economics 20 or 21 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 restricted to students who have the prescribed prerequisites or the permission of the instructor.

Students who have received credit for Economics 437 prior to 1971-72 may not receive credit for Economics 497.

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 interests of the students.
Prerequisite: Economics 20 or 21
2 hours

230. Economic Theory. An outline and survey of microeconomic and macroeconomic theory, taught at an intermediate level.
Prerequisite: Economics 20 or 21
3 hours — 17

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: Economics 20 or 21
2 hours — 5

255. Statistics. 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: Economics 20 or 21
3 hours — 25

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 hours

336. Labor Economics. A study of the labor market, wage determination and the relationship among wages, employment and prices.
Prerequisite: Economics 230
3 hours — 4

339. Regional-Urban Economics. This course will focus on theoretical and policy issues relating to Canada's regions and urban centres. Topics covered will include: an analysis of regional income disparities, manpower policies, incentives for industrial location, fiscal federalism, urban renewal, poverty, housing, etc.
Prerequisite: Economics 230
3 hours — 15

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 hours — 9

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 economies, the economic consequences of various commercial policies, and the problem of international liquidity.
Prerequisite: Economics 230
3 hours — 36

360. Resource Allocation and Economic Welfare. An intensive survey of microeconomic theory, including theories of the firm, comsumption, market organization, distribution and welfare.
Prerequisite: Economics 230
3 hours — 3

400. Senior Seminar in Economic Policy. An analysis of economic policy issues of current interest.
Prerequisite: Economics 340
2 hours — 13

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 hours — 1

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 hours — 36

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 hours — 24

437. Economic History of Canada. A seminar course in selected topics concerned with growth and welfare in the Canadian past. The role of economic theory and measurement will be discussed. Topics will include the staple trades, industrialization, transportation, land policy, money and banking, agriculture, National Economic Policy, and interrelations with the U.S. and the world economy. The main features of Canadian economic growth from 1800-1950 will be analyzed in the first term followed by the discussion of more specialized topics in the second term.
Prerequisite: Permission of the instructor
2 hours – 16

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 hours – 27

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. Individual economists studied include Petty, Cantillon, Hume, Turgot, Smith, Ricardo, Malthus, Say, J.S. Mill, Marx, Javons, Menger, Walras, J.B. Clark, Bohm-Bawerk and Alfred Marshall.
Prerequisite: Economics 230 or permission of the instructor
2 hours – 20

455. Econometrics. Development of statistical ideas and concepts as employed in testing economic theories. First term is devoted to the classical regression model; second term, to developments and extensions. Topics covered in the first term include: the bivariate model as a special case of the classical regression model, nonlinear estimating forms, hypothesis testing in the context of the general linear classical regression model, partial correlation analysis, and the theory of prediction. Topics covered during the second term include: measurement errors, autocorrelated disturbances, lagged dependent variables, dummy variables, and simultaneous equation systems.
Prerequisite: Economics 255 or permission of the instructor
3 lectures and 1 tutorial hour – 5

463. Public Finance. An examination of the principles of resource allocation in the public sector. Some consideration will also be given to the financing of government expenditures.
2 hours – 8

470. Economic Development. A review of the principles of economic development and their application to contemporary problems.
Prerequisite: Economics 230
3 hours – 30

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 hours – 34

498. Current Topics in Economics. An analysis of current problems in the national and international economy.
Prerequisite: Permission of the instructor
2 hours – 12

499. Special Topics in Economics. An analysis of selected problems in resource allocation.
Prerequisite: Permission of the instructor
2 hours – 26

GEOGRAPHY

Chairman and Associate Professor

V.W. Sim, BA *McMaster;* MA *Clark;* PhD *McGill*

Departmental Offices: Room 321, Middlesex College

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 and 2 hours practical work – 3

30. Processes 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 and 2 hours practical work – 10

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 and 2 hours practical work – 35

33. Introduction to Urban and Regional Development. Spatial aspects of physical, economic and social systems in urban areas and urban-centred regions; principles of land use planning and development; current planning problems.
2 lectures and 1 hour tutorial – 6

39. Elements of Economic Geography. A conceptual interpretation of the factors influencing the spatial distribution of economic activities.
2 lectures and 2 hours practical work – 12

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 and 1 hour turorial – 18

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: 1 course in Geography or permission
2 lectures and 2 hours practical work – 31

46. World Regional Geography. A comprehensive systematic survey in world regional geography.
Prerequisite: 2 courses in Geography or permission
2 lectures and 2 hours practical work – 3

47. Geographical Aspects of North American History. An introduction to the main themes of the historical geography of North America.
Prerequisite: 1 course in Geography or permission
2 lectures and 2 hours practical work – 24

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.

Mathematics 20 or 24 is strongly recommended in the first year.

SECOND YEAR

Principal Courses

Geography 200, 230, 232, 241
During the first two years the following courses must be completed: Economics 20, Geology 20 or 21

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

HONORS COURSES

200. Quantitative Methods in Geography. Methods of analyzing geographical data; an introduction to statistical methods. Mathematics 20 or 24 is stongly recommended (may be taken concurrently).
2 lectures and 2 hours practical work – 25

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 and 2 hours practical work – 8

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 and 2 hours practical work – 35

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 and 4 hours practical work – 21

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 and 2 hours practical work – 12

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: 2 courses in Geography or permission
2 lectures and 2 hours practical work – 31

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 and 2 hours practical work – 3

430. Meteorology and Climatology. The basic meteorological processes; readings in climate classification, regional climate, microclimatology, climatic change, and applied climatology.
2 lectures and 2 hours practical work – 4

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 and 2 hours practical work – 5

432. Advanced Cultural Geography. Seminar lectures and discussions towards the development of a quantitative theoretical world cultural geography.
Prerequisite: 3 courses in Geography, including Geography 232
2 lectures and 2 hours practical work – 7

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 and 2 hours practical work – 11

434. Agricultural Geography. A general study of the factors involved in agricultural production and the classification of agricultural systems. Topical and regional studies with particular attention to tropical and underdeveloped areas.
Prerequisite: 2 courses in Geography or permission
2 lectures and 2 hours practical work – 9

435. Introduction to Resources Management. Problems of the use, misuse and deterioration of mineral, soil, biotic, water, and landscape resources.
Prerequisite: 3 courses in Geography or permission
2 lectures and 2 hours practical work – 13

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 and 2 hours practical work – 16

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 and 2 hours practical work – 5

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 and 2 hours practical work – 25

443. 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.
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 and 2 hours practical work – 10

448. Senior Seminar in Geography. Presentation and discussion of papers on various geographical subjects; informal discussion of topics of current geographical interest; occasional lectures and symposia by staff and visiting professors.
Mandatory for Fourth Year Honors
Hours by arrangement. (half course)

450. Senior Thesis. 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 Fourth Year 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. Canada. Regional aspects of the natural resources of Canada and their use; the basis of human occupance in Canada; geographical problems in national development.
Prerequisite: 3 courses in Geography or permission
2 lectures and 2 hours practical work – 22

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 and 2 hours practical work – 30

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 and 2 hours practical work – 32

463. Western Europe. A systematic analysis of the regional geography of Western Europe; type studies.
Prerequisite: 3 courses in Geography or permission
2 lectures and 2 hours practical work – 34

464. U.S.S.R. and Eastern Europe. (Not given 1971-72)
– 36

465. Middle East (Southwest Asia and North Africa). (Not given 1971-72)
– 22

466. Africa. (Not given 1971-72)
– 30

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 and 2 hours practical work – 34

468. South, East and Southern Asia (Particularly India, China, Japan). (Not given 1971-72)

HISTORY

Chairman and Associate Professor

C.A. Ruud, BA *Willamette;* AM *Harvard;* PhD *Berkeley*

Departmental Office: Room 434, Talbot College

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.

No particular History 20-series course is a prerequisite for any senior History course.

History 21, History 22, History 23, History 24, and History 25 are courses with limited enrollment.

20. Modern Europe. 1715 to the Present. */Staff*
3 hours – 14

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 – 4

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: the Salem witchcraft controversy the Brook Farm community; the Sacco-Vanzetti.
(Limited enrollment)./*Blocker*
3 hours – 9

(Course offered only at Huron College and is with the approval of the Department.)

23. An Introduction to the Study of American History: 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 – 12

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 – 36

25. A survey course in Canadian History. A Canadian survey, including the French Régime to the present. Not open to students holding credit for History 31 or 231. (Limited enrollment) */Staff*
3 hours — 24

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 course except those from which they are excluded by prerequisites.

The Department will admit General students to Honors courses on an individual basis, subject to the availability of places and the qualifications of the individual student. Permission of the instructor(s) involved is required.

All courses numbered 50 and above will have limited enrollment.

30. Mediaeval Europe. From the 4th to the 15th Centuries.*/Lander*
3 hours — 34

31. Canada. From the beginnings of the French Régime to 1957./*Staff*
3 hours — 29

32. England to 1688. A survey of English History from the Anglo-Saxons./*Skidmore*
3 hours - 10

33. British Empires. A comparative study of the theory, practice, and legacy of British Imperialism in America, India, and Africa./*Steele, Metcalf*
3 hours — 32

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./*Staff*
3 hours — 36

35. England since 1688. English political, social, economic, and diplomatic development./*Stockdale*
3 hours — 18

36. Modern Europe. From the beginning of the 16th century to 1715./*Metzger, Sea*
3 hours — 13

37. Russia. (See History 237.) General students are permitted to enrol in History 237, the introductory course in Russian history.

38. 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.'/*Early*
3 hours — 30

39. Modern China and Japan. A survey of the cultural and political condition of China and Japan at the time of the arrival of the Europeans; the impact of the West on the government, economy, society, and thought of these nations particularly since 1800./*Tsurumi, McCullough*
3 hours — 1

40. History of Modern Italy. Revolution, Counter-revolution and Democracy, 1730-1968. The course will be divided into three major sections: (1) the liberal revolution or *Risorgimento* whose origins go back to the 1730's; (2) the Fascist counterrevolution both in the Italian and international context; and (3) a survey of post-war democracy to the first years of the center-left coalition./*Santosuosso*
3 hours — 12

50. Selected Topics in Canadian History. Urbanization and the Growth of Elites in British North America, 1759-1880./*Armstrong*
Prerequisite: History 31 or permission of the instructor
3 hours — 28

51. Canadian Party Politics, 1867-1957.
Prerequisite: History 31 or permission of the instructor
(Not offered 1971-72)
3 hours — 15

52. Canadian Social History. The Impact of Industrialization, 1870-1960./*Avery*
Prerequisite: History 31 or permission of the instructor
3 hours — 5

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./*Zoltvany*
3 hours — 17

60. Selected Topics in American History.*/Staff*
Prerequisite: History 34 or permission of the instructor.
(Not offered 1971-72)
3 hours — 23

61. The United States, 1841-1901: The Prelude to Modern America.*/Fuke*
Prerequisite: History 34 or permission of the instructor
3 hours — 9

62. The United States in the 20th Century./*Hohner*
Prerequisite: History 34 or permission of the instructor
3 hours – 26

70. Selected Topics in European History.
(Not offered 1971-72)
3 hours – 4

71. Mediaeval Europe.
(Not offered 1971-72)
3 hours – 33

72. The Reformation./*Sea*
3 hours – 28

73. Modern Germany, 1848-1945./*Hahn*
3 hours – 19

74. Modern France since 1815./*Gwynne-Timothy*
3 hours – 8

75. The Habsburg Monarchy and the Balkan Peninsula./*Pavloff*
3 hours – 2

76. English Thought and Society, 1870-1914.
(Not offered 1971-72)
3 hours – 14

80. International Relations since 1945. Particular emphasis is placed on the impact of Communist ideology, the effects of changing technology, and the rise of independent states in Africa and Asia./*Hilborn*
Prerequisite: third-year standing or permission of the instructor
3 hours – 20

90. Race and Revolution in Latin America. Emphasis on the Conquest, the Wars of Independence, and the Haitian, Mexican, and Cuban revolutions.
Prerequisite: History 38 or permission of the instructor
(Not offered 1971-72)
3 hours – 22

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.

SECOND YEAR

Principal Courses

Three courses from the History 200 or 300 Series. History 231, 234 and 236 must be completed before entering Fourth Year.

Subsidiary Courses

Two options, one of which should be an Honors course. Students intending to pursue graduate studies are advised 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.

THIRD YEAR

Principal Courses

Three courses chosen from the 300 and 400 series, at least one of which must be History 330, 335, 337, 346, or 356. Permission of the instructor must be obtained for entry into a 400-series course.

Subsidiary Courses

Two options, one of which should be an Honors Course.

FOURTH YEAR

Principal courses

Three courses from the History 300 and 400 series.

Subsidiary Courses

Two options, one of which should be an Honors course.

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 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 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 years.

Optional Courses. One unrestricted option is permitted in each of the second, third and fourth years.

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, 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 a 20-level History course, Philosophy 20 and one other course as principal courses.

SECOND YEAR

Principal Courses

The History department recommends the following courses: History 231 and 236. Students are free to choose others from the History 200 and 300 series. Philosophy 254; either 256 or 257

Subsidiary Courses

One course in English
One option (a 20-level History course if not taken previously)

THIRD YEAR

Principal Courses

Two History courses to be chosen from the 300 series or, with the permission of the instructor, from the 400 series.
Either Philosophy 256 or 257; one 300 level Philosophy course

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Five Principal Courses are to be chosen
Two or three courses chosen from the History 300 or 400 series
Two or three of: Philosophy 351 or any 400 level Philosophy course

HISTORY AND RUSSIAN

See Russian and History, Russian Studies Section, Faculty of Arts

HONORS COURSES

Students in 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.

HISTORY 292 - Summer/71
Modern South East Asia

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 – 18

231. Canada. From the beginning of the French Régime to 1957./*Emery, Neary*
3 hours – 29

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. */Staff*
3 hours – 36

236. Europe and England in the 16th and 17th centuries./*Metzger, Sea*
3 hours – 13

237. Russia. A general survey of Russian history./*Pavloff*
3 hours – 25

330. The High Middle Ages. Charlemagne to the end of the 13th century./*Rowe*
3 hours – 21

333. The First British Empire. Seminar on selected areas; Elizabethan expansion to the American Revolution./*Steele, Metcalf*
3 hours – 32

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 234 or permission of the instructor
3 hours – 14

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./*Dreyer*
3 hours – 18

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 – 12

337. Russia—U.S.S.R. The 19th and 20th centuries, with emphasis on intellectual history./*Ruud*
3 hours – 6

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.'/*Early*
3 hours – 30

339. Modern East Asia. The social, economic, and political history of Modern East Asia, with emphasis on the problems of modernization in China and Japan./*Tsurumi, McCullough*
3 hours – 1

344. The United States, 1783-1877. The Development of the American Nation. Emphasis upon 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 234 or permission of the instructor
3 hours – 34

346. Modern France. From 1715 to the Present.
(Not offered 1971-72)
3 hours – 24

356. Modern Germany. 1701 to the Present./*Hahn*
3 hours – 9

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 – 26

361. New France. A detailed study of the early history of French Canada: its political, legal, and religious institutions, socio-economic organization, territorial expansion, and its evolution during the first half-century of British rule./*Zoltvany*
3 hours – 27

362. Selected Social Problems in Canadian History From the French Régime to the Present. Examination of Amerindian society, the institutions of New France, the ethnic mosaic on the prairies, the churches in Canadian Society and other themes.
(Not offered 1971-72)
3 hours

363. The Development of Western Canada and Northern Canada.
Prerequisite: History 231 or permission of the instructor
(Not offered 1971-72)
3 hours

400. Senior Thesis. With permission of the Department.

410. Urban. A study of the city in History, its evolution, problems, and influence on civilization./*Armstrong*
3 hours – 27

431. Canada since 1867. Emphasis on selected topics and seminar discussion./*Kerr*
3 hours – 7

432. England, 1399-1642. A political, social and constitutional study of England from the 15th century to the mid-17th century./*Lander*
3 hours – 10

433. The Second British Empire and Commonwealth. /*Gwynne-Timothy*
3 hours – 19

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./*Fuke*
Prerequisite: History 234 or permission of the instructor
3 hours – 17

436. Selected Topics in European Intellectual History, 1660-1900.
Prerequisite: History 236 or permission of the instructor
(Not offered 1971-72)
3 hours – 22

437. The Russian Revolutions of 1917 and the Soviet Period. Soviet political institutions, social and economic development, science, literature, and the arts. The course will conclude with an analysis of the prospects for change in Soviet society.
Prerequisite: History 237 or the approval of the instructor
(Not offered 1971-72)
3 hours

441. French Canadian Nationalism.
(Not offered 1971-72)
3 hours – 2

444. The United States in the 20th Century./*Hohner*
Prerequisite: History 234 or permission of the instructor
3 hours – 16

448. Selected Topics in Latin American History.
Prerequisite: History 338 or permission of the instructor
(Not offered 1971-72)
3 hours - 5

451. British North America. Urbanization and the Growth of Elites in British North America, 1759-1880.
(Not offered 1971-72)
3 hours – 23

452. English Constitutional History. A study of the development of the English constitution from the Anglo-Saxon monarchy to 1688.
(Not offered 1971-72)
3 hours – 35

456. European International Relations since 1871. The course includes the foreign policies of Great Britain and Continental Powers with respect to non-European nations. Lectures and seminars.
(Not offered 1971-72)
3 hours – 11

457. Warfare. With emphasis on the relations between warfare and modern political, economic, and social conditions./*Hyatt*
3 hours – 31

460. The Transition from Mediaeval to Modern Civilization. The economic, social, political, religious, and cultural developments of the period from 1300 to 1600./*Ferguson*
3 hours – 26

461. Canadian-American Relations since 1760.
(Not offered 1971-72)
3 hours – 34

JOURNALISM

Chairman and Professor

J.L. Wild, BA *UWO;* MA *Michigan*

Departmental Office: Room 302, Talbot College

GENERAL COURSES

20. Introduction to Journalism. A survey of news media with emphasis on the daily newspaper; news-writing, reporting; lectures, workshops, field trips, seminars on current events. Students who hold credit for Journalism 21 may not elect Journalism 20 unless they are registered in an Honors Journalism Program.
3 hours – 33

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 analyses of the media with reference to the main issues in the news. Students who hold credit for Journalism 20 may not elect Journalism 21, nor may Journalism 20 and Journalism 21 be taken concurrently.
3 hours – 33

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 20, 21 or permission of instructor
3 hours – 16

HONORS PROGRAM

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with Journalism 20, English 20 or 24 or 26, and two other courses as principal courses. Transfer students from other Colleges or Programs must include Journalism 20 in Second Year if it has not been completed and delay 250 until Third Year.

