Ann Haggerty
Registrar Office

University of

Western Ontario

LONDON • CANADA

University College

Middlesex College

The College of Music

and Affiliated Colleges

ARTS AND SCIENCE CALENDAR 1963-64

1963

JANUARY						
S	M	T	W	T	F	S
—	—	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	—	—

FEBRUARY						
S	M	T	W	T	F	S
—	—	—	—	—	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	—	—

MARCH						
S	M	T	W	T	F	S
—	—	—	—	—	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	—	—	—	—	—	—

APRIL						
S	M	T	W	T	F	S
—	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	—	—	—	—

MAY						
S	M	T	W	T	F	S
—	—	—	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	—

JUNE						
S	M	T	W	T	F	S
—	—	—	—	—	—	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	—	—	—	—	—	—

JULY						
S	M	T	W	T	F	S
—	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	—	—	—

AUGUST						
S	M	T	W	T	F	S
—	—	—	—	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	—	—	—	—	—

OCTOBER						
S	M	T	W	T	F	S
—	—	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	—	—

NOVEMBER						
S	M	T	W	T	F	S
—	—	—	—	—	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	—	—	—	—

1964

JANUARY						
S	M	T	W	T	F	S
—	—	—	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	—

FEBRUARY						
S	M	T	W	T	F	S
—	—	—	—	—	—	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

MARCH						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	—	—	—	—

APRIL						
S	M	T	W	T	F	S
—	—	—	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	—	—

MAY						
S	M	T	W	T	F	S
—	—	—	—	—	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	—	—	—	—	—	—

JUNE						
S	M	T	W	T	F	S
—	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	—	—	—	—

JULY						
S	M	T	W	T	F	S
—	—	—	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	—

AUGUST						
S	M	T	W	T	F	S
—	—	—	—	—	—	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	—	—	—	—	—

SEPTEMBER						
S	M	T	W	T	F	S
—	—	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	—	—	—

OCTOBER						
S	M	T	W	T	F	S
—	—	—	—	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	—	—	—	—	—

DECEMBER						
S	M	T	W	T	F	S
—	—	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	—	—

Academic Calendar

1963

July 2, Tuesday ..... Summer Session begins

August 1 and 2
Thursday and Friday ..... Supplemental examinations

August 12, Monday ..... Summer Session Examinations begin

August 15, Thursday ..... Summer Session ends

September 3, Tuesday ..... Last day for receiving applications and certificates for intramural students

September 9, Monday ..... Conference of the Faculty of Arts and Science

September 16, Monday ..... All Freshmen enroll, Thames Hall

September 17, Tuesday ..... All upperclass students enroll, Thames Hall

September 18, Wednesday ..... Lectures and laboratory work begins

September 26, Thursday ..... Faculty of Graduate Studies enrolls, 9.00 - 12.00 and 1.30 - 5.00 in Convocation Hall

October 1, Tuesday ..... Council of the Faculty of Arts and Science

October 4, Friday ..... Last day for the enrolment of full-time students
Last day for adding any subject

October 14, Monday ..... Thanksgiving Day, Holiday

October 21, Monday ..... Arts Educational Policy Committee of the Senate

October 30, Wednesday ..... Executive Committee of the Senate

October 31, Thursday ..... Meeting of the University Senate

November 1, Friday ..... Autumn Convocation

November 5, Tuesday ..... Council of the Faculty of Arts and Science

November 11, Monday ..... Remembrance Day Ceremony
Arts Educational Policy Committee of the Senate

November 15, Friday ..... Last day for withdrawing from any subject without counting it as a failure.

December 2, Monday ..... Arts Educational Policy Committee of the Senate

December 3, Tuesday ..... Council of the Faculty of Arts and Science

December 5, Thursday ..... Executive Committee of the Senate

December 6, Friday ..... Meeting of the University Senate

December 18, Wednesday Christmas Vacation begins
at 5 p.m. ..... First Term Ends

The Academic Calendar

1964

January 2, Thursday	Lectures resume Second Term begins
January 7, Tuesday	Council of the Faculty of Arts and Science
January 9 and 10 Thursday and Friday	Summer School Supplemental Examinations
February 4, Tuesday	Council of the Faculty of Arts and Science
February 10, Monday	Arts Educational Policy Committee of the Senate
February 13, Thursday	Executive Committee of the Senate
February 14, Friday	Meeting of the University Senate
February 23-29	Conference Week
March 3, Tuesday	Council of the Faculty of Arts and Science
March 7, Saturday	Founder's Day
March 9, Monday	Arts Educational Policy Committee of the Senate
March 27, Friday	Good Friday, Holiday
April 7, Tuesday	Council of the Faculty of Arts and Science
April 9, Thursday	Second term ends
April 13, Monday	Arts Educational Policy Committee of the Senate
May 2, Saturday	Examinations end
May 5, Tuesday	Council of the Faculty of Arts and Science
May 11, Monday	Arts Educational Policy Committee of the Senate
May 18, Monday	Last Day for receiving applications for Summer Session from students registering for the first time
May 26, Tuesday	Executive Committee of the Senate
May 27, Wednesday	Meeting of the University Senate
May 28, 29, 30 Thur., Fri., Sat.	Spring Convocation
June 8, Monday	Arts Educational Policy Committee of the Senate
June 15, Monday	Last day for receiving Applications for Summer Session from students previously registered

CONTENTS

	Page
Buildings Directory	inside front cover
Academic Calendar	iii
The University	1
The Board of Governors	2
The Senate	3
University Officers	4
Administrative Departments	4
Faculty of Arts and Sciences	5
Admission Requirements	6
Fees	8
Housing	10
Health Services	10
Conduct of Students	11
Military Studies	12
Scholarships	13
Medals	22
Financial Assistance	23
Academic Regulations	27
Length of Programs	
Attendance	
General Regulations	
Examinations	
Grades	
Failures	
Conditions	
Appeals and Petitions	
Teachers' Courses and Certificates	
Public School Inspectors' Certificates	
Programs	33
Course numbering system	33
The General Programs	34
Degree Programs in Nursing	42
Pre-Business	43
Premedicine	43
Honors Programs	45
University and Middlesex Colleges Faculties and Courses	68-115
College of Music Faculty and Courses	118
The Affiliated Colleges Faculties and Courses	122
Summary of Registration, 1962-63	135
Index	137

The University

The University of Western Ontario is composed of The Faculty of Arts and Science, The Faculty of Medicine, The Faculty of Graduate Studies, The Faculty of Law, The School of Nursing, The School of Business Administration and The Faculty of Engineering Science. The Faculty of Arts includes the University Colleges: University College, Middlesex College, and The College of Music; and the following arts colleges, affiliated with the University: Huron College, Brescia College, St. Peter's Seminary and Christ the King Colleges.

By its charter the University of Western Ontario may confer degrees, diplomas and certificates in any subject taught in the University or in theology as taught in any of the affiliated colleges.

The degrees conferred by the University are:

Honorary Degrees: Doctor of Divinity; Doctor of Science; Doctor of Laws; Doctor of Letters; Doctor of Music; Doctor of Civil Law.

Degrees by Examination: Bachelor of Arts; Bachelor of Laws; Bachelor of Science; Bachelor of Engineering Science; Bachelor of Science in Nursing; Bachelor of Divinity; Master of Arts; Master of Laws; Master of Science; Master of Clinical Science; Master of Science in Nursing; Master of Engineering Science; Master of Business Administration; Doctor of Medicine; Doctor of Divinity; Doctor of Philosophy.

The diplomas awarded by the University are:

Diploma in Business Administration; Diploma in Journalism; Diploma in Public Health Nursing; Diploma in Nursing Education; Diploma in Nursing Service Administration; Music Graduate in Paedagogy.

HISTORY

"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 in Medicine in 1883. In 1923 by Act of the Provincial Legislature, the name of the University was changed to "The University of Western Ontario". By an Act of 1955 its powers were further defined.

In 1912 control of the Medical School by a joint stock company ended and it became the Faculty of Medicine, under the direct control of the same Board of Governors as the rest of the University. It occupied its present buildings in 1921.

The Faculty of Arts was closed from 1885 to 1895. In 1908 its charter was amended so that it became undenominational and was permitted to receive financial assistance from the City of London and later from the Province.

In 1924 the Faculty of Arts was moved to the present campus and in 1943 was re-named the Faculty of Arts and Science. In 1958 Middlesex College was established within the Faculty of Arts and Science.

Music Teachers' College was founded in 1945 and affiliated with the University. In 1958 it became a college of the Faculty of Arts and Science. The work of the college was extended in 1961 and the name was changed to The College of Music.

The Institute of Public Health was opened in 1915 and in 1917 became the Faculty of Public Health. In 1946 one section became a Provincial Laboratory and the other section the School of Nursing which was re-located on the main campus.

A separate Faculty of Graduate Studies was created in 1947 although post-graduate degrees had been conferred for many years.

The School of Business Administration was founded in 1950. Business Administration had been an honors program offered in the Faculty of Arts from 1920 to 1950.

The Faculty of Law was established in 1958.

In 1960 the Faculty of Engineering Science was established. From 1954 to 1960 Engineering Science was an honors program in the Faculty of Arts and Science.

LIBRARY

Arts and Science students have available the resources of the General Library, housed in the Lawson Memorial Library Building, and those of three reading rooms in the Physical and Chemical Sciences and Biological and Geological Sciences Buildings and Middlesex College. In addition, there are extensive collections of books and periodicals covering specific subjects in Business, Engineering, Law, Medicine and Nursing. These collections are designed primarily for the use of students in these fields.

The book collections of the University total more than 300,000 volumes. Currently the University receives annually about 3,000 periodicals in all subjects and in many languages.

The Board of Governors

Officers of the Board:

Lt.-Col. D. B. Weldon, Chairman.

Mr. W. L. Duffield, Vice-Chairman.

Mr. H. F. Rowland, Secretary.

Ex officio Members:

The Chancellor, The President, The Vice-President, His Worship the Mayor of London, The Warden of the County of Middlesex.

Appointed Members:

By the Lieutenant-Governor in Council—Mr. W. L. Duffield, Brig W. H. Hemphill, Mr. J. O. Hughes, Lt.-Col. D. B. Weldon.

By the London City Council—Capt. Joseph Jeffery, Mr. Robert H. Reid, Lt.-Col. J. E. Smallman, Hon. Lt.-Col. J. Gordon Thompson.

Elected Members:

By the Board of Governors—Dr. A. R. Ford, Mr. Louis L. Lang, Mr. C. F. Stevens, Mr. J. H. Stevens.

By the Alumni Association—Dr. C. Y. Hauch, Mr. Harold R. Newell.

The Senate

Officers of the Senate:

The President and Vice-Chancellor (Chairman), The Vice-President (Vice-Chairman), The Registrar (Secretary).

Ex officio Members:

The Chancellor, the Vice-Chancellor, the Vice-President, the Principal of University College, the Principal of Middlesex College, the Principal of The College of Music, the Principal or other head of each affiliated college, the Dean of each Faculty and School of the University, the Librarian, the Chairman of the Board of Governors, the Registrar, the Director of the Summer School and Extension Department, the Director of the French Summer School, the President of the General Alumni Association (or his deputy).

Elected or Appointed Members:

Ten representatives of the General Alumni Association.

Six representatives of the City of London (three appointed by the City Council, two by the Board of Education, and one by the Separate School Board).

Four representatives, to be elected from their own number by the Principals of the Secondary Schools in the fourteen counties of Western Ontario listed below.

The following number of representatives of each Faculty and School of the University (in addition to its Dean): The Faculty of University College—three; The Faculty of Middlesex College—one; the Faculty of Medicine—two; the Faculty of Graduate Studies—one; the School of Nursing—one; the School of Business Administration—one; the Faculty of Engineering Science—one.

One representative of each of the following: The Board of Governors; each affiliated college which offers a degree program; each City Council and each County Council in the Counties of Brant, Bruce, Elgin, Essex, Grey, Huron, Kent, Lambton, Middlesex (except the City of London), Norfolk, Oxford, Perth, Waterloo and Wellington; the graduates of each affiliated college.

University Officers

(Unless otherwise stated, degrees are from this university)

Visitor: His Honor, the Lieutenant-Governor of Ontario.

Chancellor: Verschoyle P. Cronyn.

President and Vice-Chancellor: George Edward Hall, B.S.A., M.S.A., M.D., Ph.D., Toronto; D ès Sc., Laval; LL.D., F.R.S.C.

Vice-President: Ross Baxter Willis, B.A., M.A.

Dean of Men: Thomas Leslie Hoskin, B.A., M.A., Northwestern.

Dean of Women: Leola Ellen Neil, B.A., M.A.; Ph.D., Toronto.

Comptroller: R. R. Glover, B.A.

Librarian: James John Talman, B.A., M.A.; Ph.D., Toronto; D.Litt, Waterloo; F.R.S.C.

Physician: Richard John Bowen, B.A., M.D.

Registrar: James Keith Watson, B.A., M.A., McMaster; M.A., Ph.D., Toronto.

Administrative Departments

Alumni:
Director: George Hartwell, B.A.

Athletics:
Director of Intercollegiate Athletics: John Pius Metras.
Business Manager of Athletics: Ernest Slatter.

Buildings and Grounds Department:
Superintendent: John Shortreed, B.A.Sc., Toronto.
Assistant Superintendent: R. M. Yeo, B.Sc., Queen's.

Comptroller: R. R. Glover, B.A.

Food Services Department:
Manager: George A. Bullas.

Library:

Librarian: James John Talman, B.A., M.A., Ph.D., Toronto; D.Litt., Waterloo, F.R.S.C.

Assistant Librarians: Lillian Rea Benson, B.A.; E. Jean Elson, B.A.; B.L.S., McGill; John P. McLaughlin, B.A., Queen's; Ph.D., London.

Museum of Indian Archaeology:

Honorary Curator: Wilfrid Jury, D. ès L., Montreal.

Honorary Assistant Curator: Elsie McLeod Jury, B.A., B.L.S., Toronto; A.M. Columbia.

Registrar's Office:

Registrar: James Keith Watson, B.A., M.A., McMaster; M.A., Ph.D., Toronto.

Assistant Registrar: Margaret P. May, B.A.

Faculty of Arts and Science

Dean: Mark Keith Inman, B.A. Acadia; M.A., Ph.D. Harvard.

UNIVERSITY COLLEGE

Principal: Robert James Uffen, B.A.Sc., M.A., Toronto; Ph.D.; P. Eng.

Representatives on the University Senate: Professors R. W. Nicholls, E. G. Pleva, A. E. Raymond.

MIDDLESEX COLLEGE

Principal: Donald Gordon Grady Kerr, B.A., McGill; Ph.D., London.

Representative on the University Senate: Professor R. N. Shervill.

THE COLLEGE OF MUSIC

Principal: Clifford von Kuster, Mus. Bac., Toronto.

AFFILIATED COLLEGES

The affiliated colleges are associated with the University Faculty of Arts and Science. See Affiliated Colleges section.

Admission Requirements

FIRST YEAR

All certificates and supporting documents concerning application for admission to the Winter Session must be presented to the Registrar's Office by September 1st, and for admission to the Summer Session by May 15th. A non-returnable fee of two dollars must accompany all non-Canadian certificates submitted for evaluation.

Students From The Province Of Ontario: An average of 60 percent in nine Grade XIII papers is required. These must include English, Latin or Mathematics (a minimum of two papers), one other language, and three other papers to be selected according to the program which the student proposes to follow.

For some programs with limited enrolment capacity, preference will be given to students who have completed admission requirements in five years of Secondary School attendance.

The Admissions Committee will consider for acceptance the record of a student who lacks adequate standing in one Grade XIII paper.

The Grade XIII subjects are: English (Literature and Composition), Mathematics (Algebra Geometry, Trigonometry and Statics), Languages (two papers each—French, German, Greek, Italian, Russian, Spanish), History, Physical Science (Physics and Chemistry), Biology (Botany and Zoology), Geography, Music.

Students From Canadian Provinces Other Than Ontario: Senior Matriculation from Secondary Schools of other provinces, in subjects equivalent to Ontario Grade XIII papers, with standing satisfactory to the Admissions Committee.

Students From The United Kingdom: The General Certificate of Education in five or six subjects, two of which must be at the advanced level, appropriate to the course of study desired. English Literature, a language other than English, and either Mathematics or Latin must be included.

Students From Other Countries: Pre-University background to be assessed by the Admissions Committee, to equate standard of achievement with Ontario Grade XIII admission requirements.

Adult Special Students: Applicants for admission to the Faculty of Arts and Science who are at least 25 years of age and who have been absent from formal education for at least 3 years, may be admitted by special permission of the Admissions Committee as Adult Special Students. Preferably, but not necessarily, these applicants should recently have obtained standing in five Grade XIII papers; two in English, two in another language and one other. Anyone accepted by the Admissions Committee as an Adult Special Student is not required to fulfil any other admission requirement.

OTHER YEARS

Undergraduate credits obtained while in attendance at another University will be assessed by Admissions Committee, to apply against courses specified for degrees from the University of Western Ontario. A student wishing to transfer from another University will not be considered if he has been denied re-admission to his present University.

Official transcripts and supporting documents concerning his record must be presented to the Registrar by July 1st.

Fees

Fees are due and payable in full on registration day but if necessary the fees may be divided into two instalments payable on the first day of each term. The extra charge for this division is $5.00. Students may not attend lectures or examinations unless their fees are paid, except by permission of the Dean of the Faculty and the Comptroller. No student shall be recommended for any diploma or degree until his tuition fees and other accounts owed to the University are paid.

Students registered in a College of the University and transferring during the same year to an affiliated college will be charged by the University, on such transfer, a minimum penalty of $50.00.

Students transferring from an affiliated college to the University under similar circumstances will be charged by the University the full annual fee for the year regardless of the date of the transfer.

The Board of Governors reserves the right to amend fees after the printing of this list.

ANNUAL FEES

Full-time intramural undergraduate students:

This includes registration, regular examination and graduation fees, laboratory and microscope charges, University College Council, University Concert Series, Athletic Association, Thames Hall facilities and Students' Health Insurance and Health Service fees, for the following:

First year	$465.00
Second and subsequent years, Honors programs in the Humanities and the Social Sciences (excluding Business Administration, Journalism, Mathematics and P.H.R.E.)	$465.00
Second and subsequent years, all other programs	$465.00

Part-time Students:

Intramural, each course including examination	$ 90.00
Correspondence, Extension, Summer School, each course, including examination	$ 90.00
Half-course	$ 45.00
Non-credit (non-refundable), each course	$ 25.00
Laboratory and microscope fees, each science course	$ 10.00

EXAMINATION FEES

Payable at time of application for any of the following: Supplemental, each paper	$ 10.00
Presiding fee at an outside centre, each half-day	$ 5.00
Aptitude Test, at date other than regular testing-period	$ 6.00
Special examination, at date other than May or August, each paper	$ 15.00

LATE REGISTRATION

For intramural students (waived only when a medical certificate of serious illness is presented)	$ 5.00

CERTIFICATES

Evaluation of non-Canadian certificates for admission	$ 2.00
Transcript of record, each copy	$ 1.00

DEGREES AND DIPLOMAS

Degree of B.D.	$ 24.00

(The fees for all other degrees and diplomas are included in the annual fees.)

STUDENT EXPENSES

A statement of annual expenses can, at best, be approximate; purely personal items (e.g., laundry, clothes, recreation, transportation) are not included in the summary below and in other items individual tastes may vary. The following is a suggestion only:

Tuition and incidental fees	$ 465.00	to	$ 500.00
Board (34 weeks)	$ 650.00	to	$ 700.00
Books and supplies	$ 60.00	to	$ 80.00
	$1,175.00		$1,280.00

Housing

Accommodation for more than 1,400 students is provided in University and College residences.

Spencer Hall, for women, fourth concession London Township, has a capacity of 104. Freshmen in the Colleges of the University are given preference. Fees are $650 for the academic year. For information write to: Dean of Women, University of Western Ontario.

Medway Hall, and **Sydenham Hall,** for men, University Drive, have a capacity of 600. Freshmen are given preference but some accommodation is reserved for students in other years. Fees are $700 for the academic year. For information write to: The Warden, Medway Hall, University of Western Ontario.

Brescia Hall, for women, Western Road, is the residence of Brescia College. Only students enrolled in Brescia College are accepted for residence. For information write to: The Dean, Brescia College.

Huron College, for men and women, Western Road, has a capacity of 275 in several residences. Men students from other colleges are accepted. For information write to: Dean of Residence, Huron College.

Christ the King College, for men, Waterloo Street, gives preference to students enrolled in Christ the King College but accepts some men from other colleges. For information write to: Dean of Residence, Christ the King College.

Lutheran Student Centre: Accommodation for nine men is available at 1079 Richmond St. For information write to: The Resident Pastor, Lutheran Student Centre, 1079 Richmond St.

Newman House: Accommodation is available for 14 men at 76 Albert St. For information write to Rev. P. E. Crunican, College of Christ the King.

Westminster College: United Church residences for men and women, Richmond St. North. Accommodation is available for 116 women and 116 men. For information write to: The Bursar, Westminster College.

Students who will not be living in residence may apply to the Housing Bureau, Room 26 Thames Hall, between August 1 and October 1 for assistance in finding accommodation in private homes in the University area. Students registering in an affiliated college should apply to the Dean of Residence of their college for help in finding private accommodation.

Health Services

A physical examination by practising physicians under the supervision of the University Health Service is required of all students who are enrolling in this University as intramural students in the winter session for the first time.

The University Health Service operates a clinic, Room 17, Thames Hall, where students may consult the University Physician for diagnosis, treatment or advice. A V.O.N. nurse is in attendance. The Health Service secretary deals with inquiries and assists students with insurance claims.

A student who is taken ill out of clinic hours should call the family physician of those with whom he is residing or the University Physician for advice.

All students entering this University for the first time must take intracutaneous testing for tuberculosis. Students showing a positive reaction must have chest x-rays. Students with a negative reaction should have the skin test repeated once yearly.