Students should be proficient in typewriting by the beginning of the second year.

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 in Journalism

Requirements for Admission. A degree in a field other than Journalism from a recognized university.

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, 455

HONORS COURSES

250. News Writing and Reporting. Reporting specialized fields; techniques and problems in reporting public affairs, social, economic, and political news; ethics of reporting; feature writing; pictorial journalism.
Prerequisite: Journalism 20
4 hours – 24

255. History of Journalism. A survey of the development of journalism in the British Isles, the United States and Canada.
2 hours (half course) – 25

260. Law for Journalists. Basic principles of the common law with special emphasis on access to news, legal guarantee, and limits of freedom of the press; defamation; contempt of court and copyright.
1 hour (half course) – 13

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 – 12

351. Newspaper Production. Newsroom organization; copy editing; page makeup; survey of the mechanical phases of newspaper production.
Prerequisite: Journalism 250
3 hours (half course) – 5

356. 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 (half course) – 32

375. 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 (half course) – 35

400. Newswriting and Reporting. For students registered in the Diploma Program in Journalism. Writing for mass communication; the forms and style of journalistic prose; reporting methods; news evaluation; interpretative reporting; world news editing and reporting. This course is the equivalent of Journalism 250, 350, 451.
12 hours – 5

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. Lectures, seminars.
Prerequisite: Journalism 350.
4 hours – 5

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 – 19

PHYSICAL AND HEALTH EDUCATION

Chairman and Professor

W.J. L'Heureux, BA *UWO;* MA *Michigan;* LLD *New Brunswick*

Departmental Office: Room 116, Thames Hall

GENERAL COURSES

20. Survey of Physical Education. Historical and scientific foundations; motor performance; selected health problems; physical fitness and recreation skills.
2 lectures and 2 laboratory hours – 2

31. Advanced Theory and Practice of Activities.
Prerequisite: PHE 20
1 lecture and 3 laboratory hours – 4

HONORS PROGRAM

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with Physical Education 20 and any three others as principal courses. Biology is required if Grade 13 Biology has not been successfully completed.

SECOND YEAR

Principal Courses

PHE 251 and three courses from the 200 and 300 PHE 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

PHE 351 and three courses from the 200, 300 and 400 PHE 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

PHE 451 and three courses from the 200, 300 and 400 PHE 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

241. Biomechanics. An analysis of the mechanical principles underlying efficient movement and the application of the principles to motor skills.
Half course, 3 lecture hours – 2

251. Team Games and Individual Activities. The theory and mechanics of activities; the development of personal performance skills.
2 lectures and 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 and 2 seminars – 21

255. Statistics. The methods of statistical analysis from the application of measures of central tendency to simple models of analysis of variance.
Half course, 3 lecture hours – 12

260. A History of Physical Education. A survey course in historical developments of Physical Education with special emphasis on Canadian content.
3 lecture hours – 34

340. Physical Growth and Development. The purpose of this course is to study the physical growth and motor development of the individual from conception through maturity. Attention will focus on normal patterns of physical growth; the sequential development of basic motor skills; methods of assessment and methods of classification for physical activity; learning disabilities and applications in physical education.
3 lecture hours – 13

351. Team Games and Individual Activities. The theory and mechanics of activities in addition to those studied in PHE 251.
1 lecture and 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 inter-school programs; scheduling and management of athletic contests.
Prerequisite: Completion of Second Year or permission of the instructor
1 lecture and 2 seminars – 8

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 – 32

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 – 3

402. Theory, Prescription and Application of Exercise. An examination of historical and scientific bases of various exercise forms; an appraisal of exercise as a preventative and therapeutic instrument; a theoretical and practical approach to exercise prescription.
Half course, 3 lecture hours – 9

443. Scientific Training Techniques. The investigation of modern athletic training methods with emphasis on interval training, weight training, isometric exercises and nutrition.
Half course, 2 lectures, 2 laboratories – 5

451. Team Games and Individual Activities. The study of team games with particular reference to coaching responsibilities in planning, methodology, skill analysis, personnel management, etc.; care of athletic injuries.
Prerequisite: PHE 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 lectures, 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) – 34

456. Seminar. The interpretation of physical education in its relationship to education; principles underlying programs; presentation of senior thesis.
3 hours – 14

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 lectures, 2 laboratory hours – 21

458. Sport and Culture. An analysis of the social and cultural nature of sport in contemporary society.
3 lecture hours – 27

POLITICAL SCIENCE

Chairman and Associate Professor

S.J.R. Noel, BA *Memorial;* MA, DPhil *Oxon*

Departmental Office: Room 315, Talbot College

GENERAL PROGRAM

Except as otherwise noted, Politics 20 is prerequisite for all courses in Politics unless permission of the Department is obtained.

General BA students wishing to elect an area of concentration in Political Science must consult with the Department before enrolling.

GENERAL COURSES

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 – 32

30. Canadian Government and Politics. A survey of the government institutions and political processes of Canada.
No prerequisite
3 hours – 31

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 – 7

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.
3 hours – 13

38. Political Parties and Pressure Groups. An analytical and comparative study of political parties and pressure groups.
3 hours – 29

40. The Politics of Developing Areas. A comparative analysis of social change and political process in developing areas, including Commonwealth countries.
3 hours – 17

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 – 22

44. American Government and Politics. A study of the American Constitution; institutions of government and political processes.
3 hours – 26

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 – 15

47. History of Western Political Thought. A study of the major political thinkers from Plato to Mill and Marx.
3 hours – 4

48. Western European Political Systems. A comparative study of political institutions and processes in Western European democratic states.
3 hours – 1

49. European Communist Systems. An analysis of political governmental processes in the Soviet Union and East European People's Republics.
3 hours – 6

HONORS PROGRAM

Requirements for Admission. First Year General Program (Arts, Science or Social Science) including Politics 20.

Students will normally be advised to take a diversified selection of options from the Social Science Program to be selected with the approval of the Department.

SECOND YEAR

Principal Courses

Two of: Politics 230, 231, 240, 242, 244
Three options

THIRD YEAR

Principal Courses

Two senior Honors Politics courses, including 347, if not already taken
Three options

FOURTH YEAR

Principal Courses

Politics 480
Two other senior Honors Politics courses
Two options

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 – 36

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 – 7

240. The Politics of Developing Areas. A comparative analysis of social change and political process in developing areas, including Commonwealth countries.
3 hours – 17

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 – 22

244. American Government and Politics. A study of the American Constitution, institutions of government and political processes.
3 hours – 26

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 – 13

338. Political Parties and Pressure Groups. An analytical and comparative study of political parties and pressure groups.
3 hours – 29

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 – 15

347. History of Western Political Thought. A study of the major political thinkers from Plato to Mill and Marx.
3 hours – 4

348. Western European Political Systems. A comparative study of political institutions and processes in Western European democratic states.
3 hours – 1

349. European Communist Systems. An analysis of political and governmental processes in the Soviet Union and East European People's Republics.
3 hours – 6

351. Selected Topics in Canadian Government.
3 hours – 32

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: 347 or permission of the instructor
3 hours – 33

435. Political Sociology. A critical examination of the theoretical categories employed in sociological approaches to politics and the relevance of such approaches to political theorizing.
3 hours – 31

436. Political Psychology. An examination of selected topics in the area of political psychology, including: the role of attitudes in political behavior; political ideology; personality and politics; political alienation; political socialization; and individual political decision-making.
3 hours – 10

451. International Law and Organization. A study of the principles and operations of international and regional associations such as the United Nations and NATO. An introduction to international law, emphasizing its relevance to the resolution of conflicts between nations.
Prerequisite: 231 or permission of the instructor
3 hours – 21

462. Metropolitan and Regional Government. An advanced study of the governmental structure, administration, politics, planning and financing of metropolitan and regional communities.
3 hours – 18

480. Methodology. A seminar on problems in the methodology of political science; the scope and nature of the discipline and its relationship to developments in other fields, particularly psychology and sociology.
2 hours

485. Selected Topic(s) or Author(s). A seminar.

488. The Electoral Process. An advanced study of quantitative methods employed in political analysis; an analytical and comparative study of voting behavior.
3 hours – 3

490. Thesis. With permission of the Department. Thesis to be submitted by March 15 of the Fourth Year.

PSYCHOLOGY

Chairman and Professor

W.J. McClelland, BA, MA *Toronto;* PhD *London*

Departmental Office: Room 221D, Middlesex College

GENERAL PROGRAM

General BA students wishing to elect an area of concentration in Psychology must earn credit in Psychology 20, Psychology 63, and any other three full senior Psychology courses. (Two half courses may be taken in place of any one full course.)

Students should recognize that many of the following courses have been renumbered. Consequently, credit will be given under only one of the numbers for each course, e.g., Psychology 56 (formerly Psychology 36). If a student has successfully completed Psychology 36, he will not receive credit for Psychology 56.

GENERAL COURSES

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.
Although there is no laboratory requirement, voluntary participation in approved projects will be encouraged.
3 hours – 19

50. 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.
Prerequisite: Psychology 20 or permission of instructor
3 hours (lecture) – 9

51a. Basic Principles of Learning. An introduction to some fundamental phenomena of instrumental learning and classical conditioning. Major theories of learning will be evaluated with respect to how well they account for these phenomena. (Formerly Psychology 35)
Prerequisite: Psychology 20 or permission of instructor
Half course, first term
3 hours (lecture)

52b. 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. (Formerly Psychology 35)
Prerequisite: Psychology 51a
Half course, second term
3 hours (lecture) – 29

53b. Human Learning: Basic Processes. An examination of basic principles of learning and conditioning with special reference to human behavior, including classical and instrumental conditioning; the role of simple conditioning in language and semantics; verbal associative learning; transfer of training, and perceptual-motor learning. Primary emphasis will be placed on laboratory research and theory, rather than on practical or applied situations.
Prerequisite: Psychology 51a
Half course, second term
3 hours (2 lecture, 1 demonstration) – 12

54b. 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.
Prerequisite: Psychology 51a
Half course, second term
3 hours (lecture) – 20

56. Developmental Psychology: Basic Principles. An introduction to theory and research in selected areas of child behavior, with particular emphasis on learning, motivation, perception and personality. (Formerly Psychology 36)
Prerequisite: Psychology 20
3 hours (2 lecture, 1 tutorial) – 16

57a. 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 56 or 236
Half course, first term
3 hours (Not offered in 1971-72)

58b. 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 56 or 236
Half course, second term
3 hours (Not offered in 1971-72)

59. Developmental Psychology: Exceptional Children. Problems and methods in work with the gifted, mentally deficient, physically handicapped, brain-damaged, and emotionally disturbed child. (Formerly Psychology 39)
Prerequisite: Psychology 20
2 hours (lecture) – 22

60. Developmental Psychology: Advanced Topics. An in-depth analysis of research in selected areas of developmental psychology.
Prerequisite: Psychology 56 or 236
3 hours – 24

61. Perceptual Processes. Theories of perception and psychophysical methods. The sensory and perceptual processes, their stimulus correlates and physiological bases. (Formerly Psychology 38)
Prerequisite: Psychology 20
3 hours – 25

62. Individual Differences. Quantitative methods in the study of human differences. Elementary statistics, the development and use of psychological tests, and the nature and assessment of human abilities. (Formerly Psychology 37)
No prerequisite
3 hours (lecture and tutorial) – 5

63. Research Methods. An introduction to the collection, analysis and interpretation of behavioral data. Problems in the design of experiments, operational definitions, experimental control, and recording of behavior will be considered. Statistical treatment of data, including descriptive and inferential statistics, will also be dealt with.
Prerequisite: Psychology 20
4 hours (2 lecture and 2 laboratory) – 36

65a. Biological Basis of Behavior. Structure and function of the nervous system in relation to behavior; an introduction to physiological psychology. (Formerly Psychology 43a)
Prerequisite: None, but Psychology 20 is recommended
Half course, first term
3 hours

66b. Sensory Psychophysiology. Anatomy, physiology and electrophysiology of sensory systems e.g., taste, touch, smell, vision, hearing, etc., in relation to animal and human psychophysics. Includes especially receptor-transducer mechanisms, neural pathways, and microelectrode studies of neural coding. (Formerly Psychology 43b)
Prerequisite: Psychology 65a or 343
Half, course, second term
3 hours (Not offered in 1971-72)

67b. Neural Basis of Cognitive Processes. Neural mechanisms in perception, spatial orientation, memory and language. (Formerly Psychology 43b)
Prerequisite: Psychology 65a or 343
Half course, second term
3 hours – 2

68a. Animal Behavior. Neural, hormonal, and experiential factors in the development of complex behavior patterns of mammals and other vertebrates. (Formerly Psychology 44a)
Prerequisite: Psychology 65a or 343 (either may be taken concurrently)
Half course, first term
3 hours

69b. 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. (Formerly Psychology 44b)
Prerequisite: Psychology 65a or 343
Half course, second term
3 hours – 13

70b. 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. (Formerly Psychology 44b)
Prerequisite: Psychology 65a or 343
Half course, second term
3 hours (Not offered in 1971-72)

72. 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 research and 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. (Formerly Psychology 49)
Prerequisite: Psychology 20 or permission of instructor
2 hours – 33

73a. 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.
Prerequisite: Psychology 20 or permission of instructor
Half course, first term
3 hours

74b. 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.
Prerequisite: Psychology 20 or permission of instructor
Half course, second term
3 hours – 34

75a. Psychological Analyses of Current Social Problems. Issues examined will depend on students' interests but may include such topics as the psychology of revolution, problems of urbanization, minority group relations, drug abuse, psychology and the law, etc. Enrollment will be limited and a major research project will be required to each student.
Prerequisite: permission of instructor
3 hours (seminar), (half course, first term)

77b. Theories of Personality. A research-oriented analysis of representative personality theories. (Formerly Psychology 31)
No prerequisite
Half course, second term
3 hours (lecture) – 6

78a. Personality Assessment and Research. An examination of typical personality assessment techniques; consideration of methods and findings of research on personality; analysis of the issues involved in the empirical investigation of

personality. (Formerly Psychology 31)
No prerequisite
Half course, first term
3 hours (lecture and demonstration)

79. 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 48)
Prerequisite: any one full Psychology course
3 hours (lecture) — 18

81. Applied Psychology. The relevance of psychology to practical problems, personal, interpersonal and organizational, in education, industry and the wider community. While exposed to the approach of representative humanistic psychologists, particularly Maslow and Rogers, students have much freedom of choice in their work and the opportunity to participate in decisions affecting course direction and management. (Formerly Psychology 46)
No prerequisite
2 hours — 10

82a. Educational Psychology. The use of behavioral principles in school. Human learning and instruction, appraisal of student motivation, ability and performance.
Prerequisite: Psychology 62 or 255 or 337 or permission of instructor
Half course, first term
3 hours (Not offered in 1971-72)

83b. Industrial Psychology. The use of behavioral principles in industry. Problems in personnel selection; organizational psychology; employee morale.
Prerequisite: Psychology 62 or 255 or 337 or permission of instructor
Half course, second term
3 hours (Not offered in 1971-72)

84b. Occupational Psychology. An appraisal of the relationship between human abilities and personality and occupational choice, performance and tenure.
Prerequisite: Psychology 62 or 255 or 337 or permission of instructor
Half course, second term
3 hours — 3

86. Human Information Processing. Information processing, cybernetics, computer simulation, and related classes of formal models of learning, perception, cognition, language and memory.
Prerequisite: Psychology 20, plus one Mathematics plus one Computer Science course OR permission of instructor
3 hours — 14

87. Thinking Processes. Topics to be covered may include conceptual thinking, problem-solving, creative thinking, reasoning, judgments, and decision-making.
Prerequisite: Psychology 20
(Not offered in 1971-72)
3 hours — 31

88. Language and Memory Processes. Topics to be covered may include verbal learning, verbal behavior, psycholinguistics, and memory.
Prerequisite: Psychology 20
3 hours — 4

89a. Mathematical Psychology. An introduction to the methods and areas of application of mathematical Psychology. Emphasis will be on stochastic models of psychological processes, such as judgment, detection and discrimination, choice and perference, motivation, learning and memory.
Prerequisite: A Mathematics course (University level)
Half course, first term
3 hours (Not offered in 1971-72)

90b. Alternative Approaches to the Study of Psychology. An examination of some of the critiques of the science as presently practised and a survey and comparison of some of the proposed alternatives which may on various occasions include a phenomenological approach as well as rationalistic (Chomsky) and structuralistic or genetic (Piaget) methods.
Prerequisite: Psychology 20 and any two senior Psychology courses
Half course, second term
3 hours (Not offered in 1971-72)

91a. Contemporary Issues. These one-term courses will deal with selected topics of current interest in Psychology. A list of the topics to be included and a course description will be available at the time of registration.
Prerequisite: Psychology 20 and consent of instructor
Half course, first term
3 hours (Not offered in 1971-72)

92b. Contemporary Issues. See above.
Prerequisite: Psychology 20 and consent of instructor
3 hours (Not offered in 1971-72)

HONORS PROGRAMS

Requirements for Admission. First year General Program with Psychology 20 and any three others as principal courses. Grade XIII Mathematics A or Mathematics 10 must have been completed as well, or some equivalent Mathematics course.

All Honors Psychology courses taken in any year will be considered as principal courses for the purpose of calculating the average grade. All subsidiary courses must be approved by the Department.

Students should recognize that some of the following courses have been renumbered. Consequently, credit will be given under only one of the numbers for each course, e.g., Psychology 331 (formerly Psychology 450). If a student has successfully completed Psychology 450, he will not receive credit for Psychology 331.

SECOND YEAR

Principal Courses

Psychology 235, 255
One of: Psychology 234, 236

Subsidiary Courses

Two options

THIRD YEAR

Principal Courses

Three of: Psychology 331, 337, 338, 343, 349

Subsidiary Courses

Two options

FOURTH YEAR

Principal Courses

Psychology 459
Two of: Psychology 445, 446, 448

Subsidiary Courses

Two options

PSYCHOLOGY AND PHYSIOLOGY

Requirements for Admission. First Year General Program (Science) with Psychology 20, Biology 22 or Zoology 20, Chemistry 20, Physics 20, as principal courses. Applied Mathematics 20 or Mathematics 24 or 27 is recommended as one option.

SECOND YEAR

Principal Courses

Psychology 235, 255
Chemistry 203
Zoology 255 or 270
One of: Physics 204, 256; Applied Mathematics 20, 200; Mathematics 20, 24, 27, 250

Subsidiary Course

One option

THIRD YEAR

Principal Courses

Psychology 338, 343
Physiology 300, 301
One of: Anatomy 300; Biochemistry 300

Subsidiary Course

One option

FOURTH YEAR

Principal Courses

Physiology 463, 464, 480
Physiology 460 and 466 OR 461 and 462
Two of: Psychology 234, 236, 331, 337, 349, 445, 446, 448

Subsidiary Course

One option

Students in this program will undertake a major project in behavioral physiology or sensory processes as part of their experimental work in Physiology 480.

PSYCHOLOGY AND PHILOSOPHY

Requirements for Admission. First Year General Program (Arts, Science or Social Science) with Psychology 20 and Philosophy 20 as principal courses. If Psychology 20 was not taken in the First Year, it must be slected as an option in the Second Year.

SECOND YEAR

Principal Courses

Psychology 235, 236, 255
Philosophy 254, either 256 or 257

THIRD YEAR

Principal Courses

Psychology 338, 349
One of: Psychology 331, 337, 343
Philosophy 256 or 257, and one 300 level Philosophy course

FOURTH YEAR

Principal Courses

Psychology 445, 459
One of: Psychology 446, 448
Two of: Philosophy 351, or any 400 level Philosophy course

HONORS COURSES

234. Historical Systems. A study of persistent problems in the history of psychology and an introduction to the traditional systems of Psychology: Structuralism, Functionalism, Behaviorism, Gestalt Psychology, and Psychoanalysis.
2 hours — 24

235. Experimental Psychology I: Learning and Motivation. The modification of behavior through experience, with primary emphasis on laboratory studies of simple learning processes in animals. Human learning and motivation are also discussed.
2 lectures, 2 laboratory hours — 12

236. Developmental Psychology. An introduction to theory and research in selected areas of child behavior, with particular emphasis on learning, motivation, perception, and personality.
2 lectures and 2 seminar hours – 16

255. Statistical Methods. Statistical techniques applicable to the treatment of psychological data; elementary research design.
2 lectures, 1 laboratory hour – 25

331a. Theories of Personality. Research-oriented analysis of representative personality theories. (Formerly Psychology 450)
Half course, first term
3 hours (lecture)

331b. Personality Assessment and Research. Examination of typical personality assessment techniques; consideration of methods and findings of research on personality; analysis of the issues involved in the empirical investigation of personality. (Formerly Psychology 450)
Half course, second term
2 lectures, 2 laboratory hours – 16

337. Tests and Measurements. Discussion of basic considerations in measurement; description and evaluation of typical measuring instruments and their uses; consideration of persistent problems in the field of measurement.
2 lectures, 2 laboratory hours – 23

338. Experimental Psychology II: Sensation and Perception. Critical examination of methods, findings, and theory.
2 lectures, 2 laboratory hours – 11

343. Physiological and Comparative Psychology. Neural and endocrine foundations of behavior; learned and unlearned behavior in selected invertebrate and vertebrate organisms.
2 lectures, 2 laboratory hours – 17

349. Social Psychology. Theory and measurement of human social behavior with emphasis on empirical studies of individuals in response to their environment. Topics include: culture and personality; ethnic prejudice; psycholinguistics; propaganda; group structure; mass behavior.
2 hours – 33

445. Cognitive Processes. Theory and empirical findings concerning thinking processes such as concept formation, problem solving, and creativity.
2 hours – 5

446. Applied Psychology. Emphasis will be given to the humanistic psychologies and their relevance to the understanding of personal growth, interpersonal relations and organizational behavior in education, industry and the community at large. Students normally participate in decisions affecting course direction and management. Sensitivity training and other forms of practical experience are available.
2 seminars, 2 laboratory hours – 27

448. 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.
Prerequisite: Psychology 331
3 hours (seminar) – 13

459. Research Problems. A seminar course in which students will select topics for special investigation.
3 hours

460. Experimental Psychology. Laboratory and seminars dealing with methods, findings, and theory in sensation, perception, and learning as well as the development of research problems for individual investigation.
Prerequisite-year students only
2 lectures, 2 laboratory hours

461. Contemporary Theory. A critical examination of the theories of representative contemporary psychologists.
Prerequisite-year students only
2 hours – 1

SECRETARIAL SCIENCE

Chairman and Associate Professor

Elaine M. Chapman (Mrs.), BA *UWO*

Departmental Office: Room 139A, University College

Requirements for Admission. Grade 13 standing (with a minimum average of 60%) in English and five other credits.

The Department of Education of Ontario accepts a degree in this program as the academic qualification for High School Assistant's Certificate, Type B, for teaching in the Elementary or Secondary schools of Ontario.

Enrollment is limited and students are admitted on the quality of their Secondary School certificate.

Prospective students in Secretarial Science may receive counselling from any faculty member of the Department of Secretarial Science from June 16 to July 7, 1971 and if necessary at other times by appointment.

FIRST YEAR

Secretarial Science 28-29
Business 20
English 20
Two options (Computer Science 20 recommended)

Students who, prior to registration, pass tests in Secretarial Science 28 and 29 will take a third option and will also attend some classes in Secretarial Science 28 and 29 as determined by the Department.

SECOND YEAR

Secretarial Science 35, 37
Economics 20
A Senior English
Two options, one of which must be a senior course

THIRD YEAR

Secretarial Science 30
Secretarial Science 45, 47
A Senior English
Two Senior options

COURSES

28-29. Shorthand. A thorough training in the principles of Pitman Shorthand: dictation at a speed of 60 words a minute with typed transcription of notes.

Typewriting. Mastery of the keyboard; training in speed and accuracy; letter styles; display; simple tabulation; manuscripts.
One full course credit
11 hours

30. Accounting and Bookkeeping. Prescribed for Secretarial Science students. Provides practical and basic applications of accounting relating to the sole proprietorship form of business organization, as well as to the partnership and corporate types of organization.
3 hours

35. Shorthand. Emphasis on speed building and vocabulary development with typed transcription of notes; office style dictation and transcription given weekly.

Typewriting. Further emphasis on speed and accuracy; letter composition; advanced tabulation; financial statements; organization charts; graphs.
Prerequisite: Secretarial Science 28-29
8 hours

37. Office Practice. Lectures in routine office procedures including letter composition, filing, postal and telephone services, methods of duplicating, etc.
Prerequisite: Secretarial Science 28-29
1 lecture and 2 hours practical work – 3 hours

45. Shorthand. Further speed development to 130 words a minute on 3-5 minute "takes"; typed transcription of notes.

Typewriting. Further speed and accuracy development in typing.
Prerequisite: Secretarial Science 35
6 hours

47. Office Practice. Lectures are given on secretarial duties, office organization, the administration of services, the problems of office personnel.

Students apply their skills and knowledge to realistic office situations both in University offices and in their own student office.
Prerequisite: Secretarial Science 35, 37
1 lecture and 8½ hours practical work – 9½ hours

SOCIOLOGY

Chairman and Associate Professor

E.T. Pryor, BA *Saint Thomas Aquinas;* MA *Michigan State;* PhD *Brown*

Departmental Office: Room 81, University College

GENERAL PROGRAM

General BA students wishing to elect an area of concentration in Sociology must earn credit in Sociology 20, 30 and 31 plus any two senior Sociology courses numbered 32 or above and must have his program approved by the Department.

GENERAL COURSES

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 hours – 35

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
3 hours – 14

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
3 hours – 12

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.
3 hours – 1

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
3 hours – 23

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 Department
3 hours – 9

38. 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 Department
3 hours – 5

39. The Family. Sociological, psychological, and other research perspectives on family structure and functioning.
Prerequisite: Sociology 20 or permission of the Department
3 hours – 8

40. Social Problems. Study of theories of deviant behavior and of social disorganizations, with particular attention to certain specific problems of the contemporary period.
Prerequisite: Sociology 20 or permission of the Department
3 hours – 21

41. Communication and Social Character. Analysis of attitude formation and the role of symbolic systems on social character and collective behavior. Utilizes sociological, communication and general social psychological theory dealing with the function of communications 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 Department
3 hours – 31

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 Department
3 hours – 36

44. Collective Behavior. Basic forms of collective behavior 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 Department
3 hours – 4

45. Applied Sociology. The application of sociological theory and method to selected problems in urban society.
Prerequisite: Sociology 20 or permission of the Department
3 hours – 20

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 Department
3 hours – 17

47. Group Behavior. Psychoanalytic, cognitive and behavioral theories are evaluated in relation to selected topics including motivation, traits, attitudes, conformity, prejudice and group behavior.
Prerequisite: Sociology 20 or permission of the Department
3 hours – 13

48. Social Institutions. An analysis of the structure and interrelationships of economic, political and other social institutions.
Prerequisite: Sociology 20 or permission of the Department
3 hours – 34

HONORS 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.

SECOND YEAR

Principal Courses

Sociology 230, 231
One of: Sociology 232, 233, 236

Subsidiary Courses

One other Sociology course
Two options

THIRD YEAR

Principal Courses

Two 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 Honors students must be approved by the Honors Program Adviser.

HONORS COURSES

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.
3 hours – 4

231. Methodology and Statistics. A survey of basic procedures used in the collection, reduction and statistical analysis of data.
3 hours – 9

232. Population Studies. A study of the major population trends and their impact upon industrialized and developing societies.
3 hours – 20

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.
3 hours – 24

236. Social Organization. A comparative analysis of terms of association and group structure from primary groups to complex bureaucratic structures.
3 hours – 28

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 Honors Sociology course
3 hours – 10

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.
3 hours – 16

340. Sociology of Deviance. An examination of some basic approaches to the study of deviant behavior with special emphasis on problems in concept termination, measurement and theory construction.
3 hours – 27

399. Selected Topics in Sociology. Reading and discussion in selected topics in Sociology.
3 hours – 36

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 231 or another Honors Sociology course
Half course, first term
3 hours

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 another Honors Sociology course
3 hours, half course, first term

404a. Historical Sociological Theory. A survey of historical and contemporary sociological theory.
Prerequisite: Sociology 230 or another Honors Sociology course
Half course, first term
3 hours

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.
Half course, first term
3 hours

434b. Human Ecology. The consideration of the concepts of human ecology as applicable to the interrelationships of population, environment, technology and organization in society.
Half course, second term
3 hours – 16

438a. Canadian Society. The structure and functioning of Canadian society. An examination of the political, economic, cultural and value structures and processes.
Half course, first term
3 hours

441a. Small Groups. Empirical study of social psychological phenomena with an introduction to empirical laboratory and field methods used in social psychology.
3 hours, 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.
Half course, second term
3 hours – 20

452b. Political Sociology. An analysis of social stratification research and theory as related to the role of power and politics in contemporary society.
Half course, second term
3 hours – 28

453a. Sociology of Occupations and Professions. An analysis of the development and structure of occupations and professions.
Half course, first term
3 hours

454b. Industrial Sociology. An inquiry into the development and structure of major industrial organizations, labor unions, and management-labor relations.
Half course, second term
3 hours – 4

455b. Sociology of Law. An analysis of the legal institutions and processes in contemporary society.
Half course, second term
3 hours – 9

456b. Sociology of Religion. An analysis of the interactions between religious belief systems and institutions and the major institutional areas of society.
Half course, second term
3 hours – 18

457b. Sociology of Education. A comprehensive study of educational institutions in modern society.
Half course, second term
3 hours – 13

461b. Communications. The study of patterns of mass culture, mass media and their relationship to social factors.
Half course, second term
3 hours – 10

MEMBERS OF THE FACULTY OF SOCIAL SCIENCE

ANTHROPOLOGY

Associate Professor

Guemple, D.L., BA, MA, PhD *Chicago* (Visiting)

Instructor

Gehman, J.G., BA *Grinnell College*

ECONOMICS

Chairman and Professor

Wonnacott, R.J., BA *UWO;* AM, PhD *Harvard*

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*

Kadiyala, K.R., BSc *Andhra;* MStat *ISI;* PhD *Minnesota*

Melvin, J.R., BSc *Manitoba;* MA *Alberta;* PhD *Minnesota*

Reuber, G.L., BA *UWO;* AM, PhD *Harvard* (Dean of Social Science)

Associate Professors

Pattanaik, P.K., BA *Utkal;* MA, PhD *Delhi*

Thanh, P.C., BComm, PhD *New South Wales (Visiting)*

Assistant Professors

Baguley, R.W., BA *UWO;* AM, PhD *Harvard*

Batra, R.N., BA *Punjab;* MA *DSE;* PhD *Southern Illinois*

Bhatia, K.B., BCom, MCom *Delhi;* PhD *Chicago*

Conklin, D.W., BA *Toronto;* PhD *MIT*

Dick, T.J.O., BA *Carleton;* MA, PhD *Washington*

Fried, J.S., BA *Stanford;* PhD *Northwestern*

Haessel, W.W., BSc, MSc *Alberta;* PhD *Iowa State*

Johnson, H.T., AB *Harvard;* MBA *Rutgers;* MA, PhD *Wisconsin*

Kirkham, P.G., BASc *British Columbia;* MBA, MA *UWO;* PhD *Princeton*

Leith, J.C., BA *Toronto;* MSc, PhD *Wisconsin*

Parai, L., BA *Alberta;* MA *Toronto;* PhD *Yale*

Plourde, C.G., BA, MA *Queen's;* PhD *Minnesota*

Rao, V.S., BA *Andhra;* PhD *Minnesota*

Saraydar, E., AB *Syracuse;* AM, PhD *Rochester*

Smith, B.E., BCom *Carleton* (Assistant to Chairman-Administration)

Tanner, J.E., AB *California;* PhD *Brown*

Toda, Y., BA, MA *Tokyo;* PhD *Harvard*

Vickery, W.E., BE *Vanderbilt;* MBA *Harvard;* PhD *Chicago*

Lecturers

Andrieu, R.Y.M, MA *Washington*

Avio, K.L., BS *Oregon* (Visiting)

Baumann, H.G., BA *Windsor;* MA *Michigan*

Blomqvist, A.G., Civ-ekonom *Stockholm*

Boyer, R.S., BA *Columbia;* MA *Wisconsin* (Visiting)

Burgess, D.F., BA *Queen's;* MA *UWO*

Clark, C.S., BA *Queen's*

Friedberg, S.J., BA *City College of New York;* MA *Chicago* (Visiting)

Gately, F.D., BS(Math) *Holy Cross College;* MA *Princeton* (Visiting)

Jondrow, J.M., BA *Wisconsin*

Ketchum, E.J.D., BA *Toronto;* MSc *LSE;* MA *Princeton*

Kochin, L.A., BA *Temple* (Visiting)

May, J.D., BCom *Queen's*

Roy, P.N., BA *McGill*

Schmundt, Maria, Diplom-Volkswirt *Frankfurt*

Tomlinson, P.G., BA *Carleton* (Visiting)

Valentine, T.J., BEc *Sydney*

GEOGRAPHY

Chairman and Associate Professor

Sim, V.W., BA *McMaster;* MA *Clark;* PhD *McGill*

Professors

Hossé,H.A., BA, MA *Manitoba;* PhD *Ottawa*

Nicholson, N.L., BA, MSc *UWO;* PhD *Ottawa;* FRGS

Packer, R.W., BA, MA *Cantab;* FRGS

Philbrick, A.K., BA, MS, PhD *Chicago*

Pleva, E.G., BA, MA, PhD *Minnesota*

Associate Professors

Bjorklund, Elaine M., BSc *Utah;* MA *Washington;* PhD *Chicago*

Bunge, W., BA *Beliot;* MA *Wisconsin;* PhD *Washington* (Visiting)

Langtvet, O.P., CMag, CPhil *Oslo*

McDaniel, R., BA, MA *UWO*

Taylor, H.W., BA *Westchester State;* MA *Indiana;* PhD *Maryland*

Whebell, C.F.J., BA, MSc *UWO;* PhD *London*

Wightman, R.W., BA, MA *UWO;* PhD *Durham*

Assistant Professors

Butler, R.W., BA *Nottingham*

Day, J.C., BSc, MSc *UWO;* PhD *Chicago*

Goodchild, M.F., BA *Cantab;* PhD *McMaster*

Janelle, D.G., BA *Southwestern Louisiana;* MA, PhD *Michigan State*

King, R.H., BSc *Swansea;* MSc *Aberdeen;* PhD *Saskatchewan*

Troughton, M.J., BA, MA *UWO;* BLitt *Oxon*

Lecturers

Cecil, R.G., BSc, MA *McGill*

Code, W., BA *Queen's*

White, R., BA *Swarthmore;* MA *North Carolina*

Instructor

Clarke, V., BA, MA *Punjab*

Map Curator

Sauer, S., BA *UWO*

HISTORY

Chairman and Associate Professor

Ruud, C.A., BA *Willamette;* AM *Harvard;* PhD *Berkeley*

Professors

Balderston, W., BA, PhD *Cornell*

Ferguson, W.K., BA, MA, PhD *Cornell;* LittD *UWO;* FRSC

Graham, G.S., BA, MA *Queen's;* AM *Harvard;* PhD *Cantab;* FRHistS Rhodes Professor of Imperial History, *King's College, University of London* (Visiting)