Examinations results will not be sent to students who fail to observe these regulations.

Since 1 January, 1959, the Ontario Plan of Hospital Care Insurance offered by the Ontario Hospital Services Commission has been the only form of basic hospitalization permitted in Ontario. All students are expected to possess this protection as individuals or, if under 19, through their parents' policies.

Students registering for the first time from provinces which do not possess a reciprocal provincial hospital scheme, and those coming from outside Canada, are reminded that the Ontario Plan now requires a three-months' waiting period before benefits may be obtained.

Medical in-hospital, surgical and diagnostic benefits are arranged by the University for all full-time students through a group of associated life insurance companies.

Conduct of Students

The University of Western Ontario is a private university. In accordance with the University of Western Ontario Act, 1955, the University is governed by the Board of Governors, which is responsible for its property and financial affairs, and by the Senate, which is responsible for its educational policy.

The Board of Governors and the Senate have established the regulations and the conditions of admission to and continuance at the University. The payment of tuition fees, which represent approximately one-third of the cost to the University of a student's education, does not alone entitle the student to membership in the University. As the Senate imposes academic standards so, too, the Board of Governors requires a standard of personal conduct in keeping with the status of a university student. The following regulations must be observed by all students:

All students are expected to conduct themselves in a manner becoming scholars and ladies and gentlemen. The University reserves the right at any time to suspend or dismiss a student whose conduct or academic standing is in its judgment unsatisfactory.

Intoxication, or disorder and bad manners arising from the use of alcoholic beverages, are particularly serious offences and may subject the student involved to the penalty of suspension or dismissal from the University.

Any student may be placed under discipline when, in the opinion of the Dean of a Faculty or the Dean or Principal of a College or School, his attitude toward his University obligations has been unsatisfactory.

A student who is suffering from any illness or physical disability is expected to report it immediately to the University Health Office even if he or she is to be treated by physicians outside the University.

The Board of Governors grants permission to students to bring cars into the grounds of the University on condition that the University's traffic regulations are obeyed and that the cars are parked in parking areas designated by the Board. This general privilege may be restricted by the Board from time to time as need arises, and will be withdrawn from any student who persistently disobeys the regulations. Campus parking for students may have to be restricted very soon due to the rapidly growing enrolment of the University. Students are advised to avoid bringing cars on the campus. Bus service within the City is able to supply adequate transportation from almost any part of London to bus stops throughout the campus.

The Board of Governors reserves the right to establish regulations with respect to dress as well as conduct on the premises of the University.

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

The Board of Governors collaborates fully with the University Students' Council in the interpretation and enforcement of these regulations.

STUDENT ACTIVITIES

No class or group of students may engage in any public effort as a body representing the University or any organization within the University without the permission of the Advisory Committee of the Board of Governors. Nor may the name of the University be used in any publication without the permission of the Advisory Committee.

The constitution of any proposed club or society sponsored by the University Students' Council must be approved by the Advisory Committee before such organization can be recognized.

Military Studies

Military Studies may be credited as a half course in the General Program.

THE RESERVE PLANS

The University Naval Training Division (UNTD) of the Royal Canadian Navy, the Canadian Officers' Training Corps (COTC) of the Canadian Army, and the University Reserve Training Plan (URTP) of the Royal Canadian Air Force offer undergraduates a training plan to qualify for the Queen's Commission in the service of their choice while attending University.

Winter Training is one night a week up to a maximum of 64 hours a winter for three or four academic years with pay up to a maximum of 16 days (approx. $120) a winter.

Summer Training taken with the Regular Force is a minimum of 12 weeks up to a maximum of 22 weeks for a minimum of two summers but usually three, paid at the rate of $225 a month. Rations, quarters, transportation, uniforms, medical and dental care are provided.

When the student completes the service training program and graduates from University he will have qualified for the Queen's Commission, to serve with the Regular or the Active Reserves or be transferred to the Non-active Reserve.

After registering at the University apply to any one of: University Naval Training Division, Room 113, Thames Hall; Canadian Officers' Training Corps, Room 117, Thames Hall; 105 University Squadron RCAF, Room 112, Thames Hall.

THE REGULAR FORCE PLANS

The Tri-Service Regular Officer Training Plan (ROTP) is a completely subsidized university plan covering tuition, books, and year-round room and board, pay, and medical and dental care for up to four years of undergraduate study.

The subsidization plan for medical students covers the above, with the addition of a graduated pay and rank throughout four years of undergraduate study.

Graduates of this plan are commissioned in the Regular Force and are given the option of release after three years' Regular Service as an officer.

Apply to ROTP Selection Board, National Defence Headquarters, Ottawa prior to enrolment at University, or to the Service of your choice, as shown above at any time after enrolment at University and prior to graduation.

Admission Scholarships

Candidates must notify the Registrar of the University of Western Ontario of their intention to compete for Admission Scholarships in the following June, by submitting a Scholarship Application Form by May 1st. For certain scholarships, an additional form entitled "Application for Specific Scholarships" is required. Where an additional application form is required it is indicated in the description of the award.

Application forms are available at the Office of the Registrar or at Secondary Schools. Information on Admission Scholarships for applicants outside the Province of Ontario may be obtained, on request, from the Registrar.

The colleges of the University are: University College, Middlesex College, The College of Music. Information concerning scholarships tenable at any of the affiliated Colleges may be obtained from the Registrar of that College.

Scholarships are awarded on the results of the Ontario Grade XIII examinations. Each candidate must write at least six papers to compete for any scholarship, and must write all the papers on which a specific award is based. No scholarship will be awarded unless the candidate obtains an average of First Class Honors (75%) on the papers involved in the award. Aegrotat standing in cases of illness will not be considered.

Scholarships may not be deferred. Winners must register for a full year's work in the academic session following the award. In order to retain the privilege of continuing scholarships, the winners must maintain a required degree of proficiency in each year of their academic program.

Board of Governors' Scholarships

1. *Two General Proficiency Scholarships awarded for* highest standing in nine papers:
   i) English, Mathematics (any two), History, two foreign languages;
   ii) English, Mathematics (Algebra, Geometry, Trigonometry), a language and a science, either Physical (Physics and Chemistry) or Biological (Botany and Zoology).

The value of each scholarship is $900 ($300 the first year, $200 in each of the next three years).

2. Six Scholarships awarded for highest standing in six papers:
   i) English, Mathematics (any two), and two other papers;
   ii) English, French and German or Greek or Latin or Spanish;
   iii) French, two of German, Greek, Latin, Spanish;
   iv) Mathematics (Algebra, Geometry, Trigonometry), Physics and two other papers;
   v) Biology, Mathematics (any two) and two other papers;
   vi) Latin, French and German or Greek or Spanish.

The value of each scholarship is $500 ($300 in the first year, $200 in the second year).

3. One scholarship awarded for highest standing in nine papers in each regional secondary school.

Eligible schools include all Collegiate Institutes, Vocational Schools and High Schools, whether Commercial, Agricultural or Academic, in the counties named in the University of Western Ontario Act, 1923: Brant, Bruce, Elgin, Essex, Grey Huron, Kent, Lambton, Middlesex, Norfolk, Oxford, Perth, Waterloo and Wellington, and all the cities situated therein. The successful applicants must have an average of at least First Class Honors (75%) in nine papers of the examination written in June of the year of the award, and chosen from the following subjects: English, French, German, Greek, History, Latin, Mathematics, Spanish, Botany, Zoology, Physics, Chemistry, Geography.

The value of each scholarship is $200, payable the first year.

4. Scholarships for proficiency in single subjects.

Awarded to the applicant with an average of 75% on six papers and the highest standing in ONE of the following subjects: a) Latin; b) Greek; c) English; d) Mathematics (Algbera, Geometry, Trigonometry); e) French; f) German; g) Biology; h) Physics and Chemistry; i) Geography and History.

The value of each scholarship is $100, payable the first year.

The George Williamson Young Memorial Scholarship: One General Proficiency Scholarship for the highest ranking student in Grade XIII English, History, one language, and one other paper. The value of this Scholarship is $500 ($300 the first year; $200 the second year). The capital fund for this scholarship was bequeathed to the University by the late George Williamson Young of Port Stanley.

The Aluminum Company of Canada Limited Scholarship: One General Proficency Scholarship for the highest ranking student in Grade XIII Physics, Chemistry, Mathematics (any two papers) and two other papers. The value of this Scholarship is $500, payable the first year.

The Ontario Hockey Association Scholarship: The recipient of this award is selected by the University Scholarship Committee, subject to the general conditions governing admission scholarships. The value of this Scholarship is $150, payable the first year.

The Canadian Waterman Foundation Scholarship: One scholarship for the highest standing in eight papers, including English Composition and English Literature. The value of this Scholarship is $100, payable the first year.

The Queen Elizabeth Scholarships of the Corporation of the City of London: Two scholarships for the man and the woman with the highest standing in nine Grade XIII papers who have lived in the City of London for at least three years, and who have attended secondary schools in the City of London for their three final years. The value of each scholarship is $1,000, payable the first year.

The Harriet M. Giddens Scholarship: One General Proficiency Scholarship for the highest ranking student from the City of London who has not qualified for a more valuable award. The value of this Scholarship is $200, payable the first year. The capital fund for this scholarship was bequeathed to the University by the late Harriet M. Giddens of London.

The London Life Actuarial Scholarship: (Specific Scholarship Application Form required). One General Proficiency Scholarship, based on nine papers of Grade XIII examinations, especially on high standing in Mathematics, for admission to General Program 1 or 2. The winner of the award must agree to take the actuarial option of the Honors Mathematics or the Honors Mathematics & Physics Program. If the winner fails to maintain First Class Honors, he will forfeit the award until he regains that standard; if he withdraws from the actuarial option, he will forfeit the award permanently. The value of this scholarship is $2,400 ($600 in each of the four years).

SCHOLARSHIPS AWARDED ON STANDING IN NINE ONTARIO GRADE XIII PAPERS OR SENIOR MATRICULATION FROM THE OTHER POVINCES OF CANADA

The General Motors Canadian Scholarship: (Specific Scholarship Application Form required). Three general proficiency scholarships awarded to Canadan citizens on the basis of academic record and all-round ability. The amount of the award will depend upon the need of the individual for financial assistance. The total value of this scholarship is $800 to $8,000 ($200 to $2,000 per year for four years.)

The Union Carbide Canada Scholarship. (Specific Scholarship Application Form required) One General Proficiency scholarship awarded to a male student on the basis of academic record and all-round ability, enrolling in an Engineering, Physical Science or Business Administration course with a view to entering business, industry or the field of education. The value of this scholarship is $2,500 ($700 the first year, $600 in each of the next three years).

The Inco Scholarship: (Specific Scholarship Application Form required). One scholarship awarded by the International Nickel Company of Canada, Limited, on the basis of academic record, character, and financial need, to a student enrolling in an engineering, geology, geophysics or physics and mathematics course. The total value of the award is $300, plus tuition and incidental fees, each year for four years.

SCHOLARSHIPS TENABLE AT ANY ONTARIO UNIVERSITY

The Scholarships of the Institute of Chartered Accounts of Ontario: Two General Proficiency Scholarships for students entering a Business Administration or Commerce Program. Application should be made to The Institute of Chartered Accountants of Ontario, 69 Bloor Street West, Toronto 5, before June 20th. The value of each scholarship is $1,000.

The National Secretaries' Association Scholarship: One scholarship for a student from a secondary school in Windsor or Riverside, Ontario, who enters a Secretarial Science program. Apply to: The Scholarship Chairman, Windsor Chapter of the National Secretaries' Association, 1163 Pierre Avenue, Windsor, Ontario. The value of this scholarship is $100.

The Imperial Leaf Tobacco Scholarships: Two scholarships awarded on the basis of standing in any nine Grade XIII papers to students enrolled the previous year in the following two schools: East Elgin District High School and Delhi District High School. Application should be made to the Principal of the appropriate school. The value of each award is $1,000 ($600 the first year; $400, the second).

The H. J. Heinz Company of Canada Scholarship: One scholarship awarded on the basis of academic record and character to a student enrolled in the district high schools in Essex and Kent Counties. Application should be made to the Principal of the School attended, by May 1st. The value of the scholarship is $1,200 ($300 each for four years).

The Strathcona Trust Scholarship for Women: To be awarded to women whose academic and Physical Education standards are above 75% and who enrol in the four-year course in Physical Education: Application should be made to: The Director, Physical and Health Education Branch, Department of Education, 559 Jarvis Street, Toronto 5, before June 18th. The value of the scholarship is $500 ($250 the first year and $250 the second).

The London Board of Education Awards: To be awarded to students from London Secondary Schools, who enrol in an Honors Program leading to Type A certification in the Ontario College of Education. The winners must agree to teach in the Secondary School system in Ontario for three years after graduation. Application should be made to the London Board of Education by June 1st. The value of the scholarship is $500 each year for four years and $1000 while attending the Ontario College of Education.

Undergraduate Scholarships and Prizes

No applications are required, awards are made by the Arts and Science Scholarship Committee on the basis of examination standing. Scholarships are not ordinarily awarded to students who do not obtain a first class standing.

To be eligible for an award, a student must take the prescribed subjects in his year and program. Students who take courses out of sequence or fail to write any examination due to illness or other reasons, are not eligible. Recipients of continuing scholarships must maintain a required degree of proficiency in each year of their academic program.

Except for The Governor-General's Medal and the Brescia College Prizes and Awards, scholarships and prizes will be granted only to full-time students in the colleges of the university.

No limit is placed on the number of awards a student may receive in any one year. Where a student receives more than one award, the Scholarship Committee may place a limit on the total amount of money received by the student in that year.

Awards of $200 and over will be paid in two instalments on November 1st and February 1st.

Board of Governors' Scholarships: For general proficiency in the following:

General Program 1, first year: $60.

General Program 2, first year: $60.

The F. G. Jewell Scholarship: $50; the highest ranking student in Junior Group 2 who enters one of the professional programs: Honors Business Administration, Business Administration and Secretarial Science, Journalism or Physical and Health Education. Given in memory of the late Francis G. Jewell, C.A., former Auditor of the University.

The W. J. Roche Scholarship: $50; for the highest ranking student in General Program 2, first year, who enters one of the social science programs: Honors Economics, Politics, Geography, History or Psychology. Given in honor of the late Hon. W. J. Roche, M.D., LL.D., C.M.G., former Chancellor of the University.

The B'Nai Brith Scholarship: $50; for the highest ranking student in General Program 2, first year, who enters one of the humanities programs: English, Ancient or Modern Languages and Literatures, or Philosophy. Given each year by the London Branch of the Order.

Board of Governors' Scholarships: $60 each; for highest standing in the Second and Third Year of Honors Programs when no other scholarship is awarded.

The Albert O. Jeffery Scholarship, No. 3: $60; for Honors Mathematics, Third Year. These three Scholarships were bequeathed to the University by the late Mrs. Jeffrey as a memorial to her husband, Mr. Albert O. Jeffery, K.C., D.C.L., LL.D., former president of the London Life Insurance Company.

The Richard and Julia Butler Scholarship: $60; for Second Year Honors Botany. This Scholarship was bequeathed to the University by the late Mrs. Mary E. B. Moorhouse.

The A. N. Knowles Scholarship: $60; for Honors Chemistry, Second Year.

The J. C. Knowles Scholarship: $60; for Honors Chemistry, Third Year. The above Scholarships are donated to the University as memorials by Mrs. A. N. Knowles, London.

The William Wyatt Scholarship, No. 1: $60; for Honors English Language and Literature, Second Year.

The William Wyatt Scholarship, No. 2: $60; for Honors History, Second Year. The capital fund for these Scholarships was bequeathed to the University by the late William Wyatt, of London.

The Myrtle Rowntree Memorial Scholarship: $60; for Honors English Language and Literature, Third Year. This Scholarship was established as a memorial to the late Myrtle Martindale Rowntree, a graduate in Honors English and History, by her brothers and sisters.

The J. P. Bickell Foundation Scholarship: $1,200; for a student entering the second year of the Honors Geology Program; $600 the second year, $400 the third year, and $200 the final year, if he maintains First Class Honors standing from year to year.

The Johnson's Wax Scholarship: $600 a year for a period of three years; to the *outstanding man in General Program 1, first year,* who enters the Honors Chemistry Program or the Honors Chemistry Program with Physics option. The selection is to be made by the Scholarship Committee, who may take into consideration the financial need of the applicants; the award is to be announced each Spring. If the successful candidate falls below First Class standing in Chemistry or fails to attain reasonably high standing in his accessory subjects, the scholarship shall revert to the top ranking First Class student in the same year provided his financial need warrants his selection.

The Rhoda Ann Rinn Scholarship in English Literature: $1,000; to be awarded on the basis of academic standing in General Program 2, first year, to a student in a College of the University who enrols in the second year of Honors English Language and Literature. The winner will be selected by the Scholarship Committee, on recommendation of the Department of English, from applications to be received by the Registrar before May 1st. $500 will be payable in the second year, $300 in the third year and $200 in the final year, provided the student maintains First or Second Class Honors and remains in the Honors Program in English Language and Literature. This Scholarship was established as a memorial to his mother, by the late Lionel Harris Rinn, Honors English graduate of this University.

The Hon. Edward Blake Scholarship, No. 1: $100; for Honors Economic and Political Science, Second Year. Offered in 1963-64.

The Hon. Edward Blake Scholarship, No. 2: $100; for Honors Economic and Political Science, Third Year. Offered in 1963-64. These Scholarships were endowed by the late Major Hume Cronyn, K.C., M.P., in memory of his uncle, the Hon. Edward Blake, sometime Premier of Ontario and, later, member of the British House of Commons.

The Joseph Henry Marshall Scholarship: $60; for Honors History, Third Year. Open only to Canadian-born students. To be awarded in 1963-64. Bequeathed to the University by Mrs. Amy Marshall as a memorial to her late husband, Joseph Henry Marshall, M.P., to commemorate his interest in all phases of Canadian History.

The Andrew Grant Scholarship, No. 1: $60; for Honors Economics, Second Year. Offered in 1962-63.

The Andrew Grant Scholarship, No. 2: $60; for Honors Economics, Third Year. Offered in 1962-63.

The Andrew Grant Scholarship, No. 3: $100; for Honors Political Science, Second Year.

The Andrew Grant Scholarship, No. 4: $100; for Honors Political Science, Third Year. These Scholarships were bequeathed to the University by Mrs. Grant as a memorial to her husband, Mr. Andrew Grant, St. Thomas.

The John McEachern Scholarship: $150; in memory of Mr. Thomas E. Carr, a graduate of this university; for the student with the highest standing in Third Year Honors English and History who enrols in the Fourth Year.

The John Gordon McIntosh Scholarship, No. 1: $60; for Honors Mathematics and Physics, Second Year.

The John Gordon McIntosh Scholarship, No. 2: $60; for Honors Physics, Third Year. These Scholarships were endowed by the late Mrs. John Gordon McIntosh, of Winnipeg, in memory of her husband.

The Wilhelmina and J. Gordon McIntosh Prize, No. 4: $60; for Honors Geography, Second Year tenable in the Third Year of Honors Geography.

The Wilhelmina and J. Gordon McIntosh Prize, No. 5: $60; for Honors Geography Third Year. These prizes were bequeathed to the University by the late Wilhelmina Morris McIntosh, of Winnipeg and London.

The Famous Players Canadian Corporation Scholarship: $500; to be awarded for high standing in the Journalism subjects of the penultimate year of the Honors Journalism program; the award may be augmented by a waiver of fees of the Trois Pistoles Summer School for a candidate who agrees to attend that Summer Session.

The Midland Securities Scholarship: $100; for the student with the highest standing in Journalism 20, who registers in the Honors Journalism program.

The Albert O. Jeffery Scholarship, No. 1: $60; for Honors Biology, Second Year.

The Albert O. Jeffery Scholarship, No. 2: $60; for Honors Biology, Third Year.

The Helen Atfield White Scholarship, No. 1: $100; for Pre-Medicine, First Year.

The Helen Atfield White Scholarship, No. 2: $150; for Pre-Medicine, Second Year. These Scholarships are endowed by the estate of Mrs. Edith Helen Atfield White, of Vancouver.

The California Standard Company Scholarship in Geology and Geophysics: $400 as an aid to the completion of the third or fourth year in Honors Geology, Geophysics. The selection committee is to be the Scholarship Committee. Women and foreign students are only eligible to receive the award subject to the approval of the Company. The Scholarship may revert if the highest-ranking student has any larger award.

The Kennecott Copper Corporation Minerals Exploration Scholarship: $1,000, to be awarded to a male student entering the third or the fourth year of the Honors Geophysics Program. Application must be made to the Registrar by May 1st.

The Northern Electric Undergraduate Scholarships: Two, $500 each; one in Honors Business Administration and the other in Engineering Science, Radio Physics or Honors General Physics, for a student who is a Canadian citizen or landed immigrant with at least one year successfully completed at a recognized university. The award is renewable for one year and is tenable in any year except the first.

The Mathematics Class of 1949 Prize: $25; for the highest standing in first year Calculus.

The National Council of Jewish Women of Canada (London Section) Scholarship: $60; for a graduating student in Honors Psychology.

The Allied Chemical Canada (Limited) Scholarship: $250 and tuition fees: for an outstanding student entering the final year of Honors Chemistry or the Chemistry option of Honors Engineering Science. He must be a citizen of Canada or the United States, and must not hold other awards exceeding $250. Intellectual capabilities, scientific ability, breadth of interest and leadership qualities shall form the basis of selection, rather than financial need.

The Timken International Fund Scholarship: Four at $250; two for the highest standing in the first and second years of Honors Mathematics and two for the highest standing in the first and second years of Honors Engineering Science.

The Reader's Digest Journalism Scholarships: Two at $500 each; for students entering the second, third or fourth years of the Honors Journalism Program. The candidates selected by the Scholarship Committee, on recommendation of the Head of the Department of Journalism, shall have attained an average of First Class standing in the Journalism and the other Honors courses of the previous academic year, with an average of at least Second Class standing in the remaining courses. If no undergraduate student qualifies for one of these scholarships, it will be awarded to a student entering the Graduate Diploma Program in Journalism at this University, on the basis of his academic record in his final undergraduate year, provided that his average is First Class.

No student shall hold both of these scholarships in one year, unless no other student, undergraduate or graduate, qualifies for the second scholarship.

The Frances M. Weir Scholarship: $100; when the winner of the Governor-General's Medal is a woman, she will receive a Scholarship in memory of Miss Frances M. Weir, who won the Governor-General's Medal when she graduated from this University in 1916; as the gift of Mr. Samuel E. Weir, Q.C. through The Weir Foundation.

Khaki University and Y.M.C.A. Scholarship: $60; for the highest average obtained by an ex-service man or woman, or the son or daughter of an ex-service man or woman, in any year of any program in University College.

Bruce County Scholarships: Two, $100 scholarships, one for the man, one for the woman, from Bruce County who stand highest in any year of any regular program in the University. These scholarships can be held only once by any student; an award won a second time reverts to the student coming next in order of merit. These scholarships were voted by the Council of Bruce County in June 1945.

Elgin County Scholarships: Two, $100 scholarships, one for the man, one for the woman, from Elgin County (excluding the City of St. Thomas) who stand highest in any year of any regular program in the University. These Scholarships were voted by the Council of Elgin County in June, 1945.

Huron County Scholarships: Two, $100 scholarships; one for the man, one for the woman, from Huron County who stand highest in any year of any regular program in the University. These Scholarships were voted by the Council of Huron County in 1944.

Summer School for French and English, Trois-Pistoles, Quebec: Applications for the following scholarships available for study at Trois-Pistoles will be received by the Registrar up to April 30th. The winners will be selected by a special committee:

Robert Simpson Company Limited Scholarships: two; $150 each.

Imperial Oil Company Limited Scholarship: $150.

Lachapelle Scholarship: $100

Board of Governors' Scholarship: $60.

The W. Sherwood Fox Scholarship.

Sir Wilfrid Laurier Memorial Scholarships: Two scholarships, one elementary ($30) and one advanced ($50); awarded annually for proficiency in French conversation; open only to Canadian born English-speaking students, or the sons and daughters of naturalized British subjects not of French parentage. The capital fund of these Scholarships was the gift of the Women's Liberal Association.

William C. Benson Prize: $50; for the highest standing in the Accounting course of Second Year Honors Business Administration.
Brescia College Home Economics Prize, No. 1: $25; for Third Year Clothing (Home Economics 30x).

Brescia College Home Economics Prize No. 2: $25; for Third Year Foods (Home Economics 32x).

W. W. Tamblyn Prize: $75; for the highest standing in the use of language (English Composition and Public Speaking) at the first year level. The capital fund for this prize was bequeathed to the University by the late W. W. Tamblyn of Bowmanville and by his son, the late Professor W. F. Tamblyn of London, formerly Head of the Department of English in this University.

The International Nickel Company Award in Journalism: A plaque and a portable typewriter for the student completing the *Graduate Diploma Program in Journalism* with the highest average, provided the average is at least 66 percent. The award shall be made by the Scholarship Committee on recommendation of the Head of the Department of Journalism.

Legation of Switzerland: Book prizes to students in modern languages, on recommendation of the Departments of Romance Languages and German.

Alumnae Association Prize: $10; Third Year Canadian History (History 31); only women are eligible for competition.

Gamma Phi Beta Alumnae Jubilee Prize: $10; Second Year Secretarial Science (Secretarial Science 30, 37, 38, 39).

Chemical Institute of Canada Prize: $25; in books to be awarded to the student with the highest standng in Chemistry Courses in the Honors Chemistry with Physics option Programs of the third year.

The Canadian Association of Geographers: Book prize to the graduating student who has demonstrated the greatest proficiency in this subject.

The Society of Chemical Industry Merit Award: A gold key and a year's subscription to the Journal of the Society (Chemistry and Industry) for the highest standing in the final year of Honors Chemistry or Honors Chemistry with Physics Options, provided that First Class Honors is obtained and the course has been completed in four years.

The Encyclopedia Britannica of Canada Award of Great Books: Achievement award for the science student with the best record of scholastic achievement in the other areas. which are generally recognized as comprising a liberal education.

The Stan C. Reade Award: $250; for the student with the highest (at least Second Class Honors) standing in the Honors courses of the second year, who registesr for the third year of the General Physics Option of the Honors Physics program.

The Stan C. Reade Essay Prize: A single reflex camera, for competition among fourth year Honors students in Physics.

The Gordon Dixon Memorial: Presented by the Geology class of 1957. A book to a senior student who has demonstrated interest and proficiency in Pleistocene Geology.

Medals Awarded to Graduating Students:

These medals are competitive and are awarded through selection by the Scholarship Committee from among students with first class standing.

Students in affiliated colleges are eligible for The Governor-General's Medal only.

University Gold Medals: For competition in the following Honors Programs: Botany, Business Administration and Secretarial Science, Chemistry with Physics options, Classics, English and French, English and German, English and Latin, English and Philosophy, French and Latin, Geography, Geology, Geophysics, Journalism, Modern Languages (French and German), Philosophy, Physical and Health Education, Physics and Mathematics, Radio Physics and Mathematics, Zoology.

Governor-General's Medal: General Program.

The Robert LaVerne Eagleson Gold Medal in History: Endowed by Miss Lyla Eagleson of Toronto, in memory of her brother who graduated from this University with the University Gold Medal in History in 1925.

The Joseph J. and Annie R. Kingston Gold Medal: Honors Mathematics Program 1, endowed by Dr. H. R. Kingston in memory of his parents.

The London Life Insurance Company Gold Medal: Honors Actuarial Mathematics.

The Northern Life Gold Medal: Honors Statistical Mathematics.

The Dillon Gold Medal: Honors Applied Mathematics.

Brescia College of Arts Award: Gold Medal: Home Economics.

The S. F. Glass Awards: Gold Medals: one in Honors Economics and the other in Honors Political Science. Endowed by the estate of the late S. F. Glass of London.

The Raymond Compton Dearle Gold Medal: Honors Physics and Mathematics. Endowed by former students and friends of Dr. Dearle, M.B.E., F.R.S.C., Head of the Department of Physics, 1919-1949; Research Professor of Physics, 1949-57.

The Alumni Gold Medals: Honors Chemistry, Honors English and French, Honors Music, and the degree program in Nursing. These medals were endowed by the Alumni Association of the University.

The A. R. Davidson Gold Medal: the final year of the General Program, completed in the Summer School, Correspondence and Extension Department; endowed by Arthur Robert Davidson, a graduate of this University.

The R. B. Liddy Gold Medal: Honors Psychology; endowed in memory of the late Professor R. B. Liddy, Head of the Department of Psychology in this University, 1931-54, by his children, Catherine and James, both graduates of this University.

The Frances Weir Gold Medal and Scholarship: $100 in English and History: the gift of Mr. Samuel E. Weir, Q.C. through the Weir Foundation, in memory of his sister Miss Frances M. Weir who died in 1959 and who was at the time of her graduation in 1916 the winner of the Governor-General's Gold Medal, which was then awarded to the best student in the Honors English and History Course.

The Helen M. B. Allison Gold Medal: Honors English Language and Literature. (Endowed by the Undergraduate Women's Organization).

The A. Dorothy Turville Gold Medal: Honors French and Spanish. (Endowed by the Undergraduate Women's Organization).

Admission Bursaries

To be eligible for a bursary, applicants must need financial assistance and have an average of 66% on at least eight Grade 13 papers. Winners of competitive scholarships who need additional assistance may also hold a bursary.

The following are applied for prior to registration:

The A.T.A. Trucking Industry Bursaries: $500 a year for non-residents or $250 for students from the City of London. Applications should be sent by May 1st to the Student-Aid Committee, Ontario Department of Education, Parliament Buildings, Toronto, Ontario.

The Atkinson Charitable Foundation Bursaries $200 - $400 for deserving students from the province of Ontario. Applications are to be submitted by May 1st to the Registrar of the University of Western Ontario, through your High School Principal.

The Dominon-Provincial Student-Aid Bursaries Type A: minimum value $100, maximum $500. Consult your High School Principal and obtain your application form from him. The Department of Education of Ontario also provides Student-Aid Loans.

The London Free Press Printing Company Limited Award: value $250 and summer employment worth $1000 or more, renewable each year for scholarship satisfactory to the selection committee; only students who have attended secondary schools in the 14 counties of southwestern Ontario for three years or more and have demonstrated their interest and ability in journalism are eligible. Details regarding application will be on file in your Principal's Office or may be obtained from the University Registrar.

The O-Pee-Chee Company Bursaries: value $500 renewable for two additional years; total value $1,500. Apply by September 1st to T. L. Hoskin, Secretary U. W. O. Student Loans and Bursaries Committee. Awards will be announced by September 1st.

The Steel Company of Canada Bursaries: value $500 renewable for three additional years; total value $2,000. Apply by June 1st, to T. L. Hoskin, Secretary, U. W. O. Student Loans and Bursaries Committee. Awards will be announced by September 1st.

The Children of War Dead (Education Assistance Act): Fees and monthly allowances are provided for the children of veterans whose death was attributable to military service. Enquiries should be directed to the nearest District Office of the Department of Veterans' Affairs. The Canadian Legion and the Provincial Chapter of the Imperial Order Daughters of the Empire also offer some scholarship and bursary aid to the children of deceased veterans. Apply through your local branches.

The Leonard Foundation Bursaries: The income of a trust created by the late Lieut.-Colonel and Mrs. Reuben Wells Leonard of St. Catharines is expended in paying part of the college expenses (up to $250) of selected students at this and other universities, for one to four years. Apply to the Toronto General Trusts Corporation, Toronto, or To T. L. Hoskin, The University of Western Ontario, London, for information and application forms, which are to be filed by February 15th.

The following are applied for after registration:

Applications should be submitted anytime in November after registration through T. L. Hoskin, Dean of Men, and Secretary of the U.W.O. Student Loans and Bursaries Committee.

Huron County Bursaries: value $100, tenabble only at the University of Western Ontario by a limited number of Huron County students on approximately the same terms as the Dominion-Provincial Student-Aid Bursaries, with the possibility of renewal from year to year for good scholarship within the University.

Oxford County Bursaries: value not less than $100 each, available to students from Oxford County (excluding Ingersoll and Woodstock) in any year of a degree course.

Perth County Bursaries: value $100, tenable at the University of Western Ontario by a limited number of Perth County students (excluding St. Mary's and Stratford) on approximately the same terms as the Dominion-Provincial Student-Aid Bursaries, with the possibility of renewal from year to year.

The Canadian Bechtel Limited Bursary: $100 - $300 for students entering Engineering Science or Business Administration.

The Lady Eaton Bursaries: $100 - $500 each, available for students in the College of Music.

Interprovincial Pipe Line Company Bursaries: value up to $200 each, available to students in any year of a degree course.

I.B.M. - Thomas J. Watson Memorial Bursaries: value up to $200 each available to students in any year of a degree course.

Bursaries from the W. F. Thomas Trust: value $100 - $300 each, available for students of this University, with preference to applicants from Elgin County, including the City of St. Thomas. A limited number of applicants from other parts of Ontario will be considered.

The Carnation Company of Canada, the Continental Can Company of Canada, Emco Ltd., the Ford Motor Company of Canada, Hiram Walker-Gooderham and Worts Limited, Imperial Oil Limited, International Nickel Company, Silverwood Dairies Ltd., etc., have Bursaries or Scholarships for children of their employees. Applications should be made through the Company concerned.

Other sources of financial aid are available in the second, third and fourth years for deserving students in degree courses.

Undergraduate Bursaries and Loans

Unless otherwise stated applications should be made through T. L. Hoskin, Secretary of the Student Loans and Bursaries Committee, during November.

Dominion Provincial Bursaries Type B: Valued up to $500. and available to 2nd, 3rd and 4th year students with financial need and a academic record of grade B or better in the previous year. Apply by October 4th.

Provincial Student-Aid Loan Fund: Valued up to $500. and available to full-time students who have been bona fide residents of Ontario for at least one year. Applicants must have an average of at least 60% and no unremoved failures. Apply by February 1st.

University Loan Funds: Valued up to $400. and available to full-time students in any year of any course. Apply by February 1st.

Huron County Bursaries (1948): Five tuition bursaries of $100. each, available to students who have lived in Huron County at least three years.

***Oxford County Bursaries* (1962:** Ten tuition bursaries of $100. each available to students from Oxford County, excluding Woodstock and Ingersoll.

Perth County Bursaries (1955): Five tuition bursaries of $100. each available to students from Perth County, excluding St. Mary's and Stratford.

Canadian Bechtel Limited Bursaries: Valued at $200: each and available to students in any year of a program in Engineering Science or Business Adminstration.

The Bill McKibbon Bursary: $500. a year throughout Premedicine and Medicine, provided 66 percent standing is maintained. A male student, preferably from Southwestern Ontario, is to be selected by the Secretary of the Loans and Bursaries Committee and the donor. Academic standing and personality will count equally in the selection. This Bursary is endowed by Dr. Walton McKibbon of Wingham, a Medical graduate of this Unversity, in memory of his son.

Local 27 U.A.W. Bursary: One bursary of $250. available to a student in any year of a degree program.

The Procter and Gamble Company of Canada Bursaries: $100. minimum to benefit students of good academic standing in any year of a degree program who are in financial need.

A.T.A. Trucking Industry Bursaries: The A.T.A. Trucking Industry Educational Foundation provides a limited number of bursaries for second and third year students. Value of awards is up to $250. Awards will be made at the end of the first term.

The Circle "K" Club Award: One grant or bursary of $100. for a deserving student in any year of a degree course.

The Greek Ladies' Philoptochos Society Award: One grant or bursary valued at $100. provided annually to a student of Greek descent who needs financial assistance.

The U.W.O. Alumni Association Bursary: One bursary of $400. for a deserving student in any year of a degree course.

The I.B.M. - Thomas J. Watson Memorial Bursary Fund: Five bursaries valued at up to $200. each available to full-time undergraduates in any year of a degree program.

The Interprovincial Pipe Line Company Bursary Fund: $1,500. to benefit students in any faculty or year who need financial assistance.

The Gilbert A. Labine Bursary Fund: Up to $500. available to deserving students in any year of any program.

I.O.D.E. (Municipal Chapter) Bursary: $100. for a student in any year of a degree program in Honors Science.

I.O.D.E. (William E. Saunders Chapter) Bursary: $100. for a student registered in the Botany option of Honors Biology during the preceding session. The bursary may be awarded, under special circumstances, to a student registered in a program other than Botany.

I.O.D.E. (Dr. John Dearness Chapter) Bursary: Awarded annually to a student in Honors Biology, preferably in a Mycology course.

I.O.D.E. (London Air Force Chapter) Bursary: $100. awarded annually by the Scholarship Committee to a third year student in any branch of Honors Physics, or any allied program.

I.O.D.E. Nina Moore Jamieson Chapter) Bursary: $100. awarded annually to the student with high standing in the Third Year of the Honors program in English and French.

I.O.D.E. (The Colonel William Gartshore Chapter) Bursary: $100. awarded by the Scholarship Committee to a student in any year in the Humanities.

I.O.D.E. (The Princess Patricia Chapter) Bursary: $100. awarded by the Scholarship Committee to a student in any year of any degree course.

I.O.D.E. (The Sir George Ross Chapter) Bursary: $100. awarded by the Scholarship Committee to a student in the 3rd or 4th year of a program in the Humanities or the Social Sciences.

I.O.D.E. (The Colonel G. Eric Reid Chapter) Bursary: $100. awarded by the Scholarship Committee to a student in any year of any program.

I.O.D.E. (Nicholas Wilson Chapter) Bursaries: $100. each for students enrolled in the final year of any Honors or professional course.

I.O.D.E (Overseas Chapter) Bursary: $100. for a student in final year of any degree program.

I.O.D.E. (Grace Blackburn Chapter) Bursary: $100. for a student enrolled in the second Premedical year (with the idea of subsequent awards to the same student throughout the program.)

I.O.D.E. (Dr. W. J. Stevenson Chapter) Bursaries: $100. each for a student enrolled in the second Premedical year; and for a student enrolled in any year of any course.

The W. F. Thomas Student-Aid Fund: Grants of $100. to $300. are available for students in financial need in any year of a degree program. An applicant must be able to give evidence of satisfactory academic achievement. Preference is given to applicants whose residence is in St. Thomas or Elgin County.

Atkinson Charitable Foundation Student-Aid Grants: Up to $200. to deserving students in any year of a degree program. Applicants must be residents of Ontario, able to give evidence of financial need.

Lady Eaton Bursaries: Up to $250. for students registered in the College of Music or in the General Arts course with music options.

The Isabel Dingman Memorial Bursary: $50. for a woman student entering the third or fourth year of the Honors Journalism program. This Bursary is the gift of the Canadian Women's Press Club (London Branch).

The Undergraduate Women's Organization Bursary: $100, for a woman in any year of any program, to be selected by a committee consisting of the Dean of Women, the Registrar, the Secretary of the Loans and Bursaries Committee, and the President and the Chairman of the Undergraduate Women's Organization. Applications must be submitted to the Dean of Women by October 15th.

Pi Beta Phi Fraternity Bursary: $50. to be awarded on February 1st to a woman student in any year of any program in any faculty, by a committee composed of the Dean of Women, the Registrar, the Secretary of the Loans & Bursaries Committee and the Scholarship Chairman of the local Fraternity Chapter.

University Women's Club Bursary: $100. for a woman student in her third or preferably, her fourth year in any Faculty. Awarded on the basis of satisfactory academic standing and some financial need, by a committee consisting of the Dean of Women, the Registrar, and a representative of the University Women's Club of London. Application should be made to the Dean of Women by October 1st.

The Olga Alice Miller Bursary: $100. for a woman in any year of any program. Applications should be made to the Dean of Women by November 1st. The Selection Committee shall be the Registrar, the Dean of Women, and the Secretary of the Loans and Bursaries Committee. This Bursary was established as a memorial to the late Olga Alice Miller, a 1928 graduate in Honors English and History, Assistant Registrar, 1933-51 by her mother Mrs. A. E. Miller and her sister Helen.

The London Centennial Chapter, National Secretaries Association (International) Bursary: $100. awarded annually for a woman or women in a senior year of Secretarial Science or the Honors Business Administration and Secretarial Science Program. Grants are to be awarded by the Dean of Women, the Head of the Department of Secretarial Science, and a member of the Executive of the London Centennial Chapter of the National Secretaries Association (International).

Royal Canadian Legion (London) Student-Aid Fund: Awards up to $200 each to deserving undergraduates who are veterans or dependents of veterans.

Academic Regulations

LENGTH OF PROGRAMS

General Programs in Arts and Science leading to the Bachelor of Arts general degree require three years for students admitted with Grade XIII standing.

Honors Programs leading to either the B.A. with honors in Arts or in Music or the B.Sc. with honors in Science require four years from Grade XIII standing. The first year of the General Program 1 or 2 is followed by three years of honors work.

Three year programs lead to a general B.A. with Home Economics, Music, Secretarial Science or Pre-Theological options.

The Pre-business program requires two years and, when followed by two years in the School of Business Administration, leads to the B.A. with honors in Business Administration.

The Pre-medical program requires two years in University College and is followed by four years in the Faculty of Medicine leading to the degree of M.D.

The program for the B.Sc.N. degree requires one year in University College, three years of professional training in a recognized hospital, followed by one year in the School of Nursing.

ATTENDANCE

A candidate for a degree must attend intramural classes of this University for two academic years, or for one academic year and two summer sessions, or for five summer sessions. This requirement is reduced to a minimum of one academic year, or three summer sessions, by attending Extension classes held by this University, or by the transfer of credit from an approved college or university..

Freshmen and sophomore students are required to attend eighty 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 his Dean or Principal. On recommendation of the Department concerned, and after due warning has been given by the Dean or Principal, the student may be debarred from taking the regular examinations in that course.

GENERAL REGULATIONS

When a student begins a foreign language in the University, no credit toward a degree will be given for the first year of that language unless that year is followed by a second year in the same language. A reading knowledge of two foreign languages is required for graduate work in many universities. If a second foreign language is begun here, it should not be left until the final year, because two years of it are required before any credit is obtained.

No student may begin two foreign languages in the same year.

The Admissions Committee may permit an undergraduate student to offer English, at the University level, as his foreign language, when he already has a mastery of an acceptable foreign language. This regulation shall apply to the student whose native language is not English or French, provided he has not had Grades VII to XIII in Ontario Schools (or their equivalent in other provinces of Canada, or in English-speaking countries). Such a student should take additional work in English to improve his competence and is not permitted to take less than the normal number of courses required for graduation.

An optional course need not be given unless it is elected by at least five students. Students are warned that the timetable often limits wide choice of options.

A student may take one course more than the number normally required for the academic year in which he is registered. Permission to take any other additional course must be obtained from the Academic Standing Committee. Tuition and laboratory fee for such additional courses will be charged at the usual rate for Special students.

Any student of the two final years who shows an unsatisfactory knowledge of spoken or written English must do additional assignments until his work satisfies his instructors.

A student by his registration subscribes to the regulations as stated from time to time in the University official announcements.

EXAMINATIONS

Regular Examinations:

Regular course examinations for the winter session are conducted in April and May and for the summer session in August.

A student who fails to appear for an examination at the time set in the timetable will not be allowed to write on the examination paper thus missed, but will be required to write a special examination at a time determined by the Registrar after consultation with the department involved.

A student who is compelled because of personal illness, or death in his family, to miss an examination must have his physician forward to the Registrar a certificate specifying the dates on which he was unable to be present. The Registrar will then request recommendations from the instructors.

Supplemental Examinations:

Supplemental examinations, for which special application must be made to the Registrar, are conducted in August for students who have been conditioned (40 to 49 per cent) in any course of the General Program. (See Failures).

Supplemental examinations for Summer School courses, governed by the same rules, are held in January.