Kerr, D.G.G., BA *McGill;* PhD *London*

Lander, J.R., BA, MA, MLitt *Cantab;* FRHistS; *J.B. Smallman Professor of History*

Overton, R.C., AB, AM *Williams;* AM, PhD *Harvard*

Rowe, J.G., AB *Harvard;* BD *Episcopal Theological School, Cambridge, Mass.;* MA, PhD *Toronto* (Dean of Arts)

Talman, J.J., BA, MA *UWO;* PhD *Toronto;* DLitt *Waterloo;* FRSC

Wade, H. Mason, MA *McGill;* LLD *New Brunswick;* DésL *Ottawa*

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*

Emerson, R.L., BA *Dartmouth;* MA *Brown;* PhD *Brandeis*

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., AB *Stanford;* MA, PhD *Washington*

Steele, I.K., BA *Alberta;* PhD *London*

Stockdale, W.H., BA, MA *Alabama;* PhD *New York* (Assistant Dean of Graduate Studies)

Zoltvany, Y., BA *Loyola;* MA *Université de Montreal;* PhD *Alberta*

Assistant Professors

Cornwall, P.G., BA *Toronto;* AM *Michigan*

Emery, G.N., BA *Queen's;* PhD *British Columbia*

Guinsburg, T.N., AB, MA, PhD *Columbia*

Hoffman, D.S., BA *Syracuse;* PhD *Delaware*

Metzger, F.K., BA *Bowdoin;* MA *Pennsylvania;* PhD *Rutgers*

Morton, D., BA *RMC;* MA *Oxford;* PhD *London* (Visiting)

Neary, P.F., BSc, MA *Memorial;* PhD *London*

Lecturers

Avery, D.H., BA, MA *Manitoba*

Miller, Arlene A., BA *Valparaiso;* AM *Stanford*

Osuntokun, J., BA *Ibadan*

Pavloff, V.N., BASc *British Columbia;* BA *Carleton;* MA *Berkeley*

Rider, P.E., BA *Carleton;* MA *Toronto*

Santosuosso, A., BA, MA *Toronto*

Simpson, C.M., BA *Notre Dame,* MA *Stanford*

JOURNALISM

Chairman and Professor

Wild, J.L., BA *UWO;* MA *Michigan*

Professor

Beattie, E., BA *Manitoba;* BEd *Toronto;* MA *State U. of Iowa*

Associate Professor

Key, W.B., BA *Mexico City College;* MA *California* (Visiting)

Assistant Professors

Bambrick, F.K., BA *UWO*

Laing, M.M., BA *UWO;* MS *Wisconsin*

Laplante, R., BA *UWO*

Wilson, C.E., BA *UWO;* MSc *Northwestern*

Lecturers (Part time)

Farquhar, K.B., LLB *Victoria, N.Z.;* LLB *Michigan;* LLM *Victoria, N.Z.*

Heine, W.C., BA *UWO*

O'Neail, J., BA *UWO*

PHYSICAL AND HEALTH EDUCATION

Chairman and Professor

L'Heureux, W.J., BA *UWO;* MA *Michigan;* LLD *New Brunswick*

Professors

Fairs, J.R., BSc *UWO;* MA *Columbia*

Yuhasz, M.S., BA *UWO;* MS, PhD *Illinois*

Associate Professors

Berzins, Elfrida (Mrs.) MM *Riga*

Eynon, R.B., BA *UWO;* MS *Illinois*

Wearring, G., BA *UWO;* MS *Southern California*

Assistant Professors

Cosentino, F., BA *UWO;* BPE *McMaster;* MA *Alberta*

Cunningham, D., BA *UWO;* MSc *Alberta;* PhD *Michigan* (Research Associate)

Gonser, G.I., BSc, MA *Michigan*

Leyshon, G., BA *UWO;* MS *Illinois*

Milne, D.C., BA, MPE *McMaster;* MA, PhD *Michigan State*

Paton, G.A., BA *UWO;* MA *Michigan;* PhD *Illinois*

Petrie, B.M., DipPE *Sydney;* BPE, MA *Alberta;* MA, PhD *Michigan State* (Visiting)

Richardson, J.R., BPHE *Toronto;* MSc *Alberta*

Taylor, Margaret J., BPHE, BA *Toronto*

Watson, R.C., BA, BPE *McMaster;* MSc *Alberta*

Lecturers

Funston, Gail (Mrs.), BA *UWO*

Hayes, D.L., BPE *Alberta;* MSc *Oregon*

Hill, J.S., DPE *Jorden Hill College;* MA *UWO*

Reid, Elizabeth (Mrs.), BA *UWO;* MSc *Illinois*

Singh, Baljeet (Mrs.), BA *Lady Shri Ram College;* MS *Springfield*

Smith, G.J., BPE *Alberta;* MA *UWO*

Vigars, R.J., BSc *Southern Illinois;* MA *California*

Instructor

Moxley, Susan (Mrs.), BA *UWO*

POLITICAL SCIENCE

Chairman and Associate Professor

Noel, S.J.R., BA *Memorial;* MA, DPhil *Oxon*

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*

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 *Brandon College;* PhD *Alberta*

Sansom, T.R., BA *New Brunswick;* PhD *London*

Assistant Professors

Harvey, T.G., BA *Florida State;* MA, PhD *Hawaii*

Khanh, H.K., BA *Johns Hopkins;* MA *Lehigh*

Miller, A.J., BSc *LSE;* MA *McMaster;* PhD *McGill*

Vernon, R.A., BA *Trinity;* PhD *London*

Lecturers

Cohn, T.H., BA *Michigan;* MA *Wayne State*

Hrabik, Mary J., BA *Notre Dame;* MA *Fordham*

Leishman, R.J.W., BA, MA *Queen's*

McDougall, A.K., BA *McGill;* MA *Carleton*

Murray, G.P., BSc *London;* MA *Lehigh*

Sancton, A.B., BA *Bishop's;* DPhil *Oxon*

Westmacott, M.W., BA *Calgary;* MA *Carleton*

Wright, B.H., BA, MA *Toronto*

Instructors (Part Time)

Chambers, Elizabeth J., BA *British Columbia;* MA *Saskatchewan*

Leach, Phyllis G., BA *Heidelberg;* MA *Chicago*

Macdonald, I.T.M. BA *Alberta*

PSYCHOLOGY

Chairman and Professor

McClelland, W.J., BA, MA *Toronto;* PhD *London*

Professors

Bartoshuk, A.K., BSc *Sir George Williams;* MSc, PhD *McGill*

Gardner, R.C., BSc *Alberta;* MSc, PhD *McGill*

Jackson, D.N., BSc *Cornell;* MS, PhD *Purdue*

Mogenson, G.J., BA, MA *Saskatchewan;* PhD *McGill*

Neal, Leola E., BA, MA, PhD *Toronto* (DipLClin) (Dean of Women)

Paivio, A.U., BSc, MSc, PhD *McGill*

Rokeach, M., BA *Brooklyn;* MA, PhD *California* (Visiting)

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*

Associate Professors

Bucher, B., AB *Knox;* PhD *Princeton;* PhD *Pennsylvania*

Chambers, D.A., BA *British Columbia;* MSc, PhD *McGill* (Assistant Dean of Social Science)

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*

Pylyshyn, Z.W., BEng *McGill;* MSc, PhD *Saskatchewan*

Reitz, W.E., BS *Pennsylvania State;* MA *Illinois;* PhD *Pennsylvania State*

Schnore, M.M., BA, MA *UWO;* PhD *McGill*

Siess, T.F., BA *Valparaiso;* PhD *Minnesota*

Stennett, R.G., BA, MA *UWO;* PhD *McGill* (Part Time)

Taylor, F.W.R., BA, MA, PhD *Toronto*

Vanderwolf, C.H., BSc *Alberta;* MSc, PhD *McGill*

Wilkinson, F.R., BA *Utah;* MA *Hawaii;* PhD *Michigan State*

Assistant Professors

Baran, D., BA *McGill;* MA *Columbia;* PhD *Michigan*

Boles, J.I., BA *Cornell;* PhD *Indiana*

Carlson, P.M., BS *Wisconsin;* PhD *Washington*

Chamberlain, L.W., BSc *UWO;* PhD *Keele*

Fay, T.L., BA *Michigan;* MS, PhD *Northwestern*

Goodstadt, M.S., BA *Manchester;* PhD *Stanford*

Murphy, K.C., BA, PhD *Minnesota*

Murray, H.G., BA, MA *UWO;* PhD *Illinois*

Pederson, D.R., BA *Minnesota;* MA, PhD *Iowa*

Prytulak, Luby S., BA *Toronto;* PhD *Stanford*

Roberts, W.A., BS *Maryland;* MA, PhD *Bryn Mawr*

Rollman, G.B., BA *Rochester;* MA, PhD *Pennsylvania*

Simner, M.L., BA *Syracuse;* MSc *North Carolina State;* PhD *Cincinnati*

Smeriglio, V.L., BA *Brown;* MA, PhD *Iowa*

Van Fleet, F.M., BA, MA *McMaster;* PhD *Colorado*

Vidmar, N.J., AB *MacMurray;* AM, PhD *Illinois*

Honorary Lecturer

Stevenson, J.A.F., BA, MA, MD, Cm *McGill;* (Dean of Graduate Studies)

Lecturers

Burron, B.F., BA, MA *Manitoba*

Prytulak, Dorothy S., BA *Toronto*

Siegel, J.A. (Mrs.), BA *Purdue*

Siegel, W., BA *Toronto*

Sorrentino, R.M., BA *SUNY Buffalo;* MA *American*

SECRETARIAL SCIENCE

Acting Chairman and Associate Professor

Chapman, Elaine M. (Mrs.), BA *UWO*

Associate Professor

Waller, Roma L. (Mrs.), BA *UWO;* MA *Columbia*

Assistant Professors

Davis, Patricia F., BA *UWO*

Seldon, Betty D. (Mrs.), BA *UWO*

Lecturer

Hartry, Marilyn J. (Mrs.), BA *UWO*

SOCIOLOGY

Chairman and Associate Professor

Pryor, E.T., BA *St. Thomas Aquinas;* MA *Michigan;* PhD *Brown*

Professor

Skipper, J.K., BS *Northern Illinois;* MA, PhD *Northwestern* (Visiting)

Associate Professors

Balakrishnan, T.R., BA, MA *Madras;* PhD *Michigan*

George, P.M., BA *Earlham;* MA *Boston;* PhD *North Carolina*

Rinehart, J.W., BA, MA *Michigan State;* PhD *Ohio State* (Visiting)

Singer, B.D., BA *Wayne State;* MA, PhD *Pennsylvania*

Assistant Professors

Ball-Rokeach, Sandra J. (Mrs.), BA, MA, PhD *Washington* (Visiting)

Boydell, C.L., BA *Rutgers;* MA, PhD *Massachusetts* (Visiting)

Ebanks, G.E., BA *London;* MA, PhD *Cornell*

Grindstaff, C.F., BA *Wayne State;* MA, PhD *Massachusetts*

Jackson, J.E.W., BA, MA *Manitoba;* PhD *Washington*

Jarvis, G.K., BA *Brigham Young;* MA *Michigan*

Marin, I.C., BA *CUNY;* MA, MS, PhD *Michigan*

Nobbe, C.E., BA, MA, PhD *Washington*

Okraku, I.O., BA *Ghana;* MA, PhD *Cornell*

Osborn, R.W., AB *Michigan;* PhD *Brown*

Skidmore, W.L., BsEd, MA *Kent State;* PhD *Brown*

Teevan, J.J., BA *SUNY-Binghamton;* MA, PhD *Indiana*

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*

Lecturers

Hayes, A.C., BSc, MA *Leicester*

Veevers, Jean (Mrs.), BA, MA *Alberta*

Althouse College of Education

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ACADEMIC CALENDAR

1971

May 1	Final date for receipt of applications.
June 15	Final date for granting of acceptance.
July 1	$50 non-refundable deposit required.
September 8, 9, 10	Registration.
September 13	First term begins.
October 11	Thanksgiving – no lectures.
October 18 – November 5	First block of Practice Teaching.
December 6 – December 17	Second block of Practice Teaching.
December 17	Last day preceding Christmas break.

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January 3	Lectures resume.
January 14	End of first semester.
January 17	Beginning of second semester.
January 31 – February 11	Third block of Practice Teaching.
March 20 – 24	Winter break.
March 27 – April 7	Fourth block of Practice Teaching.
March 31	Good Friday.
April 3	Easter Monday.
May 5	End of second semester.
May 8 – 12	Examinations

Administrative Staff

Dean of the College

Stabler, E., BA *Queen's;* MA *McGill;* EdD *Harvard*

Assistant to the Dean

Casaubon, T.J., BA *Laval*

Associate Registrar

Nediger, W.G., BA *UWO*

Assistant Registrars

Galpin, D.E., BA *UWO*
Hartsell, G.L., BA *UWO*

Librarian of the College

McCrae, Sally E.A., BA, BLS *Toronto*

Nurse

Boughner, Jennie S., Reg N

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 education including a language laboratory, a data-processing area, a business machines laboratory, a teaching-aids centre, three modern laboratories, four well-equipped technical shops, an occupational training area, a steno-training laboratory, outstanding gymnasium facilities, provision for instruction by close-circuit television, a fine professional library 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.

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, University of Western Ontario and to certification to teach in the secondary schools of Ontario.

Students in the College are full students of The University of Western Ontario and have all of the rights and responsibilities that this implies.

For the Academic Session 1971-72the enrollment at Althouse College of Education will be restricted to a total of 800 students. It is expected that approximately 2,000 candidates will apply. Acceptances will be granted based on academic standing with quotas placed on specific options. All acceptances will be granted by June 15, 1971. No application received after May 1, 1971 will be considered.

Communications regarding admission to the Althouse College of Education should be addressed to:
The Associate Registrar,
Althouse College of Education,
The University of Western Ontario,
1137 Western Road,
London 72, Ontario.

Minimum Requirements

Interim High School Assistant's Certificate Course, Type B

(a) An acceptable university degree containing at least five undergraduate courses to support your first teaching option and two undergraduate courses to support your second teaching option.

(b) Canadian Citizenship or Landed Immigrant Status.

(c) Twenty years of age as of October 1, 1971.

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 in the Department of Education Circular 649. Specifics with respect to particular subjects are available from Mr. G.L. Hartsell, Assistant Registrar, (Advanced Standing), Althouse College of Education.

(b) Canadian Citizenship or Landed Immigrant Status.

(c) Twenty years of age as of October 1, 1971.

Specific Requirements

(a) No undergraduate courses are required to elect School Librarianship and Theatre Arts options.

(b) To elect the Elemenatry 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 subject, 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 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, particularly as they apply to a special pilot project for the academic year 1971-72.

Application Procedures

(1) The final date for receipt of applications is May 1, 1971.

(2) The final date for granting of acceptance is June 15, 1971.

(3) Upon the receipt of acceptance the candidate must submit a deposit of $50.00 within two weeks. Failure to do so will make the acceptance void and the position will then be offered to another candidate.
The deposit will be non-refundable and applicable to fees.

(4) A personal interview is required of all candidates. This interview will be arranged with the members of the departments of his first and second curriculum and instruction option choices. The interview should not be arranged until after the application has been submitted. It is the responsibility of the candidate to arrange for the interview.

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 Department 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 related academic subjects, and who completes a year of successful teaching certified by the inspector 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, Department 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 in the Department of Education circular 649.

These certificates qualify the holder for five years as an assistant teacher. The Type A may become a Higher School Specialist's Certificate (which is a permanent certificate and qualifies the holder to become a Head of a Department in a Secondary School) upon the completion of two years' successful teaching experience in Ontario.

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.

(See Circular 614(a) of the Ontario Department of Education for further details regarding certification.)

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 restriction 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 Options

Art	A, I-1
Biology	A, B
Business & Commerce (Accountancy, Date Processing, Marketing & Merchandising, Secretarial)	S, I
Chemistry	A, B
Computer Studies	B
Economics	A, B
Elementary Option	EST4
English	A, B
Environmental Science (Agriculture)	A, B
French	A, B
General Science	B
Geography	A, B
German	A, B
Greek	A, B
Guidance	
History	A, B
Home Economics	A, I
Latin	A, B
Mathematics	A, B
Music	A, I-1
Physical Education	A, I, I-1
Physics	A, B
Political Science	A, B
School Librarianship	I-1
Spanish	A, B
Theatre Arts	Basic

Codes

Type A Level	A
Type B Level	B
Intermediate Certificate Level	I
Intermediate Certificate Part 1	I-1
Specialist Certificate Level	S
Certificate, Standard 4	EST4

Elementary Education Option E120

To be certified to teach in both elementary and secondary schools in Ontario, students may choose the course in Elementary Education as one of the two required Curriculum and Instruction options. Admission is based on academic achievement, evidence of work experience involving young children and personal aptitude.

The minimum academic admission requirements are five courses from the social sciences or five courses directly related to a specific area of the elementary school curriculum.

The course deals with Instructional Organization for Learning in a combination of subjects related to the elementary school curriculum. Content study and methodology applicable to children at different levels of achievement will be considered in Language Arts, Social Studies, Mathematics, Science Art, Music, Physical Education and Health. Current trends in elementary school organization and classroom administrations also constitute part of the course.

The approach for presentation of this course emphasizes practical involvement, spontaneous interaction and consistent, direct contact with children. Major stress is placed on the growth of positive attitudes towards the education of children, where the school is considered a laboratory for the development of human relationships.

A minimum of ten hours of instruction per week will be required in the Elementary Education course and consequently a student enrolled in the course may not choose a course in another faculty, a third option or a double option.