Students whose grade is less than 40 per cent in any course may not write a supplemental examination in that subject.

A student is allowed two supplemental examinations in his first year and only one in each succeeding year.

A student may not write a supplemental to raise his grade in a course in which he has already received a passing grade, except by permission of the Academic Standing Committee.

No supplemental examination will be allowed in Honors courses.

No supplemental examination will be held within three months following the regular examination period.

Special Examinations:

A special examination is any examination other than the regular or supplemental examinations.

No special examination may be assigned except on the recommendation of the Head of the Department concerned, after consultation with the instructor involved.

Students may be advised to adopt the alternative of repeating the lectures and taking the next regular examination without fee.

Whenever possible special examinations will be held during the first full week in September.

No special examination will be set within three months of failure.

No General Program student may write special examinations on more than the equivalent of one full course in one academic year.

No Honors Program student may write a special examination in any academic year if he has failed in more than one Honors examination paper or has secured less than 35 per cent on one Honors examination paper.

A special examination may be written only at the college in which a student is registered.

Comprehensive Examinations:

Various departments of the Faculty of Arts and Science require comprehensive examinations for Honors students.

These examinations, partly oral and partly written, are given at the end of the senior year to cover the broad aspects of the student's Honors Program and are additional to the course examinations.

GRADES

General Programs:

In the General Programs the following grades are used: A, B, C, D, E, F. The minimum for Grade A is 75 per cent of the marks obtainable; for Grade B, 66 per cent; for Grade C, 60 per cent; for Grade D, the minimum passing grade, 50 per cent. A mark that falls in Grade E, 40 to 49 per cent, entitles the student to a supplemental, subject to the regulations governing supplementals. Grade F, less than 40 per cent, indicates a total failure and the necessity of repeating the course.

No student will be admitted to the degree of Bachelor of Arts in the General Program unless he has obtained an average of 60 per cent in the Major subject, with 60 per cent in each of six courses out of the eleven required in the Senior Group, in addition to 50 per cent in all other courses.

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

Honors Programs:

In Honors Programs the following grades are used: Class I—75 per cent or over; Class II—66 to 74 per cent; Class III—60 to 65 per cent; and Class IV—50 to 59 per cent.

A student in an Honors Program must obtain an average of at least 60 per cent in the courses of the Honors subjects of the second and third years, with an average of at least 60 per cent in other subjects, to be permitted to continue in Honors.

An average of at least 60 per cent in the Honors subjects of the fourth year, with no failure on any examination, is required for an Honors degree.

Term Work:

A student may be debarred from writing the final examination for failure to maintain satisfactory academic standing throughout the year.

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

Repeat Examinations:

If a student writes more than one examination in a course, the last mark he obtains shall be the only one considered.

Failures in the General Program

(i) A student must pass two-thirds of the approved registration of his first year at the spring examinations. If he fails to do so, he may, upon application to the Admissions Committee, be given permission to re-enter the first year.

(ii) If a student fails in his second or third year and wishes to repeat his year, he may, upon application to the Admissions Committee, be given permission to re-enter the University immediately, or be requested to stay out a year, or required to withdraw.

(iii) If a student is carrying a first year course into his second year, regardless of the timetable, he must take that course and not carry it into the third ytar.

(iv) Only one failed subject may be carried into the second or third year.

A student who is required to repeat his year's work may petition his Dean or Principal to be allowed to substitute a subject of equivalent weight, at the same year-level, if the timetable permits, for a subject in which he has obtained a minimum of 66 per cent.

A candidate in an Honors Program for the degree of Bachelor of Arts who has obtained 50 per cent in each course of his final year, but has failed to obtain the requisite average of honors (60 per cent), may, on the recommendation of the Academic Standing Committee, be awarded a General degree. The candidate may write a subsequent examination for an Honors degree.

A candidate in an Honors Program for the degree of Bachelor of Science who has obtained 50 per cent in each course of his final year, but has failed to obtain the requisite average for honors (60 per cent), may, on the recommendation of the Academic Standing Committee, be awarded a Bachelor of Science degree without honors. The candidate may write a subsequent examination for an Honors degree.

CONDITIONS

A student who is permitted by the Admissions Committee to enter a program with one condition must remove that condition by September 1 of the following year.

Students conditioned at the regular examinations should attempt to remove their conditions at the next supplemental examinations. If a condition is not removed the course must be repeated.

APPEALS AND PETITIONS

A copy of the Senate regulations governing appeals by students may be consulted in the Registrar's office.

A student who wishes to petition the Academic Standing Committee for special consideration on medical, compassionate or other grounds should submit his petition in writing to the secretary of the Committee (the Registrar).

TEACHERS' COURSES AND CERTIFICATES

Programs for Teachers:

The Faculty of Arts and Science through the Summer School and Extension Department offers general program courses leading to a General B.A. degree for students unable to attend the intramural winter sessions. These subjects are available in three ways: (1) at the Summer Session in London, (2) during the Winter Session in London and 10 other centres in Western Ontario and (3) by correspondence.

High School Assistants' Certificates:

TYPE B: The academic standing for admission to the course in the Ontario College of Education leading to a High School Assistant's Certificate, Type B, is a degree in Arts or in Science from a British University, based upon programs approved by the Minister of Education.

TYPE A: Subject to the conditions specified below, an Honors degree in Arts or in Science (66 per cent) is the academic standing required for admission to the courses leading to High School Assistant's Certificate, Type A, in Biology and Chemistry, English, English and French, English and German, English and, History, *English and Latin, French and German or Spanish,* French Language and Literature, Geography, History, Latin and French, Latin and Greek, Mathematics, Mathematics and Physics, Music, Physical Education, Physics and Chemistry.

For the University of Western Ontario, the courses specified above shall be the corresponding Honors Programs as defined in the current Calendar of the Faculty of Arts and Science, and shall extend over four years from Grade XIII standing in nine papers.

Candidates shall attend for at least the complete third and fourth academic years.

The Minister of Education shall have authority to deal with any case not already covered. The University shall submit to the Minister a recommendation on any case whose merits justify special consideration.

Graduates in General Programs who wish to obtain Type A standing should submit formal transcripts of their University records to the Ontario College of Education for evaluation.

PUBLIC SCHOOL INSPECTORS' CERTIFICATES

By agreement with the Minister of Education the work described below satisfies the academic requirements for a Public School Inspector's Certificate:

An Honors Degree in Arts or Science in accordance with the present agreement prescribed for Type A qualifications.

or

A General Program Degree in Arts and Science with a standing of 66 per cent on the work of the final year of the program; and including English in any three of the first, second third and fourth year courses of study.

For professional requirements, candidates should consult the Ontario Department of Education, Toronto 5, Ontario.

Programs

First year students will register in one of the following programs:

General Program 1: Mathematics and Natural Sciences

General Program 2: Humanities, Social Sciences, Mathematics, Journalism, and Physical, Health and Recreation Education.

General Program: Secretarial Science Options

General Program: Pre-Theological Options

General Program: Home Economics Options

Degree Programs in Music: (see the College of Music)

Degree Programs in Nursing

Pre-Business

Pre-Medicine

Course-Numbering System

Courses 1-9 are equivalent to corresponding subjects of Secondary School Grade XII (Ontario).

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

Courses 20-29 are First year General Courses.

Courses 30-39 are Second year General Courses.

Courses 40-49 are Third year General Courses.

Courses 200-299 are Second year Honors Courses.

Courses 300-399 are Third year Honors Courses.

Courses 400-499 are Fourth year Honors Courses.

A course-number followed by "a" is offered in the first term only; followed by "b" in the second term only; followed by "x" in an affiliated college only.

A half course is one which meets less than two hours a week throughout the academic year or less 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.

The General Programs

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 beginning of 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 the General Program, or the second year of one of the Honors Programs.

The General Program requires two more years for completion and leads to the B.A. degree. Honors Programs require three more years and lead to an Honors B.A. or an Honors B.Sc. degree, and permit specialization in one or two subjects.

GENERAL PROGRAM 1: FIRST YEAR SCIENCE

This program leads to Mathematics, the Natural Sciences and some of the Social Sciences.

Requirements for Admission:

Grade XIII standing in English, another language, Mathematics (Algebra, Geometry, Trigonometry and Statics), Physics and Chemistry, with an average of 60 per cent.

Courses:

Chemistry 20

English 20

Physics 20

Three of: Botany 20, Geology 20, Mathematics 24, Zoology 20.

GENERAL PROGRAM 2: FIRST YEARS ARTS

This program leads to the Humanities, Social Sciences, Mathematics, Journalism, and Physical and Health and Education.

Requirements for Admission:

Grade XIII standing in English, another language, Latin or Mathematics (two of Algebra, Geometry, Trigonometry and Statics), and three additional papers, with an average of 60 per cent.

Courses:

English 20

French 20 or another language at the 20 level

Mathematics 20 or 24, or a Natural Science at the 21-29 level, or another language at the 20 level.

Two of: Economics 20, History 20, Philosophy 20

One of: Business 20, Economics 20, Geography 20, History 20, Journalism 20, Mathematics 20 or 24, Music 20 or 20y, Philosophy 20, Politics 20, Psychology 20, Sociology 20, another language, another science.

THE GENERAL PROGRAMS: REGULATIONS, SECOND AND THIRD YEARS

1. The courses offered are grouped into four divisions:
   Division A—The Humanities
   Division B—The Social Sciences
   Division C—The Natural Sciences, Mathematics, and Astronomy
   Division D—Other Subjects

2. A student entering the second year of the General Program shall select a Major subject of concentration from either Division A, Division B, or Division C, and a Minor subject from a Division other than that of his Major subject.

3. Neither the Major nor the Minor subjects may be selected from Division D.

4. A Major subject shall consist of three or four Senior options in that subject.

5. Senior options are courses numbered from 30 to 499.

6. A Minor subject shall consist of two Senior options in that subject.

7. One or two Senior options of the Major subject shall be selected in the second year and two in the third year.

8. Prior to registration, a student shall consult with the Head of the Department of his Major subject who will advise him concerning his choice of options, and sometimes may permit him to register in an Honors Course, at the appropriate level.

9. A minimum of four courses, three of which must be Senior Courses, shall be selected from each of Division A, and Division B.

10. A minimum of two courses, one of which must be a laboratory Science course, shall be selected from Division C.

11. A maximum of two courses from Division D may be credited toward a degree.

12. Not more than one course from those numbered between 10 and 19 may be credited toward a degree.

13. *The following courses must be included in every program:*
   Economics 20
   One of: History 20, 35, 36
   One of: English 32, 36, 37, 38, 44, 45, 49
   One of: French 20, Latin 20, Greek 20, German 20, Spanish 20, Russian 20, Italian 20
   One laboratory course in a natural science
   One of: Philosophy 20, 30
   One of: Psychology 20, 21.
   If any of the Senior courses in the above list has been selected in the Major or the Minor, the requirements under this rule have been fulfilled for that subject.

14. No more than five courses may be taken in any one subject for credit toward a degree.

15. Eight of the eleven required courses of the two final years must be Senior options. A minimum of six of these Senior options must be taken at this University.

16. A minimum of 60 per cent must be obtained in each of six courses out of the eleven required in the second and third years, and an average of 60 per cent in the options of the major subject.

GENERAL PROGRAM 1

Prerequisite: First Year General Program 1.

Second Year

Six courses to be selected as follows:

French 20 or another language at the 20 level

Economics 20

One option from the Major subject

One option from the Minor subject

Another option from the Major subject or a senior option from any Division in which one is required under rules 9 and 10.

One option from:

English 32, 36, 37, 38, 44, 45, 49

History 35 or 36

Philosophy 30

Psychology 21

If one of these six subjects is selected as a Minor, a course in another of these subjects should be taken.

Third Year

Five courses to be selected as follows:

The courses required for graduation under rule 13 but not previously selected.

Two options from the Major subject

One option from the Minor subject

Another option in Division A or B if needed under rule 9.

GENERAL PROGRAM 2

Prerequisite: First Year General Program 2.

Second Year

Six courses to be selected as follows:

One option from the Major subject

One option from the Minor subject

Three options not previously selected from the following subjects, one course from each of which must be taken ultimately under rule 13.

English 32, 36, 37, 38, 44, 45, 49.

Economics 20

History 35 or 36

Philosophy 30, (if Philosophy 20 was not selected in first year.)

Psychology 21 (if Psychology 20 was not selected in first year)

A laboratory course in Natural Science or Mathematics 20

Another option from the Major subject, or a Senior option from any Division in which another is required.

Third Year

Five courses to be selected as follows:

Two options from the Major subject
One option from the Minor subject
One option from senior courses in any Division
One laboratory course in Natural Science; or if both courses from Division C have been completed, another Senior option must be selected. It may be from any division. (see Rule 11).

GENERAL PROGRAM 3

Prerequisitie: Completion of second year Pre-medicine with a 60% average and without conditions.

THIRD YEAR

Five or six courses to be selected as follows:

One language course at the 20 level
One senior course in History (if not taken before), otherwise in English
Two additional senior courses in Division A or B. (Students taking History must elect one course from Division A.)
One or two senior courses to meet the major requirements for the degree.

In addition to the major subjects outlined above (see paragraph 2, The General Programs Second and Third Years), there are two additional major subjects of concentration to choose from:

Biological Science
Zoology 200M
Botany 31 or 36
Zoology 45 or Botany 35

Physical Science
Physics 204M
Chemistry 203
Physics 46

THE DIVISIONS

DIVISION A (The Humanities)

At least four courses are to be selected, three of which must be senior courses

Junior Courses
(numbered 1-29)

Classics: Greek 1, 10, 20, 29
Latin 1, 10, 20

English 20

German 1, 10, 20, 22; 5, 15

Hebrew 1 - 10 (or 1 and 10), 20

Music 10, 20, 20y

Philosophy 20

Romance Languages:
French 10, 20, 22
Italian 1, 10, 20
Spanish 1, 10, 20
Russian 1, 10, 15, 20, 22

Senior Courses
(numbered 30-499)

Classics: Greek 30, 40
Latin 30, 34, 39, 40, 44

English 32, 34, 36, 37, 38, 44, 45, 49

German 30, 40, 45, etc.

Hebrew 30, 40

Music 30, 30y, 40

Philosophy 30, 31, 35, 36, 42, 43, 44, 47, 48, etc. and in affiliated colleges 30x-36x, 42x-47x

Romance Languages:
French 30, 31, 34, 38, 41, 45
Italian 30, 40
Spanish 30, 31, 40, 41, 45, 48
Russian 30, 37, 40, 45

DIVISION B (The Social Sciences)

A least four courses are to be selected, three of which must be senior courses.

Junior Courses
(numbered 1-29)

Economic and Political Science:
Economics 20, Politics 20, Sociology 20
Geography 20
History 20
Psychology 20, 21

Senior Courses
(numbered 30-499)

Economics 30, 31, 33, 34, 37, 355
Politics 31, 37, 42, 44, 348, 434, 451, 462a, 462b
Sociology 30, 38, 40, 450, 460, 478
Geography 30, 32, 36, 39, 40, 41, 43, 45, 46, 47
History 31, 33, 35, 36, 37, 44
Psychology 31, 32, 36, 39, 46, 48, 49

DIVISION C (The Natural Sciences, Mathematics, and Astronomy)

At least two courses are to be selected, one of which must be a laboratory science.

Junior Courses
(numbered 1-29)

Astronomy 29
Biological Science:
Botany 21 or Zoology 21
Botany 20
Chemistry 20
Geography 20
Geology 20 or 21
Mathematics 20 or 24
Physics 20
Physical Science:
Chemistry 21 or Physics 21
Zoology 20

Senior Courses
(numbered 30-499)

Botany 31, 33, 35, 36, 37, 42
Chemistry 32, 33, 44, 46
Mathematics 30, 32, 34, 35, 40
Physics 34, 46, other courses with permission
Zoology 30, 34, 37, 41, 43, 44, 45

DIVISION D (Other Subjects)

These subjects may not be used as Major or Minor subjects and not more than two courses may be counted toward a General Program degree.

Junior Courses
(numbered 1-29)

Business Administration 20
Home Economics 23, 24, 25, 26
Journalism 20
Military Studies
Physical Education 20
Religious Knowledge (in the affiliated colleges) 10x, 20x, 21x
Secretarial Science (not available for General Program 1 or 2 students; those who have transferred from the General Program with Secretarial Science options to General Programs 1 or 2 may count two of Secretarial Science 28, 29, 30, 36, 37, 38, 39)

Senior Courses
(numbered 30-499)

Business Administration 250
English 39 (speech), 46 (Dramatics)
Journalism
Physical Education 30, 251, 253, 258, 352, 366
Religious Knowledge (in the affiliated colleges) 30x, 31x, 32x, 37x, 40x, 41x, 42x, 44x, 47x

GENERAL PROGRAM: SECRETARIAL SCIENCE OPTIONS

Requirements for Admission: *Grade XIII standing (with an average of 60%) in English, another language (French preferred), Latin or Mathematics (two papers), and three papers from Biology, Geography, History, Music, Physics, Chemistry, another language, another mathematics.*

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.

Enrolment is limited and students are admitted on the quality of their secondary school certificates.

Students must obtain credit for all of the first year before beginning any second year work.

First Year

Business 20
English 20
A survey course in Science
One of: French 20, German 10 or 20, Spanish 20
Secretarial Science 28, 29

Second Year

Economics 20
English 32
Philosophy 30 or Politics 20 or Psychology 21
One of: French 31, German 20 or 30, Spanish 31
Secretarial Science 30, 37, 38, 39

Third Year

One of: English 36, 38, 44, 45, 49
History 31
Secretarial Science 47, 48, 49
One of: French 43, German 30 or 40, Spanish 30 or 40 or 41

GENERAL PROGRAM: PRE-THEOLOGICAL OPTIONS

Requirements for Admission: Grade XIII standing in English, another language, Latin or Mathematics (two papers), and three other papers. An average of 60% is required.

This program is open to students of any denomination and is offered in the Colleges of the University and Huron College.

It leads to the degree of Bachelor of Arts and is the normal requirement for admission to a three-year course in Theology. If, however, a prospective Theological student wishes to take another program leading to a General or an Honors degree, he may do so.

Course-numbers followed by "x" indicate a subject approved by the University and taught by Huron College only.

First Year

English 20
Language other than English at the 20 level
History 20
Mathematics 20 or a Natural Science at the 21-29 level
Philosophy 20
Psychology 20

Second Year

Economics 20
One of: English 32, 36, 38, 44, 45, 49
Philosophy 30
Religious Knowledge 30x
Two of: Hebrew 1-10 (two-course equivalent)
History 31, 36, 44
Psychology 36, 46, 48, 49

Third Year

One of: English 32, 36, 38, 44, 45, 49
Religious Knowledge 40x
One of: Philosophy 31, 36, 42, 47
Two of: Hebrew 1-10 (two-course equivalent)
History 31, 36, 44
Psychology 36, 46, 48, 49
another Senior English or Philosophy

GENERAL PROGRAM: HOME ECONOMICS OPTIONS

Requirements for Admission: Grade XIII standing in English, another language, Latin or Mathematics (any two) Botany, Zoology, Chemistry, with an average of 60% and with a grade of 60% in each Science course.

This program, which leads to the B.A. degree in Home Economics, is offered jointly by University College and Ursuline College. University College students in the course will take all their classes at University College except in Home Economics; Ursuline College students will take all their science courses in University College. Home Economics and Chemistry courses must be taken in the order and year designated.

On graduation, students may take dietetic intern training in institutions approved by the Canadian Dietetic Association for professional standing. Students who have obtained 60% or more in the work of the final year may, if they enter the High School Assistants' Course of the Ontario College of Education, elect the supplementary course offered for Intermediate Home Economics certificates.

First Year

Botany 36
Chemistry 22
English 20
French 20 or German or Spanish 20
Home Economics 23x, 25x
Psychology 20
Religious Knowledge 20x (for Ursuline College students only)
Zoology 24

Second Year

Chemistry 33
Economics 20
English 32 or 34 or 36 or 38
Home Economics 30x, 31x, 32x, 33x

Third Year

Chemistry 46
Home Economics 40x, 41x, 42x, 45bx, 46x, 47x, 48x

GENERAL PROGRAM: MUSIC OPTIONS

This program is available at the College of Music, one of the Arts Colleges of the University, located in the A. E. Silverwood Building, Waterloo Street North. Students wishing to follow this program must consult the College of Music.

Requirements for Admisson:

(1) Satisfactory results in audition test.

(2) Grade XIII (or equivalent standing) in English, another language, Music (Grade VIII practical and Grade II theory), and at least three other papers, with an average of 60%.

The General Music Program leads to a Bachelor of Arts degree with Music Options. This program combines *performance, paedagogy, theory, ear training* and music history, and prepares graduates for careers in performing, private or class teaching, and related fields. A student may major in Piano, Voice, Organ, Composition, Violin or a number of orchestral instruments. Before graduating *each student must* have passed the Associate examination in his major subject.

One subject from the Arts options is to be continued consistently throughout the program. A student who enters the University with Grade XIII German will do German 20, 30, and 40, as his prescribed or optional language.

This three year program meets the requirements for admission to the Type "B" High School Assistants' Course (Vocal) given by the Ontario College of Education. The four year Honors Music Education course which leads to a Type "A" certificate is outlined elsewhere in this calendar.

First Year

Music 21c for piano majors
Music 21d and 21cd for voice majors
Music 21e and 21ce for organ majors
Music 29 and 21c or 21e for composition majors
Music 22, 23 for piano and organ majors
Music 24, 25, 26, 27 and 28
English 20
French 20, or German 1 or 10 or 20
Italian 1 for voice majors

One of:
History 20
Mathematics 20
Philosophy 20
Psychology 20
A second language

Second Year

Music 31c for piano majors
Music 31d and 31cd for voice majors
Music 31e and 31ce for organ majors
Music 39 and 31c or 31e for composition majors
Music 33 for piano and organ majors
Music 34, 35, 36, 37, 38
English 32
French 30 or 31, or German 10 or 20 or 30
Italian 10 for voice majors

One of:
History 36
A senior mathematics course
Philosophy 30
Psychology 21 or 36
Another course in French or German or another language

Third Year

Music 41c for piano majors
Music 41d and 41cd for voice majors
Music 41e and 41ce for organ majors
Music 49 and 41c or 41e for composition majors
Music 44, 45, 46, 47, 48
English 38
French 34, or German 20 or 30 or 40

For voice majors one of, and for all others two of:
History 31, 44
Italian 20
Another course in French or German or another language
Philosophy 35, 48
Psychology 21, 49

DEGREE PROGRAMS IN NURSING

Leading to the degree of Bachelor of Science in Nursing (B.Sc.N.) Candidates for degrees must attend the University of Western Ontario for one full academic year.