The minimum weekly instructional time for a student enrolled in the Elementary Education option is outlined below:

Elementary Education	10 hours
Alternate Academic Option	4 hours
Elective Courses	10 hours

No candidate upon successful completion of the Elementary Education Course will be recommended for the Interim Elementary Teacher's Certificate before recommendation for an Interim High School Assistant's Certificate.

FOUNDATIONS

Compulsory

PROFESSIONAL PRACTICE AND ADMINISTRATION

E120a or b

PSYCHOLOGY

E121. Introduction to Educational Psychology
E130. Psychology of Effective Teaching

Electives

HISTORY OF EDUCATION

E180. Introduction to Canadian Educational History
E181. Education in the Development of the Canadian Educational History – Social and Cultural Development of 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. Introduction to Philosophy
E132. The Philosophy of History
E134. Logic and the Philosophy of Science
E135. Aesthetics
E138. Phenomenology and Existential Philosophy
E142. Ethics
E143. Philosophy of Religion
E144. Seminar in Special Topics
E145. Philosophy and Education

PSYCHOLOGY

E120a. Sociology and Education
E134b. Education of Exceptional Children
E135a. The Psychology of Early Childhood Education
E136b. The Adolescent in the Secondary School
E140b. Intercultural Psychology of Education
E141a and b. Program Instruction
E144a. Behaviour Theory and Its Application to Classroom Problems

AUDIO VISUAL

E120a and b. Audio Visual Instruction
E125b. Advanced Audio Visual Instruction

COMPUTER STUDIES

E131a and b. Introduction to Computers

ENGLISH

E131b. Creative Process in Art
E132a and b. Children's Literature

GUIDANCE

E130a and b. Tests and Measurements

HISTORY

E135b. Advanced Curriculum Planning in Histroy
E136 a and b. Canadian Studies

PHYSICAL AND HEALTH EDUCATION

E131a and b. An Introduction to the Scientific Principles of Modern Sports Training for Schools

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 to 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 Program (ITEP)

Aims: The College proposes to offer a special program, in 1971-72 for teachers who, while able to function well in any school, would be particularly well prepared for schools in which they would be concerned with pupils from a different culture, or from a variety of differing cultures. This program is primarily designed for two broad groups of students: those who intend to devote themselves to the educational needs of Canadian Indians, and those who plan to teach overseas in developing areas, possibly as CUSO volunteers.

Qualifications: The program is built within the framework of the existing winter calendar at Althouse. Students must meet the normal admission requirements and, at the end of the year, will have to satisfy the existing regulations for certification. Enrollment in ITEP will be limited. Students who intend to participate should have a firm commitment to intercultural education, and their acceptance and final program will depend upon consultation with the members of the faculty involved.

Requirements: (1) Intercultural Courses. ITEP students will be advised in the selection of courses in the College Calendar which are pertinent to the aims of this program. For example, the Department of History of Education recommends Comparative Education, Sec. C. (Intercultural Problems), and the Department of Psychology, in addition to the half-course in Intercultural Psychology which will be required, recommends the Sociology of Education.

(2) Curriculum and Instruction. Students will enrol in the regular courses appropriate to their subjects.

(3) Teaching Practice. Students will complete the normal teaching practice assignment. Where possible, however, students will be placed in school where pupils present a variety of cultural backgrounds, and by virtue of their origin, are fluent in a language other than English.

(4) Additional Requirements. From the foregoing outline, it will be evident that an ITEP student's program is not necessarily distinguished in any way from the program which might be selected by any student in the college, except by a concentration on specific relevant courses and by a more defined sense of purpose.

In addition, however, members of the ITEP will be required to meet together on a regular but extra-curricular basis throughout the year, to discuss common problems and special practices in intercultural

educational situations. Plans are also being made for the development of a complementary summer program of four or five weeks. This program will be an essential part of ITEP and will follow the winter program. It will cover additional requirements of a teacher who is to function effectively in an intercultural situation; the use of English as a foreign language, Basic Skills in Non-European languages, and a period of supervised orientation in an intercultural situation.

Summary of Requirements

Regular

Curriculum and Instruction – 2 credits in subjects appropriate to the student's own training.
P.P.A. – ½ credit.
Psychology – ½ credit in Intercultural Psychology, plus one other ½ course as recommended by the Department unless excused by previous background.
2 credits from any combination of courses offered, as recommended by Departments for ITEP students.

Additional

(1) Regularly scheduled ITEP group meetings throughout the year.

(2) A Complementary Summer Course.

General Information Concerning Vocational and Occupational Teaching Certificates

(a) 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.

(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 Occupational Certificate, Type B (Practical Subjects)
The holder qualifies to teach the practical subject of the Occupations and Service Trades Program in the composite schools and special vocational schools in Ontario.

Note: The above interim certificates are valid for a period of five years. An interim certificate may become permanent upon the completion of two years' successful teaching experience in the subjects(s) concerned.

(b) The following higher certificates may be obtained by teachers of Technical or Occupational subjects who successfully complete a special two-summer sequence of courses after first obtaining:

(i) the permanent Vocational Certificate, Type B, or the permanent Occupational Certificate, Type B, as explained above

(ii) the academic requirements for up-grading, as outlined in the Department of Education Circular 30, formerly Circular 612(g), dated November 1967.

(iii) the recommendation of the Regional Superintendent of Education or the Area or Municipal Superintendent of Schools.

(1) Interim Vocational Certificate, Type A (Technical Subjects named)
The holder qualifies to teach the technical subject named on the certificate and may qualify for appointment as a Technical Director. The interim certificate is valid for five years during which time it may become a Vocational Specialist Certificate upon completion of two years' successful teaching in the senior grade levels of the subject named on the certificate.

(2) Interim Occupational Certificate, Type A (Practical Subjects)
The holder is qualified to teach the practical subjects of the Occupational and Service Trades Program and may qualify for the appointment as Head of Department. The interim certificate is valid for five years during which time it may become a permanent Occupational Specialist Certificate upon completion of two years' successful teaching in the senior work of the subjects concerned.

Requirements for Admission to Vocational and Occupational Certificate Programs

Admission Procedures

(1) A candidate who feels he may meet the admission requirements, as set out below for the Vocational or Occupational Certificates, is advised to contact the Associate Registrar of the College to arrange an interview appointment. Application should be made as early as possible, and not later than July 1.

(2) At the time of the interview the candidate should present all necessary documents, diplomas and statements in support of the admission requirements as set out below. (Photostatic copies are acceptable.) Official translations must be presented for any documents in a language other than English.

(3) When the applicant has satisfied the admission requirements he will be given a Statement of Acceptability from the College, valid for a period of one year.

(a) General Conditions of Admission to the Winter Session (mid-September to mid-May)

(1) Age. The Applicant shall show proof of date of birth. Male applicants shall be at least 23 and female applicants at least 21 years of age.

(2) Citizenship. The applicant must be a Canadian citizen or show proof of landed immigrant status.

(3) Education. The applicant shall show proof of the required academic standing, as outlined in the following sections B or C, and be able to communicate fluently in English.

(4) Employment Experience. The applicant shall submit statements from each of the persons or firms with whom he has been employed, verifying the length of each period of employment and describing the nature of the work performed in each case. The experience should be such as to ensure that the applicant is a skilled craftsman, competent in the main branches of his subject field, and familiar with recent developments.

A minimum of two (2) of the required years of employment experience, as listed below in sections B and C, must have been obtained recently in Canada.

(5) Technical Proficiency Examination. Subsequent to obtaining a statement of Acceptability from the College the candidate will be required to prove his subject ability by means of Technical Proficiency Examinations. For the Vocational Certificate candidate these cover a two-day period and consist of two three-hour theory examinations on the first day and two three-hour practical performance examinations on the following day. Candidates for the Occupational Certificate (Practical Subjects) will attempt a three-hour combined theory/practical examination in each of their three subject areas. The examinations are scheduled in November of each year and candidates may attempt them while enrolled on the Winter Session or as pre-entry candidates prior to enrolling on a program of professional training. In either case, the Technical Proficiency Examinations must be successfully attempted before a teaching certificate can be recommended. A candidate who is unsuccessful in his first attempt shall (i) make application to attempt supplemental examinations when next scheduled OR (ii) shall be obliged to withdraw from the program if the average of his theory and practical marks is below that required for the writing of supplemental examinations. A candidate who is unsuccessful in his second attempt will be required to take advanced theory courses or to return to industry for a specified further period of practical employment, or both.

(b) Education and Employment Experience Required for Admission to the Interim Vocational Certificate Type B Program

Candidates for Vocational teaching certificates, normally must document a minimum of seven (7) years of acceptable wage earning experience in their respective fields. However, the required experience may be reduced for persons who have educational qualifications in excess of Grade 12 Ontario standing as follows:

(1) For applicants who have appropriate degrees.
(a) two (2) years of acceptable experience, subsequent to graduation, is required of graduates from approved four-year degree program in Architecture, Engineering, and Nursing.

(2) For applicants who have appropriate diplomas from approved post-secondary institutes.

(a) three (3) years of acceptable experience, subsequent to graduation, is required of graduates from approved three-year diploma programs of an Ontario Polytechnical Institute or College of Applied Arts and Technology.

(b) three (3) years of acceptable experience, subsequent to graduation, is required of persons qualified with the Associate of the Ontario College of Art diploma.

(c) five (5) years of acceptable experience, subsequent to graduation, is required of persons qualified with the Registered Nursing diploma.

(d) five (5) years of acceptable experience for persons who have successfully completed approved two-year diploma programs at an Ontario Polytechnical Institute or College of Applied Arts and Technology.

(e) six (6) years of acceptable experience for persons who have successfully completed approved one-year diploma programs at an Ontario Institute of Technology, College of Applied Arts and Technology or other accredited institute.

(3) For applicants who have Ontario Grade 12 standing

(a) seven (7) years of acceptable experience is required.

Note: The experience requirement, in (3) (a) above, is reduced by one (1) year for persons who graduated from an Ontario Secondary School technical program with a major credit in the subject concerned.

(c) Education and Employment Experience Required for Admission to the Interim Occupational Certificate, Type B Program

(1) Ontario Grade 12 standing

(2) Seven (7) years of approved wage-earning experience distributed over three (3) occupational or service trade subjects.

Candidates must document all experience and undertake proficiency examinations in each of the three subject areas for which they wish to qualify. Each examination will consist of written and practical sections.

Note 1: Although the acceptable minimum academic qualification for technical and occupational teaching candidates is Ontario Grade 12, or its equivalent as approved by the Associate Registrar of the College, preference on admission will be given to those applicants who have attained standing in advance of the minimum requirement.

Note 2: An applicant who may meet the conditions of admission listed above in section A, B,

or C, but who, because of lack of fluency in English or for any other reason, may be considered a poor prospect for secondary school teaching in Ontario, may be asked to meet the Dean's Advisory Committee on Admission. On recommendation of this committee, a candidate may be refused final admission.

Program of Studies for the Vocational or Occupational Type B Certificate

A: The program leading to the above certificates consists of three obligatory parts:

Part I:	Professional Foundation Courses
Part II:	Subject Foundation Courses
Part III:	Observation and Practice Teaching

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 your fee. If your divide your payment into two instalments the $50.00 will be deducted from the first instalment. This deposit will not be refunded if you do not register at Althouse College in September 1971 and must be paid in the form of a certified cheque or money order no later than July 1, 1971.

Winter Session

Full-time students $534.00

This amount includes a student activity fee fee of $54.00

If paid in two instalments

Registration Day..... 300.00

First day of second term (Includes a $5.00 deferred payment charge)..... 239.00

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.

MEMBERS OF THE FACULTY OF ALTHOUSE COLLEGE OF EDUCATION

ART

Professor

Logan, A.D., BFA, AOCA, OIP *Toronto*

BUSINESS AND COMMERCE

Associate Professor

Kaluza, H.J., BA *McMaster.* Chairman of Department

Assistant Professor

Westgate, D.G., BA *UWO*

CLASSICS

Professor

Lambert, G.R., BA, MA *Toronto*

COMPUTER STUDIES

Associate Professor

Walsh, J.E., BA *UWO;* BEd *Toronto*

ELEMENTARY TEACHING

Professor

Kenney, K.W., BA *UWO;* MEd *Toronto.* Chairman of Department

Associate Professor

Hardy, Madeline, BSc *Columbia;* MEd, DEd *Toronto*

Assistant Professors

Park, P.B., BA *UWO*

Sorrill, P.W., BA *UWO;* MEd *Toronto*

ENGLISH

Professor

Smallbridge, J.E., BA, MA *Toronto* Chairman of Department

Associate Professors

Dow, Marguerite R., BA, MA *Toronto*

Linden, P.J., BA, MA *UWO*

Procunier, E.R., BA *UWO;* MA *Queen's*

Assistant Professor

Gutteridge, D.G., BA *UWO*

GEOGRAPHY

Professor

Langman, R.C., BA, MA *Toronto* Chairman of Department

Associate Professor

Inch, R.S., BA *Mt. Allison*

GUIDANCE

Associate Professors

Schmidt, P.K., BA *UWO;* BEd, MEd *Toronto*

Hallberg, E.T., BA *Idaho;* MA, EdD *Arizona State*

Hassard, J.H., BA *UWO;* MEd *Ottawa*

HISTORY

Professor

Milburn, G., BA *Durham;* BEd *Toronto;* MA *Durham.* Chairman of Department

Associate Professor

Gray, D.M., BA, MA *Queen's*

Assistant Professor

Clark, R.J., BA *McMaster;* MA *UWO*

HISTORY OF EDUCATION

Associate Professor

Hamilton, W.B., BA, MA, BEd *Acadia;* PhD *UWO* Chairman of Department

Assistant Professors

Gidney, R.D., BA, MA *McMaster;* BEd *Toronto;* MPhil *London*

Lawr, D.A., BA, MA *UWO*

Purdy, J.D., MA *New Brunswick;* PhD *Toronto*

Radcliffe, D.J., BA *Cambridge;* MA, PhD *Wisconsin*

Ray, D.W., BA, MEd *Alberta;* PhD *London*

Stevenson, H.A., BA, MA *UWO*

HOME ECONOMICS

Associate Professor

Porterfield, Grace, BHSc *Guelph*

MATHEMATICS

Professors

Harris, A.W., BA *UWO* Chairman of Department

Campbell, D.R., BA *UWO*

Lawson, G.B., BA *Queen's;* BEd *Toronto*

MODERN LANGUAGES

Professors

Kieser, W.E., BA *Leeds and London* Chairman of Department

Baldwin, Margaret M., BA, MA *UWO*

Associate Professor

Boyd, J.A., BA *Toronto*

MUSIC

New appointments to be announced

PHILOSOPHY

Assistant Professors

Howard, V.A., BA *Maine;* PhD *Indiana.* Chairman of Department

Burke, D.R., BA, MA *New Mexico, Albuquerque;* PhD *Michigan State*

Koutsouvilis, A.P., BA, MAT *Michigan;* PhD *London*

O'Leary, P.T., AB *Boston;* MA *Toronto*

Lecturers

Houston, Barbara E., BA, MA *UWO*

McPeck, J.E., BA, MA *UWO*

PHYSICAL AND HEALTH EDUCATION

Professor

West, N.W., BA, BEd, BPHE *Toronto* Chairman of Department

Associate Professors

Paterson, W., BPHE *Toronto*

Wigston, Frances A., BA *UWO* Chairman of Women's Department

Assistant Professor

Bliss, Iris, BSc, BEd *New Brunswick*

PRACTICE TEACHING

Bass, R.W., BA *UWO* Director

Stevenson, N.H., BA, MEd *Toronto* Assistant Director

PROFESSIONAL PRACTICE AND ADMINISTRATION

Professor

Allison, G.F., BA *Queen's;* MA, MEd *Toronto*

Assistant Professors

Hay, G.C., BA, MEd *Toronto*

McLeish, E.A., BA *UWO;* MEd *Toronto*

Menear, D.W., BA, BEd *Toronto;* MEd *Alberta;* FCCT

PSYCHOLOGY

Professor

McMurray, J.G., BA, MA *UWO;* PhD *Toronto* Chairman of Department

Associate Professors

Harper, F.G., MA *Glasgow;* PhD *California*

Irvine, S.H., BA, MEd *Aberdeen;* PhD *London*

Slemon, A.G., BA *Manitoba;* MA *UWO;* PhD *Toronto*

Assistant Professors

Bergering, A.J., BA, MA *UWO*

Blue, A.W., BA, MA, PhD *Iowa State*

Sanders, J.T., AB *Harvard;* MA, PhD *Ohio State*

SCHOOL LIBRARIANSHIP

Associate Professor

Gordon, Elsie R.M., BA *UWO;* BLS *Columbia*

SCIENCE

Professor

Wright, J.S., BA *Toronto*

Associate Professor

Webber, H.D., BSc, MSc *UWO*

Assistant Professors

Cunningham, D.N., BA *Queen's;* MSc *Cornell*

Ogletree, J.F., BSc *UWO*

TEACHING AIDS

McKeon, P.J., BA *UWO* Director

Crisp, E.V., BSc *UWO* Assistant Director

VOCATIONAL EDUCATION

Professor

Beatty, H.W., BPHE *Toronto* Chairman of Department

Technical Education Specialists

Hall, E.J.

Harland, R.

Hey, M.

Moro, R.E.

School of Business Administration

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ADMINISTRATION OF THE SCHOOL OF BUSINESS ADMINISTRATION

J.J. Wettlaufer, BA, MBA, LLD. Dean

Walter A. Thompson, AB, MBA, LLD. Associate Dean; Chairman, Continuing Education Program

Neil M. Armstrong, BA. Director of Administrative Services

R.C. Hodgson, BSc, MSc, DBA. Chairman, MBA Program

C.B. Johnston, BA, MBA. Chairman, Undergraduate Program

M.R. Leenders, BScEng, MBA, DBA. Director, PhD Program

J.N. Fry, BSc, MBA, PhD. Chairman, Research and Publications Division

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 places 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 centralized 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 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.

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, Production, Control, 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 area, 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 the 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 B.A.