PROGRAM A

Requirements for Admission: Grade XIII (or equivalent) standing in English, another language, Latin or Mathematics (any two of Algebra, Geometry, Trigonometry and Statics), Botany, Chemistry and Zoology, with an average of 60%, and with 60% in each Science Course.

Part I: One academic year in the Faculty of Arts and Science:

Botany 36
Chemistry 22
Sociology 20
English 20
A second language at the 20 level
Psychology 20
Zoology 24

Part II: Completion of diploma requirements in a hospital school of nursing where there is a course that is in all its details approved by a Committee of which the Dean of the School of Nursing is convener.

Part III: One academic year in the School of Nursing of this University The student may choose the Public Health Nursing or the Nursing Education or the Nursing Service Administration option. She must inform the Dean of the School of Nursing by June 30th of the option she has chosen for her final year's work.

No conditions may be carried from Part I to Part II, or from Part II to Part III of this program, without the written permission of both the Dean of the School of Nursing and the University Registrar.

PROGRAM B

For Registered Nurses only.

Requirements for Admission: Grade XIII (or equivalent) standing in English, one language (preferably French), and any five additional papers.

Proof of graduation from a hospital school of nursing in which the program of education and clinical experience is approved by a committee of which the Dean of the School of Nursing is convener.

Proof of registration as a graduate nurse in good standing.

Part I: Completion of one academic year in one of the specialized professional programs (Public Health Nursing or Nursing Education or Nursing Service Administration) in this University's School of Nursing. Applicants who hold certificates or diplomas of specialized professional study at another University are required to complete one term (or semester) or its equivalent of study in this University's School of Nursing in addition to the Arts and Science subjects of the degree program.

Part II: Completion of the following Arts program:

English 20
A second language at the 20 level
Physical Scence 21 (Chemistry section) or Zoology 21
Three options from: English 36 or 38 (if English 20 has been passed), Geography 20, History 31, 36, Journalism 20, 260, 355, Philosophy 42, Politics 20, 42 (if 20 has been completed), Psychology 21, 49, 49 Sociology 20 (or Sociology 30, 38, 40 if Sociology 20 has been passed)

PRE-BUSINESS

Requirements for Admission: Grade XIII standing in English, Mathematics (two papers), one other language, and three other papers, with an average of 60%.

First Year

Business 20
Economics 20
English 20
Foreign Language 20
Mathematics 20
Psychology 20

Second Year

Business 250
A Senior English
One of: History 20, History 31, History 33, History 36, Philosophy 30, Politics 20
One of: Botany 21, Chemistry 21, Geology 21, Physics 21, Zoology 21
Two courses in Arts and Sciences leading to filling the concentration requirement, the option requirement, or both. See Announcement of the School of Business Administration.

Admission to third year is granted by the School of Business Administration on the courses of the first two years with an overall average of 60%.

PRE-MEDICINE

Requirements for Admission: Grade XIII standing in English and Mathematics (Algebra and Geometry), French or German or Latin, Chemistry and Physics, Botany or Zoology or Trigonometry and Statics, with an average of 60%.

First Year

Chemistry 20
English 20
Physics 20
Zoology 20
Two options from:
Botany 20
Economics 20
Geography 20
History 36
Mathematics 20
Philosophy 20
Politics 20
Sociology 20

Second Year

An average of 60% is required for admission to the second year.

Chemistry 203
English 33M
[redacted]
Physics 204M
Psychology 21
Zoology 200M

One option from:
Botany 31 or 36
Economics 30 or 33 (to follow 20)
Geography 30 (to follow 20)
History 31 (to follow 36)
Mathematics 35
Philosophy 30 (or another senior Philosophy option)
Sociology 30 (to follow 20)
Politics 42 (to follow 20)

On the completion of this program, a student accepted by the Admission Committee of the Faculty of Medicine must be prepared to register with the College of Physicians and Surgeons. Consult the Announcement of the Faculty of Medicine for the four years of Medicine leading to the M.D. degree.

A student who is not accepted for admission to the Faculty of Medicine may proceed, if his record is satisfactory, to General Program 3. On satistfactory completion of General Program 3, he may again apply for admission to the Faculty of Medicine.

Honors Program

The first year of an Honors Program is First Year General Program 1 or 2.

The length of an Honors Program is four years past Grade XIII or equivalent standing.

The Honors Programs in Biology, Chemistry, Chemistry and Physics, Geology, Geophysics, and Physics and Mathematics lead to the degree of Bachelor of Science (B.Sc.). All other Honors Programs lead to an Honors Bachelor of Arts degree (B.A.).

The Department of Education accepts a degree in an Honors Program as the academic qualification for a High School Assistant's Certificate, Type B, for teaching in the elementary and secondary schools of Ontario. Some Honors Programs lead to Type A Certificates for High School Specialists, and these are indicated at the top of the respective programs.

A student expecting to enter an Honors Program should consult that program before selecting his options in Program 1 or 2.

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

ASTRONOMY

Requirements for Admission: First Year General Program 1, with an average of 60% in the Science and Mathematics subjects, at least 60% in Mathematics 24, and at least 60% in Physics 20.

Students who plan to continue into graduate studies are advised to begin a second foreign language in the third year, if they have not done so earlier.

This Program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Mathematics and Physics, provided that Algebra, Geometry, Trigonometry and Statics have been completed in Grade XIII.

Second Year

Astronomy 229
Mathematics 250, 256
Physics 250, 256

Third Year

Mathematics 378
Astronomy 359
Physics 350
Two additional Mathematics or Physics courses at the 300 or 400 level.
One course from Division A or B.

Fourth Year

Astronomy 459
Two of: Physics 454, 455, 457
Two additional courses at the 300 or 400 level, from Mathematics, Physics, Geophysics, or Chemistry.
One course from Division A or B.

BIOLOGY

Requirements for Admission: First Year General Program 1, with an average of at least 60% in the Science subjects, and not less than 60% in Botany 20 and 60% in Zoology 20.

This program is accepted by the Department of Education of Ontario as Academic qualification for the High School Assistant's Certificate, Type A, Chemistry and Biology.

Second Year

Botany 250
Chemistry 203, 204
Physics 204
Botany or Zoology 255
Zoology 270

One of: Economics 20
English 32
Philosophy 20
Politics 20
Psychology 21
Sociology 20

All Third and Fourth Year students are required to participate in the Biological Field Studies Course (463) which will be conducted jointly by the Departments of Botany and Zoology.

All Third and Fourth year students must consult the head of the Department of Botany or the head of the Department of Zoology before registering in any of the courses prescribed for third and fourth years.

Third Year

For admission to the Third Year an average of 60% is required in the Biology of the Second Year, and an average of 60% in all other courses.

(a) Botany Option

Botany 352, 357, 361, 366
Chemistry 406

Zoology 370
French 20 or German 5 or Russian 1

(b) Zoology Option

Zoology 352, 354, 370, 454
Chemistry 406
French 20 or German 5 or Russian 1

One of: Zoology 453, 456, 460, 465, 470, 471
Botany 250, 352, 357, 361, 366, 453, 454
Geology 20, 363, 367
Mathematics 35

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Botany or Zoology, respectively, of the Third Year and an average of 60% in all other courses.

(a) Botany Option

Either

Five of: Botany 452, 453, 454, 458, 460, 461
French 31 or German 15 or Russian 15

Or

Four of the above Botany Courses

One of: Geology 20, 363, 367
Mathematics 35
Zoology 352, 437, 453, 456, 460, 465, 470, 471
Chemistry 402

French 31 or German 15 or Russian 15

(b) Zoology Option

Either

Zoology 437
Five of: Zoology 453, 456, 460, 465, 470, 471, 480
French 31 or German 15 or Russian 15

Or

Zoology 437
Four of the above Zoology courses
One of: Botany 250, 352, 357, 361, 366, 453, 454
Geology 20, 363, 367
Mathematics 35
Chemistry 402
French 31 or German 15 or Russian 15

BUSINESS ADMINISTRATION AND SECRETARIAL SCIENCE

Requirements for Admission: First Year General Program 2, with at least 60% in Economics 20 and Business 20.

Second Year

Business 250 (Accounting)
Geography 39
Economics 237, 333
Secretarial Science 28, 29, 36

Third Year

For admission to the Third Year an average of 60% in Second Year Business and Secretarial Science is required, and an average of 60% in all other courses.

Business 351 (Marketing) and 357 (Control)
English 32
Secretarial Science 37, 38, 39

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Business and Secretarial Science of the Third Year, and an average of 60% in all other courses.

Business 456 (Commercial Law and Documents of Commerce)
One of Business:
460b (Auditing)
461 (Retailing)
471 (Advertising)
Secretarial Science 47
Two of:
Economics 36
English 36, 37, 38, 44, 45, 49
History 36, 31, 44
Philosophy 30

CHEMISTRY

Requirements for Admission: The following courses of First Year General Program I: Chemistry 20, English 20, Mathematics 24, Physics 20, and two of Botany 20, Geology 20, Zoology 20, with an average of at least 60% in Science and Mathematics. Students may choose either the Honors Chemistry or the Honors Chemistry with Physics options.

Both the Honors Chemistry option and the Honors Chemistry with Physics option are accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Physics and Chemistry.

Second Year

Chemistry 253, 254, 261

Mathematics 277

Physics 250, 256

Third Year

For admission to the third year an average of 60% is required in the Chemistry of the Second Year and an average of 60% in all other courses.

Chemistry 351, 353, 354, 374

One of: French 20, German 5, Russian 1, Spanish 1

Honors Chemistry option

One of: Mathematics 377, Physics 366

One of: Economics 20, English 32, Philosophy 34, Politics 20, Sociology 20

Honors Chemistry with Physics option

Mathematics 377

Physics 350

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Chemistry of the Third Year and an average of 60% in all other courses.

Chemistry 409, 452, 454, 459, 474

One of: French 31, German 15, Russian 15, Spanish 45

Honors Chemistry option

Chemistry 451, 453, 456

Honors Chemistry with Physics option

Three of: Chemistry 451, 453, Mathematics 477, Physics 366, 454, 455

One of: Economics 20, English 32, Philosophy 34, Politics 20, Sociology 20

CLASSICS

Requirements for admission: First Year, General Program 2, including a modern foreign language at the 20 level, with 60% in Latin 20 and in Greek 20. This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Classics.

Second Year

English 32
Greek 230, 250, 251
History 357
Latin 230, 250, 251

Third Year

For admission to the Third Year an average of 60% is required in the Greek and Latin of the Third Year, with 60% in English.

English 45
Greek 340, 350, 351, 352
Latin 340, 350, 351, 352

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Greek and Latin of the Third Year, with 60% in English.

Greek 450, 451, 452, 453, 457
Latin 450, 451, 452, 453, 457

COMPARATIVE LITERATURE

Requirements for Admission: First Year, General Program 2, with History 20, Philosophy 20 and Russian 20. Students beginning Russian at the University, who register for this program, will take Russian 20 in the second year.

Second Year

English 253, 270
French 270
German 290
Russian 280
History 236

Third Year

English 356
French 380
German 390
Russian 390
Politics 348 or History 337

Fourth Year

English 480
French 490
German 480
Russian 420
History 460

ECONOMICS

Requirements for Admission: First Year General Program 1 or 2 with an average of 60%, and 60% in Economics 20 if taken. If Economics 20 is not taken in the First Year, it must be elected in the second year and a mark of at least 60% obtained. If Economics 20 is taken in the second year, Economics 230 must be deferred until the third year. It is recommended that an option in Mathematics be taken as early as possible and that at least one course in Politics and one course in Sociology be taken.

Second Year

Economics 230, 237
Business 250 or Mathematics 20 or 24
Three options other than Economics

Third Year

For admission to the Third Year an average of 60% is required in the Economics courses of the Second Year, and an average of 60% in all other courses.

Economics 333, 350, 355

One of: Economics 334, 336, 351, 363, *447, 455*

Two options other than Economics

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Economics courses of the Third Year and an average of 60% in all other courses.

Economics 440, 460, 480

Two of: Economics 334, 336, 351a and 351b, 363, 447, 455 (Not all of these are offered in any one year.)

ENGLISH AND FRENCH

Requirements for Admission: First Year, General Program 2, with 60% in English 20 and in French 20.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English and French

Second Year

English 254, 270, 280
French 270, 271
Greek 29

One of: German 290, Latin 230 and 250, Spanish 231 and 230 or 340

Students who begin Spanish in the University will take Spanish 20 in the second year and defer Greek 29 and Spanish 231 until the third year.

Third Year

For admission to the Third Year an average of 60% is required in the English and French of the Second Year, and an average of 60% in all other courses.

English 356, 360, 370, 373
French 380, 381

One of: History 35, 36, Philosophy 31, 35, Psychology 21, 49

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and French of the Third Year, and an average of 60% in all other courses.

English 459, 480, and 436 or 438

French 450, 490, 491, 499

ENGLISH AND GERMAN

Requirements for Admission: First Year, General Program 2, with at least 60% in English 20 and in German 20. History 20 must be chosen as an option in the First Year.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English and German.

Second Year

English 254, 270, 280
German 290, 291
History 36

One of: French 270, Greek 20, Latin 230, 250, Politics 31, 37, Russian 10, Spanish 20, 230

Third Year

For admission to the Third Year an average of 60% is required in the English and German of the Second Year and an average of 60% in all other courses.

English 356, 360, 370, 373
German 333, 390, 391

One of: Economics 20, French 380, Latin 340, 350 and 352, Greek 30, Philosophy 30, Russian 20, Spanish 230, 340

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and German of the Third Year, and an average of 60% in all other courses.

English 459, 480, and 436 or 438

German 420, 480, 481

ENGLISH AND HISTORY

Requirements for Admission: First Year, General Program 2, with 60% in English 20 and in History 20.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English and History, provided that the student takes English 373 and two courses in Geography. Geography 20 should be taken in first year and another Geography course in second year. English 373 should be taken in third year.

Second Year

English 254, 280
History 236
History 231 or 244

One foreign language option
One of: Philosophy 30, a second language, Politics 20, Economics 20, Sociology 20, a senior social science course

Third Year

For admission to the Third Year an average of 60% is required in the English and History of the Second Year, and an average of 60% in all other courses.

English 32, 356, 370
History 335
One of: History 333, 337, 339, 357

A foreign language option
Another option

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and History of the Third Year, and an average of 60% in all other courses. Five courses constitute a normal load in Fourth Year.

English 480
One or Two of: English 436, 438, 459, 463

Two or Three of: History 420, 431, 444, 452, 456, 460

ENGLISH AND LATIN

Requirements for Admission: First Year, General Program 2, with 60% in English 20 and 60% in Latin 20.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English and Latin.

Second Year

English 254, 270, 280
Greek 29
Latin 257

Latin 230, 250, 251
One of: French 270, Greek 20, 230 and 250, German 20, 290

Third Year

For admission to the Third Year an average of 60% is required in the English and Latin of the Second Year, and an average of 60% in all other courses.

English 356, 360, 370, 373
History 35

Latin 340, 350, 351, 352

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and Latin of the Third Year, and 60% in History.

English 459, 480, and 436 or 438

Latin 450, 451, 452, 453

ENGLISH AND PHILOSOPHY

Requirements for Admission: First Year General Program 2 (including History 20), with 60% in English 20 and 60% in French 20 or German 20 or Latin 20.

Sequence B is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English, provided that the student takes three courses in English in the final year. For this certificate, French is the language preferred by the Department of Education.

Sequence A

Second Year

English 254, 270
Philosophy 230, 231

Two options

Third Year

For admission to the Third Year an average of 60% is required in the English and Philosophy of the Second Year, and an average of 60% in all other courses.

English 356, 360, 370
Philosophy 336, 347

Two options

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and Philosophy of the Third Year, and an average of 60% in all other courses.

English 280

Philosophy 448

And three courses (not more than two in one subject) chosen from:
English 459, 480, Philosophy 335, 443, 444, 456, 457, 462, 466

Sequence B

Second Year

English 254, 270, 280
Philosophy 230, 231

One of: French 270 and 271, German 290 and 291, Latin 230 and 251

Third Year

For admission to the Third Year an average of 60% is required in the English and Philosophy of the Second Year, and an average of 60% in all other courses.

English 356, 360, 370, 373

One of: French 380, German 390, Latin 340 and 250

Philosophy 347, 335

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English and Philosophy of the Third Year, and an average of 60% in all other courses.

English 459, 480

One of: English 436, 438
Philosophy 457

Philosophy 336, 448

ENGLISH LANGUAGE AND LITERATURE

Requirements for Admission: First year, General Program 2, with 60% in English 20 and an average of 60% in the subjects taken. Students entering Sequence A must have an average of 60% in History 20 and a foreign language. Students entering Sequence B must have an average of 60% in the two languages taken. Latin 20 and Philosophy 20 are strongly advised as First Year options.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, English.

Second Year

English 254, 270, 280

History 35

One of: Greek 29, English 441, English 45a

Sequence A:

One of: French 30, German 30, Latin 30, Greek 30.

One option: History 31, History 357, a Philosophy course, a foreign language course.

Sequence B:

Two of: French 270, German 290, Latin 230, Greek 230.

Third Year

For admission to the Third Year an average of 60% is required in the English of the Second Year, and an average of 60% in all other courses.

English 356, 360, 370, 373, 436

Sequence A:

History 36

One option: History 31, 357, a Philosophy course, a foreign language course.

Sequence B:

One of: French 380, German 390, Latin 340, Greek 352

One of: History 31, History 35, Philosophy 30, French 38, an Honors course in a second foreign language.

Fourth Year

For admission to the Fourth Year an average of 60% is required in the English of the third year, and an average of 60% in all other courses.

English 438, 459, 463, 480.

Sequence A:

History 460.

Sequence B:

One of: French 490, German 480, Latin 452, Greek 452.

FRENCH LANGUAGE AND LITERATURE

Requirements for Admission: First Year, General Program 2, with 60% in French 20 and English 20, a Natural Science 21 or Latin 20, History 20, Philosophy 20 and one of Politics 20, Psychology 20, Sociology 20 or Economics 20.

Candidates for the High School Assistant's Certificate, Type A, French Language and Literature, are required to attend a French-speaking university for one year. This year may be substituted for the Third Year of this program if comparable courses are available; otherwise a fifth year will be needed to complete the requirements laid down by the Department of Education of Ontario.

Second Year

French 22, 270, 271
History 36
English 280 or 356
One of: Philosophy 31, 35, 230, Psychology 21, Politics 20, Sociology 20, a Natural Science 21.

Third Year

French 38, 380, 381
English 480
Two of: Philosophy 47, Politics 434, Psychology 49, Sociology 30

Fourth Year

French 450, 490, 491, 499
One of: English 270, 360, 459
One of: Philosophy 48, History 460, Politics 37, Economics 447

FRENCH AND LATIN

Requirements for Admission: First Year, General Program 2, with at least 60% in French 20 and 60% in Latin 20.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, French and Latin. Three years, or the equivalent, of Greek or German must be taken.

Second Year

One of: English 32, 34, 44
French 270, 271
German 20 or Greek 20
Latin 230, 250, 251, 257

Third Year

For admission to the Third Year an average of 60% is required in the French and Latin of the Second Year, and an average of 60% in all other courses.

French 380, 381
German 30 or Greek 30
Greek 29
One of: English 49, History 35, 36, Philosophy 31, 35, Psychology 21, 49
Latin 340, 350, 351, 352

Fourth Year

For admission to the Fourth Year an average of 60% is required in the French and Latin of the Third Year, and an average of 60% in all other courses.

French 450, 490, 491, 499
Latin 450, 451, 452, 453

GEOGRAPHY

Requirements for Admission: First Year, General Program 1 or 2, with an average of at least 60% in the subjects taken.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Geography, provided that the following options are selected: Astronomy 29, History 20, 36 and two of History 31, 33, 35, 44.

Second Year

Geography 20, 239
Mathematics 35 or Astronomy 29
One course from Economics, History, Mathematics, Politics, Sociology

Sequence A: (Follows General Program 1)
Economics 20
German 5 or Russian 1 or Spanish 1
Psychology 21

Sequence B: (Follows General Program 2)
One Course from Division C not counted elsewhere in the program
Philosophy 30 or one additional year's work in a modern foreign language
Geology 20 (unless Geology 20 or 21 previously taken)

Anyone who has taken Geography 20 (with 66%) may take Geography 330.

Third Year

Geography 330
332
336
one of 441 or 443

Two senior options from: Economics, English, Geography, History, Mathematics, Politics, Sociology or one additional year's work in a modern foreign language or the beginning work in a second foreign language.

Anyone who has taken Geography 330 may take Geology 367.

Students who intend to continue into Graduate Studies are advised to begin work in a second foreign language in the Third Year, if they have not done so earlier.

Fourth Year

Geography 445, 441 or 443, 450
Any two of: 440, 446 (one section), 447

Geology 367
One of: German 45, French 45, Spanish 45, Russian 45

Anyone who has taken Geology 367 will take an additional Geography option or the second year of a modern foreign language.

GEOLOGY

Requirements for Admission: First Year, General Program 1, with an average of 60% in the Science subjects and not less than 60% in Geology 20. The student is strongly advised to have credit in Mathematics 24.

Immediately following the final examinations, the department will conduct a field camp of one week's duration in which second and third year are required to participate. The cost of this will not exceed $50.00 per student.

Second Year

Chemistry 200
Engineering Science 256
Geology 200, 251, 263
German 5 or Russian 1 or French 20

Physics 204
One of: Botany 20, Mathematics 277, Zoology 370, Physics 251

Third Year

For admission to the Third Year an average of 60% is required in the Geology of the Second Year, and an average of 60% in all other courses.

One course from the Humanities or Social Science Divisions

Geology 300, 351, 354, 355, 363, 365, 367
German 15 or Russian 10 or French 31

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Geology of the Third Year, and an average of 60% in all other courses.

Geology 458, 460
Three of: Geology 452, 454, 462, 463, 470, Geophysics 465

One course from the Humanities or Social Science Divisons

GEOPHYSICS

Requirements for Admission: First Year, General Program 1, including Geology 20 and Mathematics 24, with 60% in Mathematics, 60% in Physics, and an average of 60% in all the Mathematics and Science subjects.

Second Year

Geology 261
German 5
Economics 20

Mathematics 277
Physics 250, 251, 256

Third Year

For admission to the Third Year an average of 60% is required in the Honors Courses of the Second Year, and an average of 60% in all other courses.

Geology 351
Applied Mathematics 377

German 15
Physics 350, 353, 356, 359

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Honors Courses of the Third Year and an average of 60% in all other courses.

Geology 355, 452, 462
Geophysics 465

One Humanities or Social Science option
Physics 455, 457, 458

GERMAN LANGUAGE AND LITERATURE

Requirements for Admission: First Year General Program 2, with 60% in German 20 and in English 20, a Natural Science 21 or Latin 20, Sociology 20, or Economics 20.

Second Year

German 290, 291
History 236

English 270 or 254
Two options.

Third Year

For Admission to the Third Year, an average of 60% is required in the German courses of the Second Year, and an average of 60% in all other courses.

German 333, 390, 391
English 356 or 360

Two options

Fourth Year

For Admission to the Fourth Year, an average of 60% is required in the German courses of the Third Year, and an average of 60% in all other courses.

German 420, 444, 480, 481
One of English 356, 373, 459, 480

One option

HISTORY

Requirements for Admission: First Year, General Program 2, with 60% in History 20 and an average of 60% in English, one other language and either Economics or a second language.

This program is accepted by the Department of Education of Ontario as the academic qualification for the High School Assistant's Certificate, Type A, History, if the following options are taken: Economics 20, Geography 20, Geography 445.

Second Year

One of: Philosophy 20, Economics 20, Geography 20, Politics 20, English 32
History 231, 236, 244

One of: French 30, 34, German 30 Greek 30, Latin 30, Spanish 30, 40, Russian 1, 10
One option

Third Year

One of: Geography 336, Politics 237, Economics 237, 333, Philosophy 347
History 335
Two of: History 333, 337, 339, 357

One of: English 32, 36, 38, 44, 45, 49, or a literature course in another language.

One option

Fourth Year

Three of: History 400, 420, 431, 444, 452, 456, 460

Two of: Philosophy 457, Politics 234, 331, 434, Economics 237, 333, Geography 445, literature course in English, literature course in another language

HISTORY AND PHILOSOPHY

Requirements for Admission: First Year, General Program 2, with an average of 60% and preferably 60% in History 20 and Philosophy 20.

Second Year

History 231, 236
One course in English

One option (History 20 if not taken previously)
Philosophy 230, 231

Third Year

For admission to the Third Year an average of 60% is required in the History and Philosophy of the Second Year and an average of 60% in all other courses.

History 335, 357
Two options

Philosophy 336, 347

Fourth Year

For admission to the Fourth Year an average of 60% is required in the History and Philosophy of the Third Year and an average of 60% in all other courses.

Philosophy 448 (Contemporary)

Four of: (either Three History and one Philosophy or Two History and two Philosophy)

History 333, 337, 420, 431 452, 456, 460, Philosophy 335, 443, 444, 456, 457, 462, 466

HISTORY AND GERMAN

Requirements for admission: First Year General Program 2, with 60% in History 20 and in German 20.

Second Year

History 231, 236 — Two options

German 290, 291

Third Year

For admission to the Third Year an average of 60% is required in the History and German of the Second year, and an average of 60% in all other courses.

History 335, 357 — Two options

German 333, 390, 391

Fourth Year

For admission to the Fourth Year an average of 60% is required in the History and German of the Third year, and an average of 60% in all other courses.

History 456, 460 — One option

German 420, 480, 481

JOURNALISM

Requirements for Admission: First Year, General Program 2, with Journalism 20 (60%).

Transfer students from other colleges or programs must include Journalism 20 in the second year of the Honors Journalism program if it has not been completed previously.

Second Year

Journalism 250, 260, 270

Politics 20

English 254

One of: Economics 20 (if not completed previously), Psychology 21, Sociology 20.

One option

Third Year

For admission to the Third Year, an average of 60% is required in the Honors courses of Second Year and an average of 60% in all other courses.

Journalism 351, 355, 365, 375

History 31

Politics 462

One of: English 32, 36, 37, 38, 44, 45, 49

One option

Fourth Year

For admission to the Fourth Year, an average of 60% is required in the Honors course of the Third Year and an average of 60% in all other courses.

History 44 or Politics 44
Journalism 451, 455
An Honors *History* or Honors *Politics* course
One of: English 254, 356, 436, 438, 459
One option

DIPLOMA PROGRAM IN JOURNALISM

Requirements for Admission: Graduation from a recognized college, with a degree in some field other than Journalism.

Candidates for the Diploma in Journalism will take the prescribed courses and do special assignments in reporting, writing and editing.

An average of 60% in this one-year program is required for the Diploma.

Journalism 260, 351, 355, 365, 375, 400, 455.

LATIN WITH GREEK

Requirements for admission: First Year, General Program 2, including a modern foreign language at the 20 level, with 60% in Latin 20 and in Greek. This program, available only to candidates not having Grade XIII standing in Greek, is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Latin and Greek.

Second Year

English 32
Greek 20, 257
Latin 230, 250, 251, 257

Third Year

For admission to the Third Year, an average of 60% is required in the Greek and Latin of the Second Year, with 60% in English.

English 45
Greek 230, 250, 251
Latin 340, 350, 351, 352

Fourth Year

For admission to the Fourth Year, an average of 60% is required in the Greek and Latin of the Third Year, with 60% in English.

Greek 340, 350, 351, 352
Greek and Latin 457
Latin 450, 451, 452, 453

MATHEMATICS

Requirements For Admission: First year, General Program 1 or 2 with a minimum average of 60% and at least 60% in Mathematics 24. A minimum of 60% in Physics 20 is required for admission to the Physics Option of Applied Mathematics.

Second Year

Mathematics 250, 256
Three options, at least one of which must be from Division A or B

Third and Fourth Years

In the Third and Fourth Years, a student may select one of four Programs. Each Program fulfils the academic requirements for the Ontario High School Assistant's Certificate, Type A, Mathematics. Programs 1 and 4 are accepted as academic qualifications for the Type A Certificate, Mathematics and Physics, if the following courses have been completed: (i) Grade XIII Algebra, Geometry, Trigonometry and Statics; (ii) Physics 250, 256; 350 or 356; 456; (iii) at least one university course in Chemistry.

Students who plan to continue into graduate studies are advised to commence a second foreign language in their Second Year.

MATHEMATICS (PROGRAM 1)

Third Year

Mathematics 350, 356

One of: Mathematics 351, Physics 350, 356

One additional Mathematics course at the 300 or 400 level

One senior course from Division A or B

Fourth Year

Mathematics 456

One of: Mathematics 450, 452, 470, Physics 456

Three additional Mathematics courses at the 300 or 400 level

ACTUARIAL MATHEMATICS (PROGRAM 2)

Program 2 will prepare students to write the Preliminary Actuarial Examinations, prepared by the Educational Testing Service, and also to write Parts 4A and 4B of the Actuarial Examinations. In 1963 these examnations will be held in May and November. They may be written in London. Applications to write the examinations must be received by the Society of Actuaries not later than April 1 and October 1 respectively.

Third Year

Mathematics 353, 355, 356

One additional mathematics course at the 300 or 400 level

One senior option from Division A or B

Fourth Year

Mathematics 463

Two of Mathematics 450, 452, 455, 456, 460

Two additional mathematics courses at the 300 or 400 level, one of which must be Mathematics 363 (if not taken previously)

MATHEMATICAL STATISTICS (PROGRAM 3)

Third Year

Mathematics 355, 356

Two additional mathematics courses at the 300 or 400 level

One senior option from Division A or B

Fourth Year

Mathematics 445, 455

One of: Mathematics 450, 456, 460

Two additional mathematics courses at the 300 or 400 level

APPLIED MATHEMATICS (PROGRAM 4)

Third Year

Mathematics 356, 378

One additional Mathematics course at the 300 or 400 level

Two options at the 300 or 400 level

One senior course (or the equivalent) from Division A or B

Fourth Year

Mathematics 478 or 488

One of: Mathematics 450, 456, 464, 468

Two additional Mathematics courses at the 300 or 400 level

Two options at the 300 or 400 level

In Program 4, a department other than the Department of Mathematics may prescribe the options in each year, subject to the approval of the Department of Mathematics. In this case, Program 4 will be called "Applied Mathematics, ... Option" where the blank space is to contain the name of the field in which the non-mathematics options are selected. (For options in Physics and in Computing, see below.) A student may select options in more than one field of application and, in this case, the program will be called "Applied Mathematics". The departments concerned will, however, require that the selections provide a coherent program.

The following courses must be chosen in the Physics Option:

First Year - First Year General Program 1, with at least 60% in Mathematics 24 and at least 60% in Physics 20

Second Year - Physics 250, 256

Third Year - Mathematics 350, Physics 350, and either Physics 353 or 377

Fourth Year - Mathematics 363, 458, 478, 498, Physics 455.

The following courses must be chosen in the Computing Option of Applied Mathematics:

Third year - Mathematics 363, Computer Science 313

Fourth Year - Computer Science 403, 413

Note: Students entering the Computing Option should take a short non-credit course in ALGOL in their Second year.

MODERN LANGUAGES AND LITERATURES

Requirements for Admission: First Year, General Program 2, with at least 60% in the two Honors subjects.

The following combinations of Honors subjects are permitted: French and German, German and Russian, French and Spanish, German and Spanish, French and Russian, Russian and Spanish.

A student must continue in the third and fourth years of the Honors Program the combination of Honors subjects selected at the beginning of the second year.

The French and German and the French and Spanish Honors Programs are accepted by the Department of Education of Ontario as the academic qualification for the High School Assistant's Certificate, Type A, French and German, or French and Spanish.

Students who begin Spanish in the University and who wish to major in Spanish will take Spanish 20 in the Second Year and will defer Spanish 231 and Greek 29 until the Third Year.

Students who begin Russian in the University and who wish to major in Russian will take Russian 20 in the Second Year and will defer Greek 29 until the Third Year.

Second Year

French 270, 271
German 290, 291
Spanish 230 or 340, 231, 260
Russian 280, 281

Greek 29
One of: English 32, 34, 44
At least one course in a foreign language not chosen as a major.

Third Year

For admission to the Third Year an average of 60% is required in the French, German, Spanish or Russian of the Second Year, and an average of 60% in all other courses.

French 380, 381
German 333, 390, 391
Spanish 340 or 230, 341, 365
Russian 390, 391

One of: English 49, History 35, 36, 37, Philosophy 31, 35, Psychology 21, 49

At least one course in the minor foreign language of the Second Year.

Fourth Year

For admission to the Fourth Year an average of 60% is required in the French, German, Spanish or Russian of the Third Year and an average of 60% in all other courses.

French 450, 490, 491, 499
German 420, 480, 481
Spanish 455, 460, 461, 465
Russian 420, 490, 491, 493

One course in the minor foreign language continued from the Third Year

MUSIC EDUCATION

This program is offered at the College of Music.

Requirements for Admission: Grade XIII standing (or the equivalent) in English, another language, Music (Grade VIII practical, Grade II theory and a satisfactory audition) and at least three other papers, with an average of 60%.

Before graduation each student must have passed the Associate examination in some instrument or voice.

This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Music, and admits the student to category IV of the O.S.S.T.F. on completion of the O.C.E. requirements.

First Year

Music 107, 117, 121, 124, 125, 126, 127, 137, 157
English 20
French 20 or German 1
One of: History 20, a second language, Mathematics 20, Philosophy 20, Psychology 20

Second Year

Music 207, 217, 227, 231, 234, 235, 236, 237, 247, 257
English 32
One of: French 30, 31, German 10
One of: History 36, a second course in French or German or another language, Mathematics 24, Philosophy 30, Psychology 36

Third Year

Music 307, 317, 327, 337, 341, 344, 345, 346, 347, 357
English 38
Physics 33

Fourth Year

Music 407, 417, 417R, 427, 437, 447, 447R, 451, 454, 455, 456, 457, 467
Two full courses in Arts or Sciences

MUSIC GRADUATE IN PAEDAGOGY

This two year course leading to the Diploma (Mus. G. Paed.) is offered at the College of Music.

Requirements for Admission: (1) Satisfactory results in audition test. At least Grade IX standing in some instrument or voice, and Grade II theory. (2) Grade XIII standing (or equivalent) in English, another language, Music, and at least three other papers, with an average of 60%.

Students must have completed the Associate examination in their major subject before graduation.

First Year

Music 21c for piano majors
Music 21d and 21cd for voice majors
Music 21e and 21ce for organ majors
Music 22 for piano and organ majors
Music 23, 24, 25, 26, 27 and 28
English 20
One of: French 20, German 1, Italian 1, History 20, Mathematics 20, Philosophy 20, Psychology 20.

Second Year

Music 31c for piano majors
Music 31d and 31cd for voice majors
Music 31e and 31ce for organ majors
Music 33, 34, 35, 36, 37, and 38
English 32
One of: French 30, German 10, Italian 10, History 36, Mathematics 24, Philosophy 36, Psychology 36.

PHILOSOPHY

(This program is offered in the Colleges of the University only.)

Requirements for Admission: The completion of the First Year, General Program 1 or 2 or of the first year of the General Program: Pre-Theological Options with at least 60% in English and 60% in each of five other courses.

Second Year

English 32 or 38 or History 257	Philosophy 230, 231
A Natural Science 21	Two or more options

Third Year

For admission to the Third Year an average of 60% is required in the Philosophy of the Second Year, and an average of 60% in all other courses.

Philosophy 336, 347	Two options
Philosophy 335, or 350	
A course in Psychology	

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Philosophy of the Third Year, and an average of 60% in all other courses.

Four of: Philosophy 446, 448, 456, 457, 462, 466	One option

PHILOSOPHY AND GERMAN

Requirements for Admission: First Year General Program 2, with 60% in English 20 and in German 20. History 20 must be chosen as an option in the First Year.

Second Year

German 290, 291
Philosophy 230, 231

Two options

Third Year

For admission to the Third Year an average of 60% is required in the German and Phlosophy of the Second Year, and an average of 60% in all other courses.

German 333, 390, 391
Philosophy 336, 347

Two options

Fourth Year

For admission to the Fourth Year an average of 60% is required in the German and Philosophy of the Third Year, and an average of 60% in all other courses.

German 420, 480, 481
Philosophy 457
Two of: Philosophy 335, 443, 444, 448, 456, 462, 466

PHILOSOPHY AND PSYCHOLOGY

Requirements for Admission: First Year, General Program 2, with an average of 60% and preferably with 60% in Philosophy 20 and Psychology 20.

Second Year

Philosophy 230, 231
Zoology 30 (or 21, if not qualified to register in 30)

Psychology 235, 236
One option (Psychology 21 must be elected if not taken previously)

Third Year

For admission to the Third Year an average of 60% is required in the Philosophy and Psychology of the Second Year and an avergae of 60% in other courses.

Students who plan to continue into graduate studies are advised to begin work in a second foreign language in the third year of this program, if they have not done so earlier.

Philosophy 336, 347
Psychology 338, 349, 355

One option

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Philosophy and Psychology of the Third Year and 60% in the option.

Psychology 444, 448, 459

Three of: Philosophy 335, 443, 448, 456, 457, 462, 466

PHILOSOPHY AND SOCIOLOGY

Requirements for Admission: First Year, General Program 2, with an average of 60% and preferably with 60% in Philosophy 20 and Sociology 20.

Second Year

Philosophy 230, 231
Economics 237
Politics 20
Sociology 330
One of: English 32, 36, 38

Third Year

For admission to the Third Year an average of 60% is required in the Economics, Philosophy, Politics and Sociology of the Second Year. 60% is required in the English course selected.

Philosophy 336, 347
History 36
Psychology 21
Sociology 440
Economics 333 or Politics 434

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Economics (or Politics), Philosophy and Sociology of the Third Year. An average of 60% must be obtained in other courses.

Students who plan to continue into graduate studies are advised to begin work in a second foreign language, if they have not done so earlier.

Philosophy 448, 462
Politics 237
Psychology 49
Sociology 478
One option

PHYSICAL, HEALTH AND RECREATION EDUCATION

Requirements for Admission: First Year, General Program 2, with an average of 60%. Psychology 20, Zoology 21 and Physical Education 20, should be selected. This program is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type A, Physical Education.

Second Year

A Senior English
Psychology 36
Zoology 24
P.H.R.E. 251, 253, 258
One option beginning a field of concentration in the Humanities, the Social Sciences, or the Natural Sciences

Third Year

For admission to the Third Year, an average of 60% is required in the Honors courses of the Second Year, and an average of 60% in all other courses.

English 39
One of: Sociology 20, Psychology 49, Philosophy 30
P.H.R.E. 351, 352, 354, 366
Two options

Fourth Year

For admission to the Fourth Year, an average of 60% is required in the Honors courses of the Third Year, and an average of 60% in all other courses.

P.H.R.E. 451, 453, 454, 456, 457
Two options

Honors Program

66

PHYSICS AND MATHEMATICS

Requirements for Admission: First Year, General Program 1, or First Year Engineering, with an average of 60% in the Science and Mathematics subjects, at least 60% in Mathematics and 60% in Physics.

This program is accepted by the Department of Education of Ontario as the academic qualification for the High School Assistant's Certificate, Type A, Mathematics and Physics.

Students who are primarily interested in the application of Mathematics to the Physical Sciences are referred to the Honors Applied Mathematics (Program 4) with Physics options. Admission to the Third Year of this program is open to students who have completed the Second Year of Physics and Mathematics.

Second Year

One of: French 20, German 5, Russian 1

Mathematics 250, 256
Physics 250, 251, 256

Third Year

For admission to the Third Year an average of 60% is required in the Honors Courses of the Second Year, and an average of 60% in all of the courses of that year.

The same language must be chosen in the second and third years. For those with previous training in German or Russian a more advanced sequence may be chosen by the candidate in consultation with the Department concerned.

Students may choose either the General Physics or the Radio Physics options for the last two years of this program.

One of: French 31, German 15, Russian 15
Mathematics 356

General Physics Option
Physics 353, 356, 359

Physics 350
One of: Mathematics 378, Physics 351

Radio Physics Option
Physics 376, 377, 379
One of: Economics 20, Philosophy 31 or 34

Fourth Year

For admission to the Fourth Year, an average of 60% is required in the Honors courses of the Third Year, and an average of 60% in all of the courses of the Third Year.

Physics 455, 456, 457, 458

General Physics Option
Physics 454, 459
One of: Economics 20, English 32 or 35, Psychology 21, Philosophy 31 or 34

Radio Physics Option
Physics 477, 479
One of: Mathematics 478 or Physics 476

POLITICS

Requirements for Admission: First Year, General Program 2, with an average of 60%, and 60% in Politics 20 if taken.

All students will normally be expected to take most of their approved options in related fields such as History, Philosophy and Economics. Students wishing to stress International Politics are advistd to carry a foreign language, preferably French, German or Russian, and the following courses: Politics 231, 348, 451, History 236, 356.

Second Year

Two of: Politics 231, 242, 244

Four options. History 231 and 236 are recommended.

Third Year

Politics 337.

One of: Politics 348, 350, a second year course not previously taken, a fourth year course.

Four options. History 356 or 444 are recommended

Fourth Year

Politics 480.

Two of: Politics 434, 451, 462(a) and 462(b), a senior course not previously taken.

Two options.

PSYCHOLOGY

(This program is offered in The Colleges of the University only).

Requirements for Admission: First Year, General Program 1 or 2, with an average of at least 60%. Zoology should be selected as an option in the First Year.

Second Year

Philosophy 30

Psychology 234, 235, 236

One option

Zoology 30 (or 21 if not previously completed)

Third Year

For admission to the Third Year an average of 60% is required in the Psychology of the Second Year, and an average of 60% in all other courses.

Psychology 337, 338, 339, 349, 355

One option

Fourth Year

For admission to the Fourth Year an average of 60% is required in the Psychology of the Third Year, and an average of 60% in all other courses.

Psychology 444, 446, 448, 459

Two options

University and Middlesex Colleges
Faculties and Courses

BOTANY

University College

Professors:

Clarence James Hickman, B.Sc., M.Sc., Ph.D. Birmingham, Head of the Department
Duncan Archibald McLarty, B.A.; Ph.D. Columbia

Associate Professors:

Frankland Shaw Cook, B.A., Ph.D. Toronto
Wilbert Ezekiel McKeen, B.Sc., M.Sc.; Ph.D. Toronto
David George Wilson, B.A. Toronto and Queen's; M.A. Queen's; Ph.D. Wisconsin

Assistant Professor:

David Burton Walden, B.A. Weslyan; M.Sc., Ph.D. Cornell

Lecturers:

James Bird Phipps, B.Sc. Birmingham
Angela Myra Wellman, B.Sc., Ph.D. Bristol

Honorary Lecturers (Part-time):

Wolfgang Albert Andreae, M.Sc., Ph.D. McGill
William Harold Minshall, B.S.A. Toronto; M.Sc., Ph.D. McGill
Lloyd Thomas Richardson, B.A. McMaster; M.A., Ph.D. Toronto
Edward William Beswick Ward, B.Sc. Wales, M.Sc., Ph.D. Alberta

Instructor:

John K. Johannesen, Diploma, Royal Agricultural College, Copenhagen (Plant Culture)

John Labatt Fellow:

Keith Moore, B.Sc., M.Sc. Birmingham

Demonstrators:

Donald John Stoddart Barr, B.Sc. (Agr.), M.Sc. McGill; Vincent Jerome Bellis, B.Sc., M.S. North Carolina State College; Jagmohan Singh Jhooty, B.Sc. Punjab; M.Sc. Western; Christine Jennifer Knell, B.Sc. Nottingham; Nêst Pritchard, B.Sc. Cardiff; David Johnston Royle, B.Sc. Birmingham; Ramon Clemence Zimmer, B.Sc. Ohio.