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 development 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 a very important experience to students in summer employment between their 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 the 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 Dominion Bureau of Statistics publications, it contains more than 450 periodicals, both general and specialized, and the annual reports of over 700 Canadian and 2,000 U.S. companies. Many 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 100,000 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 Biological and Geological Sciences, Law, Engineering, Medicine, Music, Nursing, Education, and the Natural Science Centre. These resources are designed primarily for the use of students in these fields, but may, of course, be consulted by any registered student.

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. There are three required courses the first two years. These courses are Mathematics 20 or 24 or Applied Mathematics 20, Economics 20, 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 be automatically 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.

Applications: Students registered in Ontario Grade 13 must complete the General Application Form supplied by their high school guidance counsellor. All other applicants must complete the application form provided by the Registrar's Office, Stevenson Hall, The University of Western Ontario, London 72, 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	Production
Business 355	Management Science
Business 357	Planning Information and Control Systems
Business 358	Organizational Behavior

Neither a seventh course nor a substitution 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

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 among the option courses offered by the School of Business Administration or from among any senior courses offered by the University.

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

Business 20. Introduction to Business.
NOTE. Business 20 is neither a prequisite for any other Business course nor a requirement of the Undergraduate Program.

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 business decision-making process, business terminology; and general information about various industries and types of companies.

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 funancial 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, and investment management.

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, methods of evaluating worker performance, and the many different overall problems involved in organizing the manufacturing function of a company with special emphasis on the necessity for close cooperation and liaison with other functions of the firm.

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 coordinated.

While the student is expected to learn much about the problems which businessmen face, the major benefit that he will receive from the course should be a feeling for, and an understanding of, the environment in which the businessman 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.
One course

Business 250. This course is primarily designed as a preparation for entry to the Business School. The course is divided into two main parts.

(1) **Data Analysis.** 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 analysis and interpretation of real information in an ongoing project orientation and includes student team projects.

(2) **Financial Accounting.** Commencing with the concepts of costs and benefits developed in the first term this part deals with the relevant/non relevant information flows of a firm. It examines the problems and constraints in classifying the economic aspects of the firm and develops the Financial Accounting model used in public reporting. The uses and limitations are developed so that a student can read and interpret the published financial reports and obtain an appreciation of the important information they do not contain.
One course

Business 351. Marketing. The Basic course in marketing introduces the major problems encountered by businesses 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

Business 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 shift-

ing 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

Business 354. Production. Production is a course which emphasizes the management of activities. The activities may be those involved in manufacturing, the provision of services, or generally speaking, any task that necessitates moving or operating on materials and information. The course has an operating focus and is concerned with the development of a systematic way of thinking about the structure and interrelationships of production situations within an organization.

To achieve these objectives students are exposed to relevant knowledge about the economic, organizational and technical aspects of production management and decision-making. Thus they deal with problems ranging from job design through to the planning and operation of production systems within the company organization.

Certain concepts and techniques are taught or applied so that the student may effectively analyze the above problem areas. Methods of work measurement, facilities planning, assembly line balancing, and production control, and so on will be discussed and utilized. However, the emphasis in the course will not be on the techniques themselves but on their application to improve the firm's competitive performance.

One course

Business 355. Management Science. The course in Management Science introduces some of the mathematical and statistical techniques 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 will be on decision analysis under uncertainty, preference theory, linear programming, classical statistics, 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/or BASIC programming.

One course

Business 357. Planning Information and Control Systems. This course emphasizes the use of figure data in administration. To this end, it deals in large measure with figure data prepared to assist in making business decisions and in appraising the results of business operations. In order to provide a sound and realistic basis for discussing these administrative activities, the method of the statistician and accountant are both considered. The student is expected to obtain an understanding of the processes by which statistical and accounting data are developed, but is not expected to acquire the skills of the staff specialist in these areas.

The use as well as the preparation of figure data is illustrated, and the relevance of figure data to business problems is continually emphasized. By appreciating the value of figures to the businessman, students with the familiar dislike of figures will become less reluctant and more facile users of figure data. During the course many representative problems concerning the use of quantitative data will be discussed. Other factors which cannot be measured quantitatively are also considered.

The student should gain from this course, ability in the preparation of figure data, understanding and appreciation of the use to which it may be put, as well as the limitations to its use, and finally an enquiring attitude towards all figure data which come to his attention.

One course

Business 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

Business 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 emphasis is on the decision-making process.

An important 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

Business 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 are developed using simulation techniques and electronic computers.
Half course

Business 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, sufficient in number 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, allocation of overhead costs, joint and by-product costing, processes of 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

Business 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

Business 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

Business 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 to 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 in common stock investments and about one third on 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

Business 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 nonintegrated 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

Business 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 decision 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

Business 456. Business Law. The course is not designed to make lawyers of business students. The aim is to contribute to an awareness in the student of the legal significance of business transactions and to the making of an intelligent client for the practicing lawyer. It is assumed that detailed knowledge of the law is properly left to the lawyer. Thus, detailed examination of particular areas of law is sacrificed to place major emphasis on a broad base of substantive rules of law relating to commerce. A combination text and case method is used with the cases designed to illustrate the principles summarized in the text material.

The course deals with the law of Contract, including special types of contracts such as the contract of Sale, Insurance, Guarantee, and Bailment; Business Associations (Agency, Partnership, and Corporations); Labour Law; Credit Transactions; and Real Property.
Half course

Business 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 flexible budgets. In particular, the course is concerned with the control of managed costs, with profit centers and with capital acquisitions. These are dealt with from a systems point of view as opposed to an accounting aspect.
Half course

Business 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 project. 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.
One course

Business 460. Auditing. The techniques that have been classified under the general heading of auditing have expanded to such an extent in the last fifty years 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 of 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.

In the second part of the course, the role of the external auditor will be studied. While a small amount of time will be devoted to understanding the auditing and consulting profession, the major emphasis will be on studying the kinds of service available from a public accounting firm, and an evaluation of these services from the point of view of a business manager.

The student will be required to write at least one mid-term test. While it is not a prerequisite for admission to this course, a familiarity with the concepts developed in the Financial Accounting course will be helpful.
Half course

Business 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, diccipline, 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 implementing 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

Business 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 efficiency 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

Business 468. Human Relations. This course has a twofold purpose: to develop increased self-awareness and a deeper understanding of the individual in his environment. The first part of the course will stress personal growth and development. The final section of the course will deal with the effects of the social and cultural environment on individuals. 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

Business 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

Business 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, and (4) student knowledge of the strengths and weaknesses of various techniques used to measure the effect of promotional activity.

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

Business 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

Business 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 technoolgical 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

Business 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

Business 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

Business 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 legal 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

Business 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 first-hand acquaintance with the research process.
Half course

Business 485. Operations Research. The objective of this course is to develop the students' 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, queueing theory and Markov chains. Students will be expected to use the computing facilities in solving some of the problems.
Half course

Business 489. The Practice of International Trade. Recent years have seen a growing emphasis on the international operations of business. Operating across national boundaries raises a number of unique problems for the business administrator in the areas of general policy, marketing, finance, personnel, production, and control. The course on the practice of international trade deals specifically with those management problems that arise by virtue of a firm's international orientation.

The course consists largely of readings and discussions on various aspects of the international environment of business. Throughout, emphasis is placed on the implications of the environmental features for business management.
Half course

Business 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 depth of 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

Business 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 information 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

Advisory Committee as at January 1, 1971

A.K. Adlington, Vice President Administration and Finance, The University of Western Ontario

Ralph M. Barford, President, General Steel Wares Limited

W.A. Bean, Deputy Chairman & Vice President, Canada Trust-Huron & Erie

J.E. Brent, Chairman of the Board, IBM Canada Ltd.

G. Allan Burton, Chairman of the Board, Simpsons, Limited

N.R. Crump, Chairman & Chief Executive Officer, Canadian Pacific, Honorary

Paul Desmarais, Chairman, Power Corporation of Canada Limited

H. George De Young, Industrialist

J.S. Dinnick, Chairman of the Board, McLeod, Young, Weir & Co. Ltd.

J.C. Eaton, Chairman, Eaton's of Canada Ltd.

J.N. Fry, Associate Professor, Chairman Research and Publications Program, School of Business Administration

Eric L. Harvie, Q.C., Barrister

J. Claude Herbert, President, Warnock-Hersey Co. Ltd.

W.H. Hemphill, President & General Manager, Imperial Furniture Mfg. Co. Ltd.

R.G. Ivey, Q.C., Barrister

Richard M. Ivey, Q.C., Barrister

Joseph Jeffery, Q.C., Chairman of Board of Governors, The University of Western Ontario

Allen T. Lambert, Chairman and President, The Toronto-Dominion Bank

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Karl E. Scott, Chairman of the Board, The Ford Motor Company of Canada Ltd.

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J.A. Taylor, Chairman and President, The Canada Trust-Huron & Erie

R.B. Taylor, Vice President & Treasurer, The Steel Company of Canada, Ltd.

Walter A. Thompson, Professor and Associate Dean, School of Business Administration

The Hon. K.R. Thomson, Times Newspapers Ltd.

Marcel Vincent, Chairman, Bell Canada

J.L. Walker, President, Bank of Montreal

Lt. Col. D.B. Weldon, Honorary Chairman, Midland-Osler Securities Ltd., Honorary

David B. Weldon, Chairman of the Board, Midland-Osler Securities Ltd.

J.J. Wettlaufer, Professor and Dean, School of Business Administration

J.R. White, Director, Standard Oil Co., Honorary

W.P. Wilder, President, Wood Gundy Securities Ltd.

D. Carlton Williams, President and Vice-Chancellor, The University of Western Ontario

R.B. Willis, Vice President, Allpak Products Ltd.

J.E. Woods, Woods Investment Limited, Honorary

EXPENSES

The following estimates are based on an academic year of 33 weeks:

	Single Student	Married Student with wife working no children
Tuition.....	$ 532.50	$ 532.50
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.

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. The gymnasium in Thames Hall is one of the best-equipped in the country.

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.

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.

Gold Medal: The Gold Medal is to be awarded by the faculty upon graduation to the undergraduate student with the highest first class standing.

Price Waterhouse & Co. Scholarship: This award of $250 will be made 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.

Riddell, Stead, Graham & Hutchison Award: This award of $500, to be applied against university fees in the fourth year, will be given to a male Canadian student who has completed the third year of the Business Administration program with high standing, who is proceeding into the fourth year, and who intends, upon graduation, to continue studying with a practising firm of Chartered Accountants. The award is made on the recommendation of the Dean of the Faculty of Business Administration.

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.

**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.

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. Applications should be made to the Secretary, Financial Aid Committee, School of Business Administration, who will provide current information.

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 institution in Ontario; this one application gains consideration for the Canada Student Loan, 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 the Canadian banks to make sums of money available to students for educational purposes. Interested students should contact the bank of their choice.

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..... $542.50

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.

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, résumé 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 effectivenss 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 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 business men 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 business men. 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 arrangement.

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 cooperates 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.

MEMBERS OF FACULTY OF THE SCHOOL OF BUSINESS ADMINISTRATION

Professors

Wettlaufer, John J., BA, MBA *UWO;* LLD *Waterloo; Lutheran.* Dean, School of Business Administration

Thompson, W.A., AB *Dury;* MBA *Harvard;* LLD *Waterloo Lutheran.* Associate Dean, School of Business Administration

Professors

Grindlay, A.A., BSc *Sask.;* MBA *UWO;* PhD *Calif.*

Jones, F.W.P., BA *UWO;* part-time

McDougall, W.J., BA *UWO;* FCA *Ontario*

Nicholson, J.T., SB *Cornell;* MBA, DBA *Harvard*

Taylor, J.C., BA *UWO;* FCA *Ontario.* Senior Professor

Thain, D.H., MBA, DBA *Harvard*

Wood, A.R., BSc *Queen's;* MBA, DBA *Harvard*

Associate Professors

Archibald, T.R., BA *UWO;* MBA, PhD *Chicago;* CA *Ontario*

Fry, J.N., BSc Eng *Alta.;* MBA *UWO;* PhD *Stanford*

Gordon, J.R.M., BASc *B.C.;* MBA *Queen's;* PhD *M.I.T.* On leave

Hodgson, R.C., BSc, MSc *McGill,* DBA *Harvard*

Johnston, C.B., BA, MBA *UWO*

Kennedy, J.R., BComm *Man.;* MBA *UWO;* PhD *Stanford*

Kuechle, D., BA, JD *Wisconsin;* MBA, DBA *Harvard*

Leenders, M.R., BSc *Alta.;* MBA *UWO;* DBA *Harvard*

Little, B., BComm *U.B.C.;* DBA *Harvard*

Martin, S.A., CA *Man.;* MBA, DBA *Harvard*

Mikalachki, A., BCom *Sir George Williams;* MBA PhD *UWO*

Nourse, R.E.M., BSc *Queen's;* MBA *UWO;* DBA *Harvard.* On Leave

Portis, B., BA, MA, PhD *Harvard*

Sproule, R.E., BComm *McGill;* MBA *UWO;* PhD *M.I.T.*

Washington, J.B., BBA *Tulane;* MBA *Harvard;* PhD *Alabama*

Assistant Professors

Bishop, P.M., BSA, *O.A.C.;* BASc *Toronto;* MBA *UWO*

Bobele, H.K., BS, PhD *UCLA*

Britney, R.R., BESc *UWO;* MBA *Bowling Green,* DBA *Indiana*

Burgoyne, D.G., BA, MBA *UWO*

Crookell, H., MBA *UWO;* RIA *Alta.*

DiStefano, J.J., BA *Rensselaer,* MBA *Harvard,* MA, PhD *Cornell*

Drinkwalter, D.A., BA, MA *UWO*

ffolliott, J.D., BComm *Rhodes;* MBA *UWO;* CA *Ontario*

Forsyth, G.R., BIndEng *Georgia Inst. of Tech.;* MBA *UWO*

Graham, J.F., BA *Assumption;* MBA *UWO*

Haehling von Lanzenauer, C., Diploma, PhD *Bonn*

Hardy, K.G., BA *UWO;* MBA, PhD *Mich.*

Hicks, B.E., BComm *Toronto;* MBA *McMaster;* PhD *Illinois;* CA

Humphrey, J.A., BA, MBA *UWO;* DBA *Harvard*

Kirkham, P.G., BASc *U.B.C.;* MBA, MA *UWO;* PhD *Princeton*

Knight, R.M., BEng *McGill;* SM *M.I.T.*

Long, R.A., CA, BComm *UBC;* MBA *Washington*

Peach, D.A., BSc, MBA *Ohio;* DBA *Harvard*

Rowland, F.H., BA *UWO*

Shaw, D.C., BComm*Dalhousie;* MBA, PhD *Penn.,* CA *Nova Scotia*

Smith, D.B., CA *Ontario*

Zabransky, F., BASc *Toronto;* MA, PhD *UWO*

Lecturers

Coleman, D.R., BSc, MSc *M.I.T.*

Heffernan, J.J., BSc (Chemical Eng.) *Alta.;* MSc *M.I.T.*

Stevens, R.G., BASc, MBA *UWO*

Wrigley, L., BSc *London School of Economics;* DBA *Harvard*

Sheehan, G.A., CA *Ontario;* MBA *UWO*

Nobbs, R.A., BSc, MBA *Alta.*

Instructors

Lebner, S.D., BSc *McGill;* MBA *UWO*
Mackay, J.A., BA *Toronto;* MBA *UWO*

Ouellette, G., BA, MBA *UWO*

Uren, H.T., BA, MBA *UWO*

Lambert, D.M., BA *UWO*

Visiting Lecturer (part-time)

Downing, P., CA *Quebec;* BA *Sir George Williams;* MBA *UWO*

School of Library and Information Science

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History of the School of Library and Information Science

The School was established by the Board of Governors and the Senate of the University in response to a proposal from the Ontario Provincial Government. The Senate asked the Faculty of Graduate Studies to appoint a Committee to formulate a broad program for the new School. Professor J.A.F. Stevenson of the School of Medicine was nominated Chairman of this Committee. The advice of three specialists was sought. They were: Dr. George Bonn who was Chief of the Science and Technology Division of the New York Public Library and author of *Science and Technology Literature Resources in Canada;* Professor Leon Carnovsky of the Graduate Library School at the University of Chicago and, at the time, Chairman of the American Library Association's Committee on Accreditation; and Dr. Neal Harlow, Dean of the Graduate School of Library Science at Rutgers University and formerly Librarian of the University of British Columbia. On the advice of these experts, Dr. Stevenson's Committee recommended a Master's program for the new School. Also on this Committee's recommendation Dr. Andrew D. Osborn was appointed Dean, and took up the position in July, 1966. On his retirement in June 1970, the present Dean, Dr. Willian J. Cameron, was appointed.

The Province provided funds for a well equipped temporary building of 18,000 square feet which was designed to meet the special needs of the School. Studies began in September 1967; and the first students finished their MLS work the following August. 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 is the accrediting agency for both Canada and the United States. In January 1969 it accepted the visiting Committee's report and accredited the School's MLS program, which thus became the fourth accredited program in Canada.

The building was expanded by 3,072 square feet at the beginning of 1970. The School also has storage space in two buildings on Western Road opposite Althouse College of Education.

Courses of Study, 1971-72

Seminar courses are grouped within seven areas of common concern, and each group reflects a special aspect of the School's pholosophy of education for librarianship. Three basic series of courses in the 510's, 520's, and 550's are intimately related and form the foundations of the curriculum. Others in the 500's provide background and summing-up of the essential elements in these series. Individual courses in other groups and within the same groups provide enrichment, some degree of specialization, or some specialized approach to the general body of knowledge and theory upon which the profession of librarianship is based.

Required courses are: 511, 512, 513, 521, 522, 523, 551, 552, 553 and 500. The School requires students to obtain a grade of at least B (70%) in each of these courses. Other courses may be required in a particular program by decision of the SLIS Faculty Council. The total number of hours in each required course may be varied from time to time by decision of the SLIS Faculty Council.

For two-term students, 552, 553, and 500 are required, and others may be required in individual cases.