Courses

20. Introductory Botany: For students of General Program 1; the general principles of Botany. To qualify for the Honors Program in Biology a student must obtain 60 per cent in this course. 2 lectures, 3 laboratory hours.

21. Biological Science (Botany Section): 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 illustrated by examples from zoology as well as botany.

Either Botany 21 or Zoology 21 may be taken for credit but not both.

Students who obtain 60% in this course may select options for further study in Botany and Zoology.

2 lectures, 2 laboratory hours.

31. Mycology: Morphology, biology and classification of fungi.

1 lecture, 3 laboratory hours.

Prerequisite: Botany 20 or Biological Science 21.

33. Plant Ecology: Vegetation types of the world; plants and plant communities in relation to environmental factors; dynamics of plant communities.

1 lecture, 3 laboratory hours.

Prerequisite: Botany 20 or Biological Science 21.

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: Botany 20 or 21 2 lectures.

36. Bacteriology: The common economic organisms in reference to water, food supplies, public health and civic problems. Prescribed for students in Home Economics and Nursing: optional for others. 1 lecture, 3 laboratory hours.

Prerequisite: Botany 20 or Biological Science 21 or 60% in Grade XIII Botany and Zoology.

37. Plant Taxonomy: Classification of seed plants, their phylogeny and nomenclature; experimental taxonomy; introduction to origin of cultivated plants. Identification of seed plants, ferns and mosses. 1 lecture, 3 laboratory hours.

Prerequisite: Botany 20 or Biological Science 21.

42. Plant Physiology: Aspects of the physiology of growth and development including growth regulation, reproduction and dormancy.

Prerequisite: Botany 20 or Biological Science 21. 1 Lecture, 3 Laboratory hours.

Honors Courses

250. Algae and Land Plants: The morphology, anatomy and development of green plants.

Prerequisite: Botany 20. 2 lectures, 3 laboratory hours.

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.

Prerequisite: Botany 20 2 lectures, 3 laboratory hours

352. Plant Physiology: The processes involved in the growth of plants and in their behavior in relation to the environment.

Prerequisite: Botany 250. 2 lectures, 3 laboratory hours.

357. Plant Taxonomy: Classification of seed plants, their phylogeny and nomenclature; experimental taxonomy; introduction to origin of cultivated plants. Identification of seed plants, ferns and mosses.

Prerequisite: Botany 250. 1 lecture, 3 laboratory hours.

361. Mycology: Morphology, biology and classification of fungi.

Prerequisite: Botany 250. 1 lecture, 3 laboratory hours.

366. Bacteriology: Morphology, biology and classification of bacteria.
Prerequisite: Botany 250. 1 lecture, 3 laboratory hours

452. Growth and Development: Aspects of the physiology of growth and development including growth regulation, reproduction and dormancy.
Prerequisite: Botany 352. 1 lecture, 3 laboratory hours.

453. Plant Ecology: Vegetation types of the world; plants and plant communities in relation to environmental factors; dynamics of plant communities.
Prerequisite: Botany 250. 1 lecture, 3 laboratory hours.

454. Cytogenetics: The study of chromosomes and the genetic consequences of meiosis.
Prerequisite: Botany 255. 1 lecture, 3 laboratory hours.

458. Economic Botany: Origin and development of cultivated plants; plant breeding.
Prerequisite: Botany 250. 1 lecture, 3 laboratory hours.

460a. Algae and Limnology: Morphology and biology of fresh water algae with particular reference to their significance in natural waters.
Prerequisite: Botany 250. 2 lectures, 6 laboratory hours one term.

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.
Prerequisite: Botany 361. 2 lectures, 6 laboratory hours one term

463. Biological Field Studies: An obligatory course of study of living organisms in their environment. The student should be prepared to meet part of his expenses for travel and subsistence.
Prescribed but non-credit.

BUSINESS ADMINISTRATION

University College

(Members of the Faculty of the School of Business Administration)

Assistant Professor:
Samuel A. Martin, M.B.A., C.A.

Lecturers:
John A. Humphrey, B.A., M.B.A.
R. John Kennedy, B.Comm., M.B.A.

Courses

20. Introduction to Business Organization: 3 hours.

250. Fundamentals of Accounting: 3 hours.

CHEMISTRY

University College

Professors:

Frederick Lewis Maitland Pattison, B.A., M.A., Ph.D. Cantab., Head of the Department
Donald Charlton Bradley, B.Sc., Ph.D., D.Sc. London
Paul de Mayo, B.Sc., M.Sc., Ph.D. London
Elvins Y. Spencer, M.Sc. Alberta; Ph.D. Toronto (Honorary part-time)

Associate Professor:

Armas John Sukava, B.Sc., M.Sc. Manitoba; Ph.D. McGill

Assistant Professors:

Howard Wesley Baldwin, B.A., M.A. Saskatchewan; Ph.D. Chicago
Dino Ronald Bidinosti, B.Sc., M.Sc. Manitoba; Ph.D. McMaster
Raymond Kai-Chow Chan, B.A., Ph.D. Toronto
Donald McLean Graham, B.Sc., M.Sc.; Ph.D. Brooklyn Poly. Inst.
Walter Colston Howell, B.Sc., M.Sc., Ph.D.
James Frederick King, B.Sc., Ph.D. New Brunswick
Narasinba R. Kunchur, B.Sc., M.Sc. Bombay; Ph.D. Leeds
John William Lorimer, B.A., M.A., Ph.D. Toronto
Andrew Edington Scott, B.Sc., Ph.D. St. Andrews
John Bailie Stothers, B.Sc., M.Sc.; Ph,D. McMaster
Edgar William Warnhoff, A.B. Washington U., Ph.D. Wisconsin
Christopher John Willis, M.A., Ph.D. Cantab.

Lecturer (part-time):

James Wendel Burns, B.A.Sc. New Brunswick; M.Sc. Queen's

Laboratory Supervisor:

Duncan Archibald MacRae, B.A.

Honorary Lecturers (part-time):

Kenneth K. Carroll, B.Sc. New Brunswick; M.Sc. Toronto; Ph.D.
David Milroy Miller, B.Sc., M.Sc. Alberta; Ph.D. McGill
James Russell Robinson, B.S.A., M.S.A. Toronto; Ph.D.
George Denis Thorn, B.Sc. Alberta; M.A. Queen's; Ph.D. McGill

Postdoctoral Fellows:

Jayramdas H. Amin, B.Sc., M.Sc. Bombay; Ph.D. Gujarat; Yu-Shih Chen, B.S. Taiwan; M.S., Ph.D. Tokyo; Kenneth J. Chivers, Ph.D. London; Harold Cross, B.Sc., M.Sc. Toronto; Ph.D. Jerusalem; Calliope Demas, B.Sc., Ph.D. Athens; Peter A. Hammersley, B.Sc., Ph.D. London; R. Garth Kidd, B.Sc., M.Sc. Manitoba; Ph.D. London; James C.N. Ma, B.S. Shanghai; Dr. ès Sciences Strasbourg; Christopher H. Marsh, B.Sc., Ph.D. London; John Newton, B.Sc., Ph.D. Birmingham; Michael A. Nisbet, B.A., Ph.D. Dublin; Hitoshi Takeshita, B.Sc., M.Sc., Ph.D., D.Sc. Tohoku; Wun-ten Tai, B.S. Taiwan; M.S. S. Carolina; Ph.D. Florida.

Predoctoral Fellows and Scholars:

Ronald L. Buchanan, B.Sc.; John J. Dugan, B.Sc.; Tony Durst, B.Sc.; Mary C. Fallona, B.Sc.; T. Ralph Hollands, B.Sc.; Richard H. Holyer, B.Sc.; John M. MacDonald, B.Sc.; Anthony J. McNamara, B.Sc., M.Sc.; R. Garth Pews, B.Sc.; Donald J. Poulton, B.Sc. Sask.; George H. Watts, B.Sc.; Ross E. Williams, B.Sc.

Demonstrators and Research Assistants:

Kushalappa Abikar, B.Sc. Madras; M.Sc. Banaras; Alan D. Allbutt, A.R.I.C. Bristol; Jagtar S. Basi, B.Sc. Punjab; M.Sc. Chandigarh; Donald E. Bracken, B.A. Hofstra Coll.; M.S. Holy Cross; Thomas Brydges, B.Sc.; Selwyn S. Chan, B.Sc., M.Sc. McMaster; John Cooper, B.Sc. Southampton; Floyd H. Dean, B.S.A. Toronto; Robert E. A. Dear, A.R.I.C. Bristol; Kewal S. Dhami, B.Sc., M.Sc. Punjab; Melvin H. Gitlitz, B.Sc. McGill; Charles M. M. Halls, B.Sc. Manchester; Martin J. Hillyer, B.Sc. London; Jerold C. Hipfner, B.Sc.; Clive E. Holloway, A.R.I.C. Bristol; M.Sc.; Beverley L. Huston, B.Sc.; David E. G. Jones, B.Sc.; Ross E. Klinck, B.Sc.; David H. Marr, B.Sc.; M. Mathew, B.Sc. Agra; Bruce R. Meldrum, B.Sc. Sydney; Rodney L. Mieville, A.R.I.C. London; Wilfred J. Newby, B.Sc. McGill; John J. M. Ryan, B.Sc. Toronto; Alvin N. Starratt, B.Sc. Acadia; Takao Tabata, B.Sc., M.Sc. British Columbia; Ping S. Tham, B.A. McMaster; Alan H. Westlake, B.Sc. Southampton; Clive I. Wynter, B.Sc. McGill; Roderick W. J. Yip, B.Sc. British Columbia; B.Sc.

Courses

20. General Chemistry: 2 lectures, 3 laboratory hours.

21. Physical Science 21 (Chemistry Section): Either Physics 21 or Chemistry 21 may be taken for credit but not both.
2 lectures, 2 laboratory hours.

22. Quantitative Analysis: For Home Economics and Nursing students only.
1 lecture, 3 laboratory hours.

24. Elementary Physical Chemistry: For students in Engineering Science.
3 lectures, 1½ laboratory hours.

32. Inorganic and Analytical Chemistry: For General Program students.
Prerequisite: Chemistry 20 or 24. 2 lectures, 3 laboratory hours.

33. Organic Chemistry: For Home Economics and General Program students.
Prerequisite: Chemistry 20 or 24. 2 lectures, 3 laboratory hours.

44. Physical Chemistry: For General Program students.
Prerequisite: Chemistry 20 2 lectures, 3 laboratory hours.

46. Biochemistry and Food Analysis: For Home Economics and General Program students.
Prerequisite: Chemistry 33 2 lectures, 3 laboratory hours.

Honors Courses

200. Elementary Physical Chemistry: Chemical principles: For students in Honors Geology and Honors Geophysics. 2 lectures, 3 laboratory hours.

203. Organic Chemistry: For prospective Medical students and students in Honors Biology. 2 lectures (both terms), 3 laboratory hours (one term).

204. Physical Chemistry: For prospective Medical students and students in Honors Biology. 2 lectures (both terms), 3 laboratory hours (one term).

211. Principles of Inorganic Chemistry: For students in Engineering Science.
2 lecture hours.

213. Elementary Organic Chemistry: For students in Engineering Science.
2 lectures, 1½ laboratory hours.

253. Elementary Organic Chemistry: For students in Honors Chemistry.
2 lectures, 3 laboratory hours.

254. Elementary Physical Chemistry: Kinetic theory and elementary thermodynamics: For students in Honors Chemistry. 3 lecture hours.

261. Principles of Inorganic and Analytical Chemistry: For students in Honors Chemistry. 2 lectures, 6 laboratory hours.

313. Intermediate Organic Chemistry: For students in Engineering Science. 3 lecture hours.

351. Intermediate Inorganic Chemistry: For students in Honors Chemistry. 2 lectures, 3 laboratory hours.

353. Intermediate Organic Chemistry: For students in Honors Chemistry. 3 lectures, 4 laboratory hours.

354. Intermediate Physical Chemistry: Chemical thermodynamics and phase rule: For students in Honors Chemistry. 3 lectures, 3 laboratory hours.

374. Theoretical Chemistry: Atomic structure, atomic spectra, introduction to quantum chemistry: For students in Honors Chemistry. 2 lecture hours.

402. Inorganic and Analytical Chemistry: For students in Honors Biology. Prerequisite: Chemistry 20 or 24. 2 lectures, 3 laboratory hours.

406. Biochemistry: For students in Honors Biology. 2 lectures, 3 laboratory hours.

409. Laboratory: Designed to accompany the lecture work of the 4th year Honors Chemistry. 6 laboratory hours.

414. Physical Chemistry: Chemical thermodynamics and phase rule: For students in Engineering Science. 3 lecture hours.

451. Advanced Inorganic Chemistry: Selected Topics. 2 lecture hours.

452. Instrumental Analysis: 1 lecture hour, half course.

453. Advanced Organic Chemistry: Selected topics. 2 lecture hours.

454. Advanced Physical Chemistry: Statistical thermodynamics and kinetics. 2 lecture hours.

456. Biochemistry: (Given in conjunction with the Department of Biochemistry) 1 lecture hour, half course.

459. Seminar and Research: 6 hours.

474. Molecular Structure: 2 lecture hours

CLASSICS

University College

Professors:

Alfred Ernest Raymond, B.A., M.A. Toronto; Ph.D. Chicago,
W. Sherwood Fox Professor of Classics, Head of the Department
Robert Edward Kingsdown Pemberton, M.A. Oxon.
John Danby Ralph, B.A. Queen's; Ph.D. Chicago

Assistant Professors:

Douglas Earl Gerber, B.A., M.A., Ph.D. Toronto
Hamilton Baird Timothy, M.A., B.D. Glasgow; B.A. London; Ph.D. Edinburgh

Lecturers:

Ivars Avotins, B.A. Toronto; M.A. Harvard
Charles Leslie Murison, M.A. Edinburgh; B.A. Cantab.

GREEK COURSES

1. *Elementary Greek:* A preparatory course for those who wish to begin the study of Greek at the University. 3 hours.

10. Plato, Selected Dialogues; Colson's "Greek Reader", Part VIII; composition, sight translation. 3 hours.
Prerequisite: Grade XII Greek or Greek 1

20. Plato, "Crito"; Menander, "Dyscolus"; Demosthenes, "In Cononem"; composition, sight translation. 3 hours.
Prerequisite: Grade XIII Greek or Greek 10

29. Greek Literature in English Translation: A survey of Greek literature for those without a reading knowledge of Greek. 1 hour: half course

30. Plato, "Apology"; Aristophanes, "Clouds"; lectures on the social, religious, and political life of Athens in the fifth century B.C.; composition, sight translation.
Prerequisite: Greek 20 3 hours.

40. Greek Tragedy: one play each of Aeschylus, Sophocles, Euripides; lectures on the theatre and the development of the drama; composition, sight translation.
Prerequisite: Greek 30 3 hours.

Honors Courses

230. Plato, "Apology"; Aristophanes, "Clouds"; public, social, and political life of Athens in the fifth century B.C.. 2 hours
Prerequisite: First Year, General Program 2, including Greek 20

250. The Greek Epic: Selections from the "Iliad" and the "Odyssey".
Prerequisite: First Year, General Program 2, including Greek 20 1 hour: half course

251. Composition and Sight Translation.
Prerequisite: First Year, General Program 2, including Greek 20 2 hours

257. Ancient Civilizations: the near East, Greece, and Rome. *Identical with Latin* 257 and History 357. 3 hours

340. Greek Tragedy: one play each of Aeschylus, Sophocles, Euripides; lectures on the theatre and the drama.
Prerequisite: Greek 230 2 hours

350. I. Introduction to the Greek Historians: Herodotus
II. The Attic Orators: Lysias and Demosthenes
Prerequisite: Greek 230 2 hours

351. Composition and Sight Translation
Prerequisite: Greek 251 2 hours

352. Introduction to Greek Philosophy: Plato, "Republic", I-IV.
Prerequisite: Greek 230 1 hour: half course

450. The Greek Historians: Thucydides
Prerequisites: Greek 340, 350 2 hours

451. Composition and Sight Translation.
Prerequisite: Greek 351 1 hour: half course

452. Greek Philosophy: Plato, "Republic" V-X; Aristotle, "Ethics" I, II, IV, V.
Prerequisite: Greek 352 2 hours

453. Greek Lyric Poetry: selections from the early elegiac, iambic, and lyric poets.
Prerequisites: Greek 340, 350 3 hours, one term: half course

457. Greek and Roman History: lectures, readings, and reports. Prescribed for students in Honors Classics or Latin with Greek, optional with the consent of the instructor for other qualified students. *Identical with Latin* 457. 2 hours.

LATIN COURSES

1. Elementary Latin: a preparatory course for those who wish to begin the study of Latin at the University. 3 hours

10. Selections from Latin Prose and Poetry: composition and sight translation.
Prerequisite: Grade XII Latin 3 hours

20. Pliny, "Letters"; Virgil, "Aeneid" VI; composition and sight translation.
Prerequisite: Grade XIII Latin or Latin 10 3 hours

30. Catullus; selections from Horace, "Odes".
Prerequisite: Latin 20 2 hours

34. Cicero; composition and sight translation.
Prerequisite: Latin 20 2 hours

39. Latin Literature in English Translation: a survey of Latin literature for those without a reading knowledge of Latin. 1 hour: half course

40. Virgil, "Aeneid" I-IV; Horace, "Satires", "Epistles"; Juvenal, "Satires".
Prerequisite: Latin 30 2 hours

44. Livy; composition and sight translation.
Prerequisite: Latin 34 2 hours

Honors Courses

230. Catullus; selections from Horace, "Odes".
Prerequisite: First Year, General Program 2, including Latin 20. 2 hours

250. Cicero, "Pro Roscio Amerino".
Prerequisite: First Year General Program 2, including Latin 20. 1 hour: half course

251. Composition and Sight Translation.
Prerequisite: First Year, General Program 2, including Latin 20. 2 hours

257. Ancient Civilizations: the Near East, Greece, and Rome. Identical with Greek 257 and History 357. 3 hours

340. Virgil, "Aeneid" I-VI; Horace, "Satires", "Epistles"; Juvenal, "Satires".
Prerequisite: Latin 230 2 hours

350. Cicero: the history of his life and times; "Pro Archia", "Philippic" II, "Letters."
Prerequisites: Latin 230, 250 2 hours

351. Composition and Sight Translation
Prerequisite: Latin 251 1 hour: half course

352. Roman Comedy, with an introduction to historical Latin Grammar.
Prerequisites: Latin 230, 250 1 hour: half course

450. Roman Historians: with special reference to Livy and Tacitus.
Prerequisites: Latin 340, 350, 352 2 hours

451. Composition and Sight Translation.
Prerequisite: Latin 351 1 hour: half course

452. Lucretius, I-III (Selections), V; Virgil, "Aeneid" VII-XII
Prerequisites: Latin 340, 350, 352 2 hours

453. Minor Latin Poets: a study primarily of Silver Age Poets with special emphasis on Latin metre; Horace, "Satires" I. 4, 10; "Ars Poetica".
Prerequisites: Latin 340, 350, 352 3 hours, one term: half course

457. Greek and Roman History: lectures, readings, and reports. Prescribed for students in Honours Classics or Latin with Greek, optional with the consent of the instructor for other qualified students. Identical with Greek 457. 2 hours

ECONOMICS AND SOCIOLOGY

University College

ECONOMICS

Professors:

Grant Louis Reuber, B.A., A.M., Ph.D. Harvard, Head of the Department
Mark Keith Inman, B.A. Acadia; M.A., Ph.D. Harvard.

Associate Professors:

John Joseph Madden, B.A. Manitoba; M.A. Toronto; Ph.D. Cantab.
Steve Gabriel Peitchinis, B.A., M.A.; Ph.D. London.
Ronald Johnston Wonnacott, B.A., A.M., Ph.D. Harvard.

Assistant Professors:

Markos Mamalakis, B. L. Solonica; M.A., Ph.D. California. (On leave)

Lecturers:

Robert A. Johnston, B. Com. Toronto; M.A. Queen's.
Louis Parai, B.A. Alberta; M.A. Toronto.
William D. Walsh, B. Com. British Columbia; M.A. Yale.
James Ralph Winter, B.A. Queen's.

SOCIOLOGY

Assistant Professors:

Kenneth John Duncan, B.A., M.A. Toronto.
William Edward Mann, M.A., Ph.D. Toronto.

Lecturers:

John Archibald McIntyre, B.A.; M.A. Toronto.
Director of Extension and Summer School Department.
William James Morris, B.A., M.A. Toronto.

ECONOMICS 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 hours.

30. Economic Theory: An intensive course in economic analysis. 3 hours.

Prerequisite: Economics 20 (with at least 60%) or permission of the instructor.

31. Contemporary Economics Problems and Policy: A survey of contemporary economic problems and policies applying the tools of economic analysis to such topics as; agriculture, wages and productivity, monopolies, employment, inflation, monetary and fiscal policy, international trade and investment, social security, defense and economic development. This course is restricted ordinarily to students in General Programs 1 and 2. A limited number of students in Honors Programs may be admitted by permission of the instructor.

Prerequisite: Economics 20. 2 hours.