All courses are technically half-courses i.e. they are completed within one term. Every elective is not necessarily offered in any one term. A full-time student normally takes five courses in any one term. A student in the two-term program thus needs 10 courses to complete the MLS, one in the three-term program needs 15, and one in the four-term program needs 20.

500-509 Foundation Studies

A group of courses designed to give historical and philosophic perspective to the central concerns of library and information science. The Masters Seminar is required for all students in their final term, and is intended to encourage students to develop a philosophy of librarianship that will provide a broad base for professional life after graduation. Other courses are enrichment courses to help prospective librarians to place current theories and practice into broad intellectual and cultural patterns of the past and the present.

500. Foundation Studies/*Staff*

500. Masters Seminar/*W.J. Cameron, R.E. Lee, R. Stierwalt.* Required for all students in their final term.

501. Old World Intellectual and Cultural Foundation/*W.J. Cameron*

502. New World Intellectual and Cultural Foundations/*S.D. Neill, W.B. Ready*

503. Bookcollecting and Librarianship/ ***W.S. Debenham, C.M. Hotimsky, J.H. Fyfe***

509. Education for Librarianship/

510–519. Professional Theory and Methodology

A group of courses that includes the series 511, 512, 513. This series is normally taken in successive terms in the order given. In accordance with the philosophy of the School, they are organized from the point of view of the user of libraries, and not from the point of view of the librarian. Therefore, professional theory and methodology is not taught by traditionally dividing the subject into courses devoted to book selection, cataloging, classification, and reference. This technical approach is rejected in favor of the user's normal subject approach. Thus, fundamental aspects of the acquisition, organization, and use of resources in each subject are treated simultaneously while considering the needs of users. The other courses in this group allow for further study in depth, or for special attention to specific problems.

510. Professional Theory and Methodology/*Staff*

511. Humanities/*A.J. Jamieson, J.H. Fyfe.* Required for all 3-term and 4-term students
512. Social Sciences/*L.C. Colvin, K. Hansen, C.M. Hotimsky, A.J. Jamieson, J.H. Fyfe, J.H. White.* Required for all 3-term and 4-term students
513. Science and Technology/*G.R. Pendrill, J.H. White.* Required for all 3-term and 4-term students
514. Special Topics in the Humanities/*Staff*
515. Special Topics in the Social Sciences/*Staff*
516. Special Topics in Science and Technology/*Staff*
519. Problems in the Organization of Information/*L.C. Colvin, F. Dehart*

520–529. Administrative Theory and Practice

Because professional librarianship implies eventual involvement in administrative roles, courses 521, 522, and 523 are required for all three-term and four-term students. 521 and 522 may be taken in a beginning term, and 523 in a subsequent term. Other courses in the group allow students to compare specific applications of general principles of administration in specialized circumstances.

520. Administrative Theory and Practice/*Staff*

521. Principles of Administration/*R.G. Prodrick, P.G. Scott, C.H. Held.* Required for all 3-term and 4-term students.

522. Library Planning/*M. Beckman, S. Langmead, P.G. Scott.* Required for all 3-term and 4-term students
523. Library Theory and Practice/*R.G. Prodrick.* Required for all 3-term and 4-term students

524. School Theory and Practice/*S.D. Neill, C.H. Held*
527. Community Services: Local, Regional, National/*J.T. Parkhill*
528. Higher Education/*R.G. Prodrick, W.B. Ready*
529. Special Libraries/*G.R. Pendrill, J.H. White*

530-539 Research Principles and Practice

This group of elective courses is intended both to draw attention to the specialized needs of users with research interests and to introduce prospective librarians to the principles and practice of research. A broad subject approach emphasizes the essential relationship of acquisition, organization, and use of the special resources to the particular needs of such users.

530 Research Principles and Practice/*Staff*

531. Research Principles and Practice in the Humanities/*G.M. Strathern*
532. Special Research Topics in the Humanities/*W.J. Cameron*
534. Research Principles and practice in the Social Sciences/*J.H. Fyfe, R.G. Prodrick*
537. Research Principles and practice in Science and Technology/*G.R. Pendrill*
539. Guided Research/*Staff.* Course weight varies with each project. Application to take this course must be made in writing a month before the end of the term preceding the one in which the work will be done.

540–547. Special Topics

This group of elective courses is primarily concerned with problems posed by special bodies of knowledge, and the acquisition, organization, and use of materials relevant to them.

540. Special Topics/*Staff*

540. Special Topics in Librarianship/*A visiting lecturer*
542. Periodical Literature/*J.H. White*
543. Historical Development of Children's Literature/*E.C. Donnelly*
544. Canadiana/*G.M. Strathern*
545. Slavic Libraries and Librarianship/*C.M. Hotimsky*
547. History of Science/*H. Plotkin, R.A R.A. Richardson*

The following courses may be taken in other departments:

French 560	Literature of French Canada. (Full course)
English 537	Renaissance Bibliography. (Full or half course)

Other courses may be added to this list from time to time.

550–559. Information and Communication Studies

Courses 551, 552, and 553 form a series which is normally taken in three successive terms. They are concerned fundamentally with the knowledge and theory necessary for insight into the newly-conceived discipline of information science. The courses attempt to transcend technological preoccupation with both manual and computer systems: (1) by focussing on the problems and principles underlying current concern with gathering, storing, and retrieving information; and (2) by a searching enquiry into the nature of information and communication. Other courses in the group are centered upon the creation of resources for use in experimental work in the subject, and in exploring special aspects.

550. Communication Studies/*Staff*

551. Linguistic and Communication Studies/*C.M. Hotimsky, J.H. White, and Staff.* Required for all 3-term and 4-term students
552. Introduction to Problems in the Control of Information/*D. Bird, G.R. Pendrill.* Required for all students
553. Problems in the Computer Control of Information/*J. Belzer.* Required for all students
558. Special Topics in the Computer Control of Information/*J. Belzer, D. Bird*
559. Audiovisual Theory and Practice/*S.D. Neill*

560–569. Special Services

This group of elective courses is primarily concerned with users of libraries (usually members of a profession or followers of a discipline) whose special needs require special services.

560. Special Services/*Staff*

561. Art Libraries and Information/
562. Business Libraries and Information/
566. Law Libraries and Information/*D. Priestly*
567. Medical Libraries and Information/
G.R. Pendrill, G. Cruzat
569. Music Libraries and Information/

ADMISSION

A candidate for the degree of Master of Library Science must be a graduate of a recognized university or hold equivalent qualifications and must have demonstrated ability to succeed in graduate work.

Application forms may be obtained from the School of Library and Information Science. They should be returned for initial processing to the School, together with the required transcripts and the letters of recommendation. It is the Registrar who issues Permits to Register for both MLS and any possible prerequisite-year courses. 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.

There are seven ways in which a person can be admitted to the School.

(1) Candidates who have an honors degree with at least second-class standing, and those who have a graduate degree with at least B standing, will be admitted to the School's three-term program of fifteen courses; they may commence their studies in any term they wish. Some students elect to spread the fifteen courses over four terms; and candidates from non-English-speaking countries will in many cases be required to follow that pattern.

(2) Candidates who have a three-year Bachelor's degree with at least B standing will be admitted to a twenty-course program which runs through four terms. They may not begin their MLS studies in the summer term immediately following graduation unless they take another term off during the course.

(3) The alternative to (2) is completion of a prerequisite year of university studies. Those who take this option are then eligible for the three-term program. For the most part candidates prefer the course of action described in (2) because it saves a term; but some people take the prerequisite year intending to go into another academic field and then switch to library science.

(4) By agreement among Canadian Library schools, a student who has completed two terms of study towards the MLS at one accredited school may transfer to another at the end of the second term and receive full credit for work done in the school of first choice. Such a transfer student will be admitted to the third and fourth terms of work at SLIS. Transfer of other credits may per permitted on appeal to the Faculty Council.

(5) Candidates with a BLS from an accredited school or its equivalent will be admitted to the third and fourth terms of study.

(6) A candidate whose undergraduate preparation falls below B standing may undertake a year of university study as a special student and must obtain at least a B in each of the five subjects taken. On the satisfactory completion of this year of study, application may then be made for admission to the three-term program. By following this plan a candidate can earn the MLS in five consecutive terms.

(7) Applicants who do not have a degree can be admitted to the School as special students. In unusual circumstances they may be admitted as degree candidates on the recommendation of an ad hoc University Committee.

In eigher (3) or (6) the courses taken should in general include: additional work in the area of undergraduate specialization, particularly in the form of twentieth-century studies; additional language studies because of the value of language competence in the library and information field; and, possibly, a general introduction to the computer.

Since languages are important in the School's professional field, a reading knowledge of at least one language other than English is expected. The second language must be one useful in study and research in library and information work.

FEES

At the time of printing this Calendar, the fees for graduate programs in Ontario universities are under discussion with the Department of University Affairs. When the Fee Schedule has been struck, it will be issued separately.

Members of Faculty of the School of Library and Information Science

Professors

Cameron, W.J., BA, MA *Victoria, NZ;* PhD *Reading*

Colvin, Laura C., AB *William and Mary;* ABLS, AMLS *Michigan*

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*

Fyfe, Janet, MA *Edinburgh,* FLA

Held, C.H., AB, MA *Albion;* MALS *Michigan;* PhD *Wayne State*

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

Assistant Professors

Bird, D.A., BA *Queens;* BA *Waterloo;* MLS *UWO*

Strathern, Gloria M., BA *New Zealand;* Dip *NZLA*

Lecturers

Cheng, Jennie Shun-Ling, BMus *Mount St. Vincent;* BLS *UBC;* MLS *UWO*

Hansen, Kersti, BA, BLS *McGill;* MLS *Toronto*

Ketchum, Elizabeth, BA, BLS *Toronto;* MLS *UWO*

Scott, P.G., BA, MA *Auckland;* MA *McMaster;* MLS *UWO*

Sprovieri, Carmen L., BA, MA *Gonzaga;* BLS *UBC;* MLS *UWO*

Honorary Lecturers

Plotkin, H.N., BA *Michigan;* PhD *John Hopkins*

Priestly, Diana M., BA, LL B *UBC;* MLL *Washington*

Richardson, R.A., BA *Sir George Williams;* MA *McGill;* PhD *Wisconsin*

Stierwalt, R., BA *Fresno State;* MLS *Univ. of California, Berkely*

Visiting Lecturers

Beckman, Margaret, BA, BLS *Toronto*

Belzer, J., BA, BSEE *Cooper Union*

Debenham, W.S., AB, MLS *Pittsburgh*

Donnelly, Eleanore C., BA, BLS, MLS *Toronto;* MA *UWO*

Langmead, L.S., Dip Arch, ARIBA, MRAIC *London School of Architecture Regent St. Polytechnic*

Parkhill, J.T., BA, MA *Queens;* BLS *McGill;* AM *Harvard*

Ready, W.B., BA, DipEd *Wales;* MA *Manitoba;* MLS *UWO*

Reitman, E., LésL *Paris*

Schryver, Louise, BA, BLS *Toronto;* AMLS *Michigan*

BRESCIA COLLEGE – HURON COLLEGE – KING'S COLLEGE

Affiliated Colleges of The University of Western Ontario

Brescia, Huron and King's Colleges are affiliated with The University of Western Ontario and in all academic matters, including admission requirements and academic standards, operate under the same regulations of the Senate of the University as the faculties and schools of the Constituent University. Students registered at the Affiliated Colleges are eligible to take courses at the University as well as in their own College, and the degrees earned are those of the University of Western Ontario.

Courses offered by the Affiliated Colleges are open to students registered at the Constituent University subject to Senate regulations.

Students of the Affiliated Colleges are members of the University of Western Ontario community and participate fully in the academic, recreational, social and cultural life on the University campus.

All three are residential, liberal arts colleges specializing in student-centered education. In order to promote their educational goals and create the atmosphere of a small college, the affiliated colleges maintain their own campuses in close proximity to the University.

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Brescia College

OFFICERS OF ADMINISTRATION

Dean

Sister Arleene Walker, BA, MA

Registrar

Sister Paula Janisse, BA, MA

Librarian

Sister Pierina Caverzan, BA, MALS, *Rosary College*

Assistant Librarian

Christine Suokaite, BA, MALS, *Rosary College*

THE PRELIMINARY YEAR

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.

Each case of an adult special student seeking admission to the Preliminary Year will be judged on its own merits by the Admission Committee of the College.

The Preliminary Year will consist of the following program:

FOR ADMISSION TO FIRST YEAR GENERAL PROGRAM (Arts, Music, or Social Science), or to Secretarial Sciences:
English 10

Four other courses to be chosen from:
Geography 10; History 14; Home Economics 25; Mathematics 10; Religious Studies 10; a second language 2 or 10.

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 colleges as part of the Preliminary Year:

English 10. Literature and Composition.
3 hours – 11

French 10. Intermediate French.
Prerequisite: Grade 12 French
3 hours – 23

Geography 10. Geography of Canada.
3 hours – 2

History 14. History of Canada and the United States.
3 hours – 14

Latin 10. Intermediate Latin.
Prerequisite: Grade 12 Latin
3 hours – 26

Programs

The General Programs and some of the Honors Programs are available in Brescia College. All laboratory courses in the Natural Sciences are taught entirely in the College of Science.

HOME ECONOMICS

Requirements for Admission. Grade 13 standing to include Chemistry, with English and Biology recommended.

This program which leads to the BA degree in Home Economics, is offered jointly by the University and Brescia College. All Home Economics courses are offered at Brescia College. The Department of Education of Ontario accepts a degree in this program as the academic qualification for High School Assistant's Certificate, Type B, for teaching in the Elementary or Secondary Schools of Ontario.

Students may also take dietetic interneship in institutions approved by The Canadian Dietetic Association for professional training.

First Year

Biology 21
Chemistry 25
Home Economics 23, 25
two approved options from two of Arts, Science, or Social Science

Second Year

Botany 36
Chemistry 33
One approved Senior Option
Home Economics 30, 31, 32, 33

Third Year

Biochemistry 46
Home Economics 40, 41B, 42, 45
One approved Senior Option (for students interested in teaching and related fields).

OR

Biochemistry 46
Home Economics 41A, 42, 45, 48, 49 (for students interested in Food Service Management, Nutrition, and Therapeutics).

HOME ECONOMICS

23. Basic Design. Fundamentals of design and color (1st term); Interior Design; basic principles of interior design 2nd term.
2 hours – 13

25. Introduction to Home Economics. Consumer study of food, nutrition, clothing, textiles. General principles of home management and equipment.
2 hours – 31

30. Clothing. Historic costume; socio-psychological aspects of clothing; the economics of clothing consumption. Comparative clothing construction.
2 hours lecture, 2 hours laboratory – 13

31. Normal Nutrition. Normal requirements of the body; food nutrients and their functions; deficiencies.
2 lectures both terms, 2 laboratory hours
1 term – 21

32. Food Science. Experimental approach to the study of factors influencing behavior of foods.
1 lecture, 3 laboratory hours – 31

40. Textile Science. Fibre, fabric and yarn structure; chemical and physical properties of fibres; chemical and mechanical finishes; textile processing. Identification and testing of textile materials. Costume design through flat pattern methods.
Prerequisite: Home Economics 30
2 hours lecture, 3 hours laboratory – 7

41. Advanced Nutrition. Nutritional needs during infancy; the adolescent. Diet therapy.
Seminars
3 hours – 14

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
1 lecture, 3 laboratory hours – 19

45. Consumer Economics and Communications. Marketing and consumer problems. Demonstration techniques.
1 lecture, 2 laboratory hours – 23

48. Institutional Food Production. The application of scientific principles to the preparation, selection and storage of quality food. Floor planning, layout and equipment. Laboratory exercises and field trips.
2 lectures, 3 laboratory hours – 29

49. Institution Management. Principles of management; personnel supervision; financial control. Clinical studies.
3 hours – 33

PHILOSOPHY

20x. Introduction to Philosophy. This course deals with fundamental problems in Philosophy, especially in Natural Philosophy, Moral Philosophy and Metaphysics, and the solutions offered by great thinkers in these respective fields.
3 hours – 1

RELIGIOUS STUDIES

10. An Introduction To Old Testament Theology. Through the men and messages of the Old Testament.
2 hours – 18

25. Foundations of the Christian Religious Response. A study of the major trends in comtemporary religious education, showing how they are related to their historical antecedents. (Course primarily for teachers and/or students planning to enter the teaching profession).
2 hours – 4

35. Comparative Religion. Ecumenism – a study of contemporary religions under various aspects.
2 hours – 8

37. 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 – 14

Members of the Faculty of Brescia College

CLASSICAL STUDIES

Associate Professor

Margaret (Sister), BA *UWO;* MA *Detroit*

Assistant Professor

Mary Turner (Sister), BA *UWO;* MA *Notre Dame*

ECONOMICS

Instructor

Poddar, Arun K., BA *New Delhi;* MA *UWO* (part-time)

ENGLISH

Professor

Sharp, Corona (Sister), BA *UWO;* MA, PhD *Notre Dame*

Assistant Professors

McKenzie, Mary Louise (Sister), BA, MA *UWO*
Zoll, Allan R., AB *Michigan;* AM *New Mexico;* PhD *Michigan*

Instructors

Black, Monte W., BA, MA *UWO* (part-time)

Lancaster, Olive (Mrs.), BA *UWO* (part-time)

Vernon, Sally (Mrs.), BA *Cambridge* (part-time)

FRENCH

Assistant Professors

Carter, Carol, BA, MEd *Arkansas;* MA *Wisconsin*

Fajardo, S.J., MA *Montreal;* PhD *Chicago*

Instructor

Bush, Muriel M. (Mrs.), MA *Edinburgh* (part-time)

GEOGRAPHY

Instructor

Angelov. A.A., BA *UWO* (part-time)

GERMAN

Lecturer

Teresa (Sister), BA *UWO*

HISTORY

Instructors

Shirley, Robert, BA *UWO* (part-time)
Skidmore, Patricia, BS Ed *Kent;* MA *Kent* (part-time)

HOME ECONOMICS

Associate Professor, Acting Chairman

Penney, Rhoda, BSc, BEd *St.F.X.;* MS *Cornell*

Assistant Professors

Chen, Shirley C. (Mrs.), BA *Taiwan;* MA, PhD *Nebraska*

DiStefano, Lynn D. (Mrs.), BA *Russel Sage;* AM *Boston;* MA *Pennsylvania*

Lecturers

Mercer, Nina (Mrs.), BS *Nebraska;* MS *Cornell*

Rickman, Lillian (Mrs.), SB *Chicago;* RPDt

Sather, Jane M., BSc *Sask;* MS *Guelph*

Instructors

Byard, Catherine E. (Mrs.), BSc *Mt. Allison* (part-time)

Gregory, A. (Mrs.), A.O.C.A. (part-time)

McNab, Elizabeth (Mrs.), BSc *St.F.X.* (part-time)

Portis, Mary (Mrs.), BA *Kansas;* MA *UWO* (part-time)

Shivers, Janice L. (Mrs.), BS *Kansas*

PHILOSOPHY

Professors

St. Michael (Sister), BA *UWO;* MA *Cath. U. of America;* PhL, PhD *Laval* (part-time)

Ryan, Michael (Reverend), BA *UWO;* MA, PhD *Notre Dame*

Associate Professor

Cavanagh, P.E. (Reverend), BA *UWO;* MA *Toronto;* PhD *Notre Dame* (part-time)

PSYCHOLOGY

Professors

Kuntz, Dolores (Sister), BA *UWO;* MA *Detroit;* DipPsych, PhD *Queen's*

Paul, J., BA, MA, PhD *Toronto* (Part-time)

Assistant Professor

Howe, Margaret (Mrs.), BA *Acadia;* MA *Toronto* (part-time)

RELIGIOUS STUDIES

Professor

Murphy, Richard T.A. (V.Rev.), OP, STD *Angelicum;* SSD *Biblical Commission;* STM *Dominican Order* (part-time)

Lecturers

Glendinning, B.D. (Reverend) BA *UWO;* STB *St. Peters;* SLDip *St. Anselms*

Hunter, R.B. (Reverend), BA *UWO;* STB (part-time)

SPANISH

Lecturer

Howard, Zilpa (Mrs.), BA *Indiana;* MA *UWO* (part-time)

SOCIOLOGY

Professor

Walker, Arleene (Sister), BA *UWO;* MA *Cath. U. of America*

Lecturers

Chaudhary, Krishna (Mrs.), BA *Bihar;* MA *Bihar;* MA *Windsor*

Ryan, Frances (Sister), BA, MA *UWO* (on leave)

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Huron College

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 *UWO*

Registrar

J. Catharine Ridley

PROGRAMS

The General Program in Arts and Social Science, all Honors Programs which include English, French, History or Philosophy, and the first two years of Honors 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 below 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.

Courses listed by number and title only are also taught at the Constituent University, and their full descriptions may be found in the earlier sections of the Calendar under the general University listings. Courses listed with complete descriptions have been designed to fit in most closely with the College's own pattern of courses and are taught at Huron College only. As with all other courses in the curriculum, they have been approved for full academic credit by the Senate of the University of Western Ontario.

Economics 20. Introduction to Economics
Economics 31. International Trade and Finance
Economics 33. Money and Income
English 20. Introduction – General Literature and Composition
English 45. Comparative Literature
English 47. Contemporary Literature
English 256. Shakespeare
English 270. Literature of the Romantic Revival (1798-1832)
English 280. Literature of the Sixteenth Century excluding drama
English 360. Literature of the Victorian Period (1832-1900)
English 400. Modern Drama
English 438. Literature of the United States from 1885.
English 458. Canadian Literature
English 459. Modern Literature (1890-1945)

French 20. French Language and Literature
French 271. Phonetics, Grammar Composition and Oral Practice
French 290. Introduction to French Literature
French 398. Literature of the Nineteenth and Twentieth Century, and of French Canada

Hebrew. These courses are given in Huron College on behalf of the Faculty of Arts of the Constituent University, and Huron College.

Hebrew 1-10. Grammar, Text of Genesis 1-3; 22; Jonah.
Language Laboratory – Israeli Hebrew
5 hours – 27

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 – 17

Hebrew 30. Hebrew Prophetic Literature. Selection from Amos, Isaiah of Jerusalem Jeremiah, and Deutero-Isaiah. Introduction to Gunkel's *Formgeschichte* and *Gattungskritik.*
Prerequisite: Hebrew 20
2 hours – 21

History 20. Modern Europe
History 22. American History
History 25. Canada since Confederation
History 31. Canada – from the beginnings of the French Régime to 1957
History 32. England, 1399-1642
History 34. The United States, Colonial Period to the Present
History 35. England since 1688.
History 60. Selected Topics in American History
History 231. Canada – from the French Régime to 1957
History 234. The United States, Colonial Period to the Present
History 236. Europe and England in the 16th and 17th centuries
History 335. England, 1715 - 1914
History 432. England, 1399 - 1642

Mathematics 20. Introductory Calculus and Algebra

Philosophy 20. Introduction to Philosophy
Philosophy 30. Philosophical Classics
Philosophy 31. Introduction to Logic
Philosophy 42. Ethics
Philosophy 43. Philosophy of Religion

Philosophy 44. Philosophy of the Social Sciences. An examination of the development of psychological theories, concepts, and methods with

emphasis on problems of theory formation, confirmation, evidence, types of explanation, etc. The course will focus primarily on the way in which psychological theories are verified and the status of such verification procedures.

This course is taught as an interdisciplinary course with the Department of Psychology at Huron College. Students may receive credit for either Philosophy 44 OR Psychology 98 but not both.

48. Contemporary Philosophy
49. Special Topics in Philosophy
257. Early Modern Philosophy
362. Ethics

Politics 20. Introduction to Political Science

Psychology 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 and one laboratory hour a week

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.

56. Developmental Psychology: Basic Principles. (formerly Psychology 36)
59. Developmental Psychology: Exceptional Children. (formerly Psychology 39)
79. Abnormal Psychology. (formerly Psychology 48)

Psychology 94. 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 20 or 22, or permission of the instructor
3 hours a week (lectures and seminars)
Students taking Psychology 94 may not take Psychology 77 for credit.

Psychology 95. 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 or permission of the instructor
2 lecture hours and 2 laboratory hours a week

Students taking Psychology 95 may not take Psychology 51 or Psychology 53 for credit.

Psychology 97. 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 or permission of the instructor
2 hours a week

Students taking Psychology 97 may not take Psychology 72 for credit.

Psychology 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 a week

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.

Area of Concentration. Students wishing approval from the Huron Department of Psychology for an area of concentration must take, in addition to Psychology 22, any two of the three senior method-oriented courses (95, 96, 97) and two other full courses at the senior level (two half courses may take the place of one senior course).

Religious Studies 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

Religious Studies 30. An Introduction to the Living Religions of the World. A study of the history, faith, and practices of the major living religions.
2 hours

Religious Studies 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

Religious Studies 38. Is God fact or fiction? How is he related to this world? An Introduction to Biblical Process Thought. 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

Religious Studies 44. 20th Century Theological and Philosophical Problems. A seminar designed to exhibit clearly the rational basis for 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 Morality, 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

Religious Studies 45. An Introduction to New Testament Greek.
2 hours

MEMBERS OF THE FACULTY OF HURON COLLEGE

CLASSICS

Associate Professor

Allen, F.H. (Reverend), MA, BD *Oxon*

ECONOMICS

Lecturers

Inman, M,K., BA *Acadia;* MA, PhD *Harvard;* DLitt *Acadia*

Williamson, D.R., BA *Liverpool;* MA *UWO*

ENGLISH

Professors

Poisson, R., BA, MA *British Columbia;* PhD *Washington*

Jared, Eleanor Croysdale, BA *UWO;* MA *Toronto;* AM, PhD *Radcliffe*

Associate Professor

McVey, E.D., BA, MA *Queen's;* PhD *Princeton*

Assistant Professors

Bowe, Elaine Campbell, BA *Mills College;* MA *Indiana;* PhD *Oregon*

Revell, Elizabeth, BA *Toronto;* MA, BLitt *Oxon*

Lecturers

Davies, Corinne, BA *UWO*

Speer, R.S., BA *Yale;* MA *University of Pennsylvania*

Tucker, J.A., BA, BMus *McGill;* MA *Toronto*

FRENCH

Associate Professors

Black, G.A., BA, MA *Toronto*

Metford, Deborah, BA, MA *British Columbia;* DU *Paris*

Lecturers

Miller, Valentine, BA, MA, BLitt *Oxon*

Van der Wel, C.M., BA *London;* MA *UWO*

HEBREW

Professor

Parke-Taylor, G.H. (Reverend), BA, MA *Toronto;* LTh, BD, DD *Wycliffe*

Lecturer

Kay, H. (Reverend), BA *Dalhousie;* LTh *King's;* BD *Trinity;* MA *Temple*

HISTORY

Professor

Henderson, J.L.H. (Reverend), BA, BD, DD *UWO*

Assistant Professors

Blocker, J.S., BA *Florida;* MS, PhD *Wisconsin*

Owens, G.L., BA, MA *Nebraska;* PhD *Wisconsin*

Roper, H., BA *Dalhousie;* BA, MA *Cantab*

MATHEMATICS

Lecturer

Rowe, Maureen J., BA, BEd *Memorial;* MA *UWO*

POLITICS

Lecturer

Sinclair, D.K., BA *Hull;* MA *McMaster*

PHILOSOPHY

Assistant Professors

Miller, R.P., BA *Cornell;* BPhil *Oxon;* MA *Michigan*

Schachter, Jean-Pierre, BA *City College of New York;* MA *City University of New York;* PhD *Syracuse*

Lecturer

Irvine, D.F., (Reverend), BA *UWO;* BTh *Huron;* MA *University of Waterloo*

PSYCHOLOGY

Professor

Burd, F.W., BA, MA *Toronto*

Associate Professor

Sansom, Moira, BA *Mount Allison;* BA *New Brunswick;* BLS *Toronto;* PhD *London*

Lecturers

Dalrymple, S.D., BSc *Queen's;* BSc *Belfast;* MSc, PhD *Alberta*

Harris, T. (Reverend), BA *Toronto;* LTh *Wycliffe;* MA *Columbia;* BD *Union Theological Seminary*

Munn, F.G., BA *Waterloo Lutheran;* MA *UWO*

Thomas, N.W., BA *Mount Allison;* MA *Toronto;* PhD *UWO*

RELIGIOUS STUDIES

Professor

Morden, J.G. (Venerable), BA *Toronto;* LTh, BD, DD *Wycliffe;* STM *Union Theological Seminary;* DTh *General Theological Seminary, New York*

Associate Professor

Allen, F.H. (Reverend), MA, BD *Oxon*

Lecturers

Irvine, D.F. (Reverend), BA *UWO;* BTh *Huron;* MA *University of Waterloo*

Kay, H. (Reverend), BA *Dalhousie;* LTh, BD *Trinity;* MA *Temple*

Rousom, G.E. (Reverend), BA *UWO;* MA *Toronto;* BD *Emmanuel*

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King's College

King's College is a co-educational, residential, liberal arts college affiliated with The University of Western Ontario. The College is sponsored by The Roman Catholic Diocese of London, but is open to students of all denominations.

OFFICERS OF ADMINISTRATION

Principal and Dean of Arts

Owen D. Carrigan, BA *St.F.X.;* MA *Boston U;* PhD *Maine*

Assistant Dean of Arts

Ronald Toop, BA, MA, PhD *Toronto*

Registrar

J.H. Campbell, BA *St.F.X.;* BEd, MA *UNB*

Assistant Registrar

Helen J. Chenier (Mrs.), BA *St.F.X.*

Librarian

P.D. Mitchell, BA, BLS *McGill*

Comptroller

M.D.J. Low

PROGRAMS

The General Program in Arts and Social Science 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. It should be noted that one tuition fee covers all courses the King's student may wish to take at King's or at the Constituent University.

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.

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 which will complete his desired program.

Business 20. Introduction to Business
Economics 20. Introduction to Economics
Economics 30. Price and Income Analysis
Economics 38. Economic Development
English 20. General Literature and Composition
English 24. Forms of Fiction
English 26. Forms of Drama
English 38. Canadian Literature and Culture
English 45. Comparative Literature
English 47. Contemporary Literature
English 256. Shakespeare
English 360. Literature of the Victorian Period (1832-1900)
English 436. Moderm Drama
English 458. Canadian Literature
English 459. Modern Literature (1890-1945)
French 20. French Language and Literature
French 32. French Civilization and Conversation
French 34. French Drama
French 271. Phonetics, Grammar, Composition and Oral Practice
French 290. Introduction to French Literature
History 20. Modern Europe
History 31. Canada
History 35. England since 1688
History 70. Selected Topics in European History
History 231. Canada
History 335. England (1715-1914)
History 346. Modern France
Mathematics 20. Introductory Calculus and Algebra
Philosophy 20. Introduction to Philosophy
Philosophy 38. Existentialism
Philosophy 42. Ethics
Philosophy 43. Philosophy of Religion
Politics 20. Introduction to Political Science
Politics 38. Political Parties and Pressure Groups
Psychology 20. Introduction to Psychology
Psychology 77b-78a. Theories of Personality
Psychology 56. Child Psychology
Psychology 79. Abnormal Psychology
Psychology 72. Social Psychology
Sociology 20. Introduction to Sociology
Sociology 39. The Family
Sociology 43. Minority Groups

For descriptions of any of the above courses please see the pertinent sections of the Calendar.

Courses and programs offered at King's but not at the Constituent University.

Philosophy

41. 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.
2 hours — 30

45. Political Philosophy. Critical readings from selected original sources of the political thought of ancient, modern, and contemporary thinkers.
3 hours — 5

Religious Studies

21. Faith and Doubt in the 20th Century. An investigation of the problems encountered by the modern mind in accepting the Bible. The approach combines history, literary analysis, archaeology and biblical theology.
2 hours — 18

32. Contemporary Moral Problems. A critical examination of comtemporary 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.
2 hours — 26

35. Comparative Christian Religions. A study of the theological issues at stake in the division of Christendom; approaches to Christian unity; Ecumenism.
2 hours – 8

40. The Theology of Marriage. A study of marriage considered from the psychological, moral, social and theological points of view.
2 hours – 28

46. 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.
2 hours – 34

48. Systematic Moral Theology. Introduction to general moral theology; nature and task of moral theology, Biblical moral theology, historical overview of moral theology, nature law, virtue of prudence, sin, human act.
2 hours – 16

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 responsible to the humanistic and democratic 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 careers in Social Work, including Municipal Welfare Departments, Provincial and Federal Departments of Health and Welfare, Departments of Manpower and Immigration, Correctional Services, Veterans' Affairs, Children's Aid Societies, Family Service Agencies, School Social Work, Family Medical Services, Hospital Social Service, Psychiatric Social Work, Services to the Elderly, Youth Work, Community Work and work in cooperation with allied health professions. 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 career in social service, 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. Students may be admitted to Year II of the Bachelor of Social Welfare Program by meeting the following standard:

A student will be eligible for admission if he has an average of at least 70% in Social Welfare 20 and two other subjects; or an average of 70% in any three courses if he has not taken Social Welfare 20 in the first year. He must have a passing grade in all other courses. A student who does not meet this requirement but who has a good academic record and the necessary personal qualifications, may be admitted by special permission of the Social Welfare Department.

All applicants seeking admission to the second or subsequent years of the Social Welfare Program must be interviewed by the Department. Students wishing to enter the Social Welfare Program 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. If Social Welfare 20 is not taken in the First Year, it must be taken as an option in the Second Year.

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 maximum 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. Contemporary social issues and problems will be examined in relation to existing and proposed legislation, administrative programs and organized services. Present-day welfare policy and programs in North America will also be examined in the light of intellectual, political and legislative history. Canadian policy and programs will receive special emphasis.
3 hours – 22

230. Contemporary Social Welfare Problems. An examination of contemporary social welfare problems such as "mental health", "juvenile deliquency", "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 Honors Program)
3 hours – 5

235. Social Inquiry and Social Work. A survey of research in social work practice and methods. Studies of the profession and assessments of social work methods will be included and examined from the viewpoint of the consumer of research.
3 hours – 32

236. Human Behavior and Social Environment. A seminar in analysing social functioning in relation to social systems.

General Systems Theory is employed as a framework for applying information and documents from diverse sources to the understanding of human behavior 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.
3 hours – 17

330. Social Work Methods. 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. Direct 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.
3 hours – 28

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.
3 hours – 20

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.
3 hours – 10

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.
– 6

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).
– 16

446. Quantitative Methods in Social Inquiry. Following course 334, 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.
3 hours – 34

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Professors

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Lenardon, D., BA, BEd *Alberta;* MA, PhD *Toronto* (Professor, French)

Melzer, A.E., BA *Brooklyn,* MS, DSW *Columbia* (Professor, Social Welfare)

Murphy, R.T.A., (The Very Reverend) OP, STD *Angelicum;* SSD *Biblical Commission;* STM *Dominican Order* (Professor, Religious Studies)

Ring, W. (Reverend), BA *UWO;* PhL *Laval* (Professor, Philosophy)

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de Fabry, Anne Srabian, BA *Houston;* MA, PhD *Rice* (Assistant Professor, French)

Koop, P.A., BComm *Manitoba;* MBA *Toronto;* PhD *Southern California* (Assistant Professor, Economics)

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Toop, R., BA, MA, PhD *Toronto* (Assistant Professor, English)

Lecturer

Orange, J.C., MA, PhilM *Toronto* (Lecturer, English)

Webb, P.L.C., BA, MA *UWO* (Lecturer, History)

Part-Time Faculty

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Robertson, J., BA *Gonzaga;* MSW *Ottawa* (Social Welfare)

Smith, T., BA *St. Mary's;* MSW *Maritime School of Social Work* (Social Welfare)

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