33. Money, Banking and Income: Measurement and determination of national income, employment, prices; capital flows, banking, money supply; money-flow accounts; brief review of institutions and policies in the U.K. and U.S.; Canadian institutions and monetary and fiscal policies, particularly since 1935.

Prerequisite: Economics 20. 3 hours.

34. Economic Organization of Society: Problems of monopoly and economic concentration with special reference to Canada. Government intervention in agriculture, public utilities, transport, and foreign enterprise. Public ownership and state planning.

Prerequisite: Economics 20. 2 hours.

36. Labor Economics: The labor force — its industrial and occupational structure; labor problems of an industrial society; employment, productivity, determination of wages, labor's share of the national income, labor organization and union-management relations. 2 hours.

37. *Economic History of North America:* *An analysis of the determinants of* economic growth in North America with special emphasis on the influence of the European economy in generating such growth. 3 hours.

Honors Courses

Where honors and general course students attend the same lectures, additional assignments may be required from honor students.

230. Economic Theory. 3 hours.

237. Economic History of North America. 3 hours.

333. Money, Banking and Income.
3 hours and a Seminar, restricted to honors students.

334. Economic Organization of Society. 2 hours.

336. Labor Economics. 2 hours.

350. History of Economic Thought: A survey of the historical development of economic theory.

Prerequisite: Economics 230 or permission of the instructor. 2 hours.

351. International Economics: An intensive examination of the theory of international trade and investment, the balance of payments and commercial policy. A review of selected current problems and policies.

Prerequisite: Economics 230. 3 hours.

335. Statistics: Probability theory; sampling techniques; interval estimation of economic parameters; testing of hypotheses; index numbers; multiple regression and correlation techniques; identification, serial correlation and other statistical problems encountered in economics; special reference to Canadian data. 3 hours.

363. Public Finance: The economic theory of public revenues, expenditures and debt, and the application of public finance in the Canadian economy; the incidence, equity and economic effects of various forms of taxation; fiscal policy; inter-governmental financial relationships.

Prerequisite: Economics 230. 2 hours.

440. National Income Analysis: A critical examination of selected statics and dynamic theories of income determination; the role of monetary and fiscal policies. A detailed study of the degree to which various trade cycle theories explain economic fluctuations since World War I.

Prerequisites: Economics 230, 333. 3 hours.

447. Advanced Economic History: A study of the factors generating historical economic growth and fluctuations. The main topics will be European economic growth before the industrial revolution, the industrial revolution and its consequences for the economies of Europe and the Far East.

Prerequisite: Economics 20, 33-333, 37-237, or permission of the instructor. 2 hours.

455. Mathematical Economics: Mathematical formulation of economic theory; an introduction to dynamic models and their solution; the use of linear systems in economic analysis; an introduction to input-output analysis, linear programming and game theory.

Prerequisites: Economics 230 and Mathematics 20 or 24, or permission of the instructor. 3 hours.

460. Modern Price and Distribution Theory: An intensive course in selected current theories of consumption, production and distribution under various market conditions.

Prerequisite: Economics 230. 2 hours.

480. Seminar: Contemporary Economic Problems.

Prerequisite: Permission of the Head of the Department. 2 hours.

SOCIOLOGY COURSES

20. Introduction to Sociology: An examination of group structures and processes, status, role and stratification, culture and personality, major social institutions and social change. 3 hours.

30. Sociological Theory: A survey of the historical development of Sociological theory.

Prerequisite: Sociology 20 or permission of the instructor. 2 hours.

38. The Social Development of Canada: An examination of processes, problems and theories of social change using Canadian geographic, religious, economic, political and historical data for analysis.

Prerequisite: Sociology 20 or permission of the instructor. 2 hours.

40. The Sociology of Deviant Behaviour: A critical examination of theories of deviant behaviour and the study of crime, delinquency, alcoholism, family disorganization, the aged and minority group relationships.

Prerequisite: Sociology 20 or permission of the instructor. 2 hours.

46. Industrial Sociology: An examination of some non-economic influences in economic activity with emphasis upon a systematic comparative analysis of social oragnization, social processes and the practical human problems which emerge as a result of the division of labor.

Prerequisite: Sociology 20 or permission of the instructor. Seminar: 2 hours.

HONORS COURSES

Sociology 220, 330, 338, 440, and 446 are identical respectively with 20, 30, 38, 40 and 46 except that additional assignments will be required in Honors Courses.

450. Small Group Theory: A comparative analysis of the structure, processes, internal and external relationships and influence of small groups.

Prerequisite: Sociology 20 or permission of the instructor. *Seminar:* 2 hours.

478. Contemporary Sociology Theory: A study of modern Sociological theory with emphasis upon the analytical and functional schools. 2 hours.

ENGLISH

University College

Professors:

Malcolm Hugh Murdoch MacKinnon, B.A., M.A., Ph.D. Toronto, Head of the Department

Alfred Brandon Conron, D.S.O.; B.A., M.A.; A.M., Ph.D. Harvard

Roy W. Battenhouse, A.B. Albion; Ph.D. Yale, visiting professor, 1963-64

Associate Professors:

William Eric Duncan Atkinson, B.A. Cantab.; Ph.D. Chicago

Herbert Berry, B.A. Furman; M.A., Ph.D. Nebraska

George E. Buckley, B.A. Mt. Allison; M.A. Columbia

John Whichello Graham, B.A. Manitoba; M.A., Ph.D. Toronto

Assistant Professors:

Paul Duncan Fleck, B.A., M.A.; Ph.D. Belfast

Clifford Earle Sanborn, B.A., M.A., Ph.D. Toronto

Lecturers:

E. J. Devereux, M.A. Newfoundland

Ian Arnold MacDonald, B.A. Saskatchewan; M.A. Northwestern; Ph.D. Ohio State

Richard MacMillan Stingle, B.A., M.A. Toronto

Lecturers (part-time):

Mary M. Brown, M.A.

Elizabeth Hillman Waterston (Mrs. D. L.), B.A. Toronto; M.A. Bryn Mawr; Ph.D. Toronto

Instructors:

Myrtle Brock, B.A., M.A.

Judith Ramsay, M.A. Toronto

Jon Stott, M.A. British Columbia

Graduate Assistants:

Angela Herwin, B.A.

Julie Boersema Lindhout, B.A.

Bernard Stein, B.A.

Anna Stepaniuk, B.A.

Middlesex College

Professors:

Carl Frederick Klinck, B.A.; M.A., Ph.D. Columbia, F.R.S.C.; Professor of Canadian Literature, Acting Head of the Department, 1962-63.

Ross Greig Woodman, B.A. British Columbia; M.A. Manitoba; Ph.D. Toronto,

Associate Professors:

Christopher Dean, B.A., Ph.D. Leeds, acting head of the department, 1963-64

David Roswell Hauser, B.A. Grinnell; M.A., Ph.D. Johns Hopkins

James Reaney, B.A., M.A., Ph.D. Toronto

Assistant Professors:

Betty Bandeen, B.A.; A.M., Ph.D. Radcliffe
Ronald Gordon Nudell Bates, B.A., M.A., Ph.D. Toronto
Philip Coate Stratford, B.A.; D. de l'U. de Paris

Lecturers:

David B. McKeen, M.A. New Brunswick
Geoffrey Rans, M.A. Cantab.

Instructors:

Michael Estok, M.A. Saskatchewan
Sean J. Ward, B.A., M.A. National University of Ireland.

Graduate Assistants:

Stanley Atherton, B.A. New Brunswick
Maria Faber (Mrs. J. J.)
Donald Gutteridge, B.A.

Courses

Detailed descriptions of the following courses may be obtained from the offices of the Department of English.

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

If a student offers four senior English courses for his major or three senior English courses for his minor, one of those courses may be English 39 or English 46.

20. General Literature and Composition: Selections from the works of Chaucer, Shakespeare, Donne, Milton, Pope, Wordsworth, Arnold and Eliot. One hour a week will be allotted to the study of composition; essays will be written and discussed with the instructor. 3 hours.

No student will be admitted to any of the following courses until he has successfully completed English 20.

32. Literature of the Nineteenth Century: Selected works by Wordsworth, Coleridge, Shelley, Keats, Byron, Arnold, Tennyson, Browning, Newman, Huxley, Pater and other writers. 3 hours.

33M. General Literature and Composition: For prospective medical students only. Novels, plays, poems, and prose readings. Essays will be required. 2 hours.

34. Shakespeare: A study of the major plays. 3 hours.

36. Drama: A study of English and American dramatists against a background of Classical, Renaissance and Modern European drama. 3 hours.

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.

38. Literature of the United States and Canada (English): Selected works by American authors from Franklin to Faulkner and by Canadian authors from Haliburton to Page. 3 hours.

39. Speech: The major forms of oral discourse. 2 hours.

41. Creative Writing: Emphasis is placed on analysis of creative work submitted during the course. Apply to the Department of English for admission to this course. 1 hour: half course.

44. The English Novel: A survey of representative English and American novels from the eighteenth century to the present. 3 hours.

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.

46. Dramatics: Play Direction: An introductory course, with instruction in directing and acting, and participation in acting exercises and a final production. 2 hours.

49. Literature of the Twentieth Century: Selected works by poets and novelists, chiefly British. 3 hours.

Honors Courses

253. Comparative Philology: Offered by the Departments of English, Russian, German, and Romance Languages. 1 hour.

254. Criticism: A survey of the major critics, and problems in terminology and practical criticism. 2 hours.

270. Literature of the Romantic Revival (1780-1832). 2 hours.

280. Renaissance Literature, Non-Dramatic (1500-1660). 3 hours.

356. English Drama: Shakespeare and his contemporaries. 3 hours.

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

370. English Tutorial: Methods of research in English; advanced bibliography. Prescribed for third year students in all Honors English programs. 1 hour: half course.

373. Middle English and Chaucer. 3 hours.

436. *Modern British and American* Drama. 3 hours.

438. American and Canadian Literature (English-Canadian). 3 hours.

441. Creative Writing. 1 hour: half course.

444. The English Novel. 3 hours.

459. Literature of the Twentieth Century: Selected works by poets and novelists, chiefly British. 3 hours.

463. Old English Language and Literature: with special emphasis on Beowulf. 3 hours.

480. Restoration and Eighteenth Century Literature (1660-1780). 2 hours.

Geography

82

GEOGRAPHY

Middlesex College

Professor:
Edward Gustav Pleva, B.A., M.A., Ph.D. Minnesota, Head of the Department

Associate Professor:
Robert Wilfred Packer, B.A., M.A. Cantab.; F.R.G.S.

Assistant Professor:
Osmund Per Langtvet, C.Mag., C.Phil. Oslo
Charles Frederick John Whebell, B.A., M.Sc.; Ph.D. London

Lecturers:
Paul Martin Louis Bruer, B.A., M.A. Illinois (part-time)
Donald E. Guard, B.A.Sc., M.Sc., Manitoba (part-time)
Leonard N. Johnson, B.S.A. Toronto (part-time)
Robert McDaniel, B.A., M.A.
Donald M. G. Scott, B.Sc., M.Sc. Toronto (part-time)

Visiting Professor:
Allan K. Philbrick, B.A., M.A., Ph.D. Chicago

Preceptor:
Stephen R. Byles, B.A. Toronto

Sessional Instructor:
Joseph May, B.A., M.A., Chicago

Teaching Fellow
Edward Gibson, B.A.

Graduate Assistants:
Donald T. Cole, B.Sc. Queen's
William Weston Graham, B.Sc. McGill
W. Edward J. Haydon, B.Sc.
James Gordon Skinner, B.A.
Bruce B. Smithson, B.A. Carleton

Courses

20. Elements of Geography: The earth as the home of man; the elements of the physical and cultural landscape with special reference to man's adjustment to them. 2 lectures and 2 hours practical work.

30. Advanced Physical Geography: Studies of the environment factors, meteorology, climatology, geomorphology, hydrology, vegetation and soils; their interrelationships; techniques of measurement and classification, including air photographs and map projections.

Prerequisite: Geography 20 or equivalent. 2 lectures and 2 hours practical work.

32. Cultural Geography: An introduction to non-physical geography, with emphasis on concepts and research techniques in biogeography, demography, settlement and urban geography, anthropogeography, political geography, historical geography, geographical thought.

Prerequisite: Geography 20. 2 lectures and 2 hours practical work.

36. World Regional Geography: A systematic survey of the major natural and political regions of the world. 2 lectures and 2 hours practical work.
Prerequisite: Geography 20 or equivalent.

39. Geography of World Resources and Industries: Trade Routes and Centres. The world's physical resources; their nature, utilization, and transportation.
Prerequisite: Geography 20, or equivalent.
2 lectures and 2 hours practical work.

40. Political Geography: A general study of geographical factors in governmental organization; a survey of the political-territorial units of the world in their geographical settings; an introduction to Geopolitics.
Prerequisites: Two courses in Geography or equivalent.
2 lectures and 2 hours practical work.

41. Cartography: Scales and Projections, map making, surveying on the ground and from the air, official and professional maps, cartographic specialties.
Prerequisite: Geography 30. 2 lectures and 2 hours practical work

43. Research Methods in Geography: an introduction to methods of population projection, industrial location analysis, and regional social accounting; the application of linear systems and the gravity model to regional problems.
Prerequisites: Three courses in Geography or equivalent.
2 lectures and 2 hours practical work

45. Geography of Canada: The Natural Wealth of Canada and its Conservation: The geographic basis of human occupance in Canada. Conservation of natural resources. 2 lectures and 2 hours practical work.
Prerequisites: Two courses in Geography, or equivalent.

46. Advanced Area Studies in Regional Geography. Section 2 will be given in 1963-64.

Section 1. U.S.S.R. and Eastern Europe
2. Europe
3. Middle East
4. India, China, Japan
5. Africa
6. Latin America
7. Southeast Asia, Australia, New Zealand
8. U.S.A.

Prerequisite: Geography 36. 2 lectures and 2 hours practical work.

47. Historical Geography: A survey of the geographical factors in changing distributions of populations and political structures, with emphasis on North America. 2 lectures and 2 hours practical work.
Prerequisites: Three courses in Geography or equivalent.

Honors Courses

Geography 239, 330, 332, 336, 440, 441, 443, 445, 446, 447 are identical with 39, 30, 32, 36, 40, 41, 43, 45, 46, and 47 respectively. Students in the Honors courses will cover additional material including advanced practical work

450. Senior Research and Report in Geography: A report on a geographical problem including the results of field work, cartographical representation, and a study of the basic literature of the problem.
Prerequisites: Four courses in Geography. One course: Hours by arrangement.

GEOLOGY

University College

Professor:

George Harold Reavely, B.A., M.A.; D.I.C. London, Head of the Department

Associate Professors:

George Gordon Suffel, B.Sc., M.Sc. Queen's; Ph.D. Stanford

Aleksis Dreimanis, Mag.rer.nat. Riga

Charles Gordon Winder, B.Sc.; Ph.D. Cornell

Assistant Professor:

Gary McGregor Boone, B.A. Bowdoin; M.A. Brown; Ph.D. Yale

Lecturer:

William R. Church, B..Sc., Ph.D. Wales

N. R. C. Post-Doctoral Fellow:

Tom Neville Clifford, B.Sc., Ph.D. Leeds

Preceptor:

Alan Eugene Johnson, B.A. Minnesota

Graduate Demonstrators:

I. Ermanovics, B.Sc. Carleton; T. H. Pearce, B.Sc. Carleton; H. Rance, M.Sc. Natal; M. Risk, B.Sc. Toronto; U. Vagners, B.E.Sc. Toronto

20. Introductory Course in Geology: Minerals and rocks; geological processes and their results; structure of the earth; fossils; and outline of the earth's history; economic relationships. 2 lectures, 3 laboratory hours.

21. Geological Science: A survey of the Earth Sciences; the relation of Geology to the other sciences. 2 lectures, 2 laboratory hours.

Honors Courses

200. Mapping Procedures: Involving Alidade and plane table, aerial photo interpretation, pace and compass techniques. Emphasis on lithological examinations.

Offered at field camp: half course

251. Mineralogy and Elementary Petrology:

First part: Physical and chemical properties of minerals as related to structure and content of the crystal lattice. The problem of environment of formation and mineralogical equilibrium. The main mineral groups are studied.

Second part: Introduction to basic principles and hypotheses of origin of igneous, sedimentary, and metamorphic rocks. Chiefly megascopic description and identification of important rock types of the earth's crust.

2 lectures, 4 laboratory hours.

261. Course content as in Geology 251, but offered for Honors science students not enrolled in Honors Geology. Individual problems in crystallography and mineralogy. 5 hours.

263. Historical Geology: The significant events in the geologic history of the earth and its inhabitants, combined with a general discussion of the geology of Canada: Laboratory periods include map work, examination of fossils, and field trips. 2 lectures, 2 laboratory hours.

300. Field Investigations: The chief emphasis will be on structural geology and igneous, metamorphic and sedimentary geology. Geophysical, economic and Pleistocene field studies are included.
Offered at field camp: half course

351. Optical and Descriptive Mineralogy: The principles of optics as applied to the identification of minerals; the study of about 150 rock-forming mineral species, with practice in their identification in hand specimen and in thin section.
2 lectures, 3 laboratory hours.

354. Origin and Formation of Ore Deposits: A study of the principal processes of ore formation. Laboratory time will be spent in studies of ore minerals and ores, emphasizing the use of ore microscope. 2 lectures, 2 laboratory hours.

355. Structural Geology: Primary and induced structures in igneous, sedimentary and metamorphic rocks; the physical properties of rocks and the effects of stress application; the interpretative value of various minor structures; relations between structure and topography; earth's structure and mountain building. Laboratory work will include the interpretation of geologic structures from maps.
2 lectures, 2 laboratory hours.

363. Invertebrate Paleontology: First half — the study of fossils in biological succession with concentration on classification, morphology and ecology; second half — index fossils and their geologic ranges. 2 lectures, 3 laboratory hours.

365. Precambrian Geology of the Canadian Shield: General geology of the Shield, with studies of type areas. Particular attention is paid to current problems and controversies. 1 lecture, 1 hour class-study: half course.

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. 4 hours.

368. Geology of Soils: Involves selected topics from courses 20 and 367 offered only to Engineers majoring in Civil. 5 hours, one term: half course.

452 Petrology: The principles and theories of igneous and metamorphic rock genesis; silicate phase equilibria are stressed. The laboratory study consists of petrographic methods and problems. 2 lectures, 3 laboratory hours.

454. Economic Mineral Deposits: The occurrence and production of ores of the principal metals, with a study of outstanding examples. Laboratory work consists of (a) a series of reports based on original sources and (b) studies of specific ore deposits, with emphasis on microscopic examination.
1 lecture, 5 laboratory hours.

458. Senior Research and Field Report: A report on geological field work carried on by the student, including the results of laboratory investigation and a study of available literature. One and one-half courses.

460. Seminar: Presentation and discussion of papers on various geological subjects; informal discussion of topics of current geological interest. 2 hours: half course.

462. Principles of Geochemistry: Review of the three laws of thermodynamics; multi-phase equilibrium; origin of the elements; application of above to hydrothermal solution, ocean chemistry, magma and biochemical processes.
2 lectures, 2 laboratory hours.

463. Sedimentation and Stratigraphy: Types of sediments and their habitat, conditions within the environment. Stratigraphic concepts of unit nomenclature, correlation and facies. Laboratory exercises in sediment analysis and map interpretation.
2 lectures, 3 laboratory hours.

470. Micropaleontology: Morphology, classification, ecology and stratigraphic occurrence of fossil protista, foraminifera, annelida, ostracoda and conodonts. Laboratory and library research. Admission requires instructor's permission.
5 hours.

GEOPHYSICS

University College

Associate Professor:

Alan Edward Beck, B.Sc. London, Ph.D. Australian National University, A.Inst.P., Acting Head of Department

Assistant Professor:

Robert Frank Mereu, B.Sc.; M.A. Toronto; Ph.D.

Tadeusz Jan Ulrych, B.Sc. London; M.Sc., Ph.D. U.B.C.

Lecturers: (Part-time)

Charles Murray Carmichael, B.Sc., M.Sc., Ph.D. (Assistant Professor of Physics)

Robert James Uffen, B.A.Sc., M.A. Toronto; Ph.D.; P.Eng.; (Principal of University College)

Research Fellow:

Henry Currie Palmer, B.Sc., St. Francis Xavier; Ph.D. Princeton.

Research Associates:

Frank Mulvey Anglin, B.Sc.; Jerome Brian Carr, B.Sc.; William Earnest Gascoigne, B.Sc.; Alan Stephen Judge, B.Sc.; Lawrence Keith Law, B.Sc.; Donald Nicholas Skibo, B.Sc.; John Aris Slankis, B.Sc.; George Douglas Tikkanen, B.Sc.; Herbert Daniel Valliant, B.Sc.

Course

465. Geophysics: An introductory course in the various geophysical problems associated with gravity, magnetism, seismology, radioactivity, and the internal constitution of the earth, with applications to geophysical exploration.
2 lectures, 2 laboratory hours

GERMAN

University College

Professor:

Herbert Karl Kalbfleisch, B.A.; M.A. New York; M.A., Ph.D. Michigan; *Head of the Department*

Associate Professor:

Gordon Lloyd Tracy, B.A. Queen's; M.A., Ph.D. Wisconsin

Assistant Professor:

Alexander Robinson Anderson, B.A. Toronto, Ph.D. Brown

Lecturer:

Hanna Spencer (Mrs. E. Y.), Ph.D. Prague

Lecturer (Part-time):

Ronald Alexander Allen, B.A., M.A. Toronto; Ph.D. Chicago; Dean of Graduate Studies

Teaching Fellow:

Wilhelm J. Schwarz, B.A.

Courses

1. Elementary German: The work of Grade XII or its equivalent is covered. 3 hours.

5. Elementary Scientific German: The elements of German grammar with the reading of easy scientific German. 3 hours.

10. Intermediate German: The work of Grade XIII or its equivalent is covered. Review of grammar, composition, readings in modern literary German.

Prerequisite: Grade XII German or German 1. 3 hours.

15. Intermediate Scientific German: The reading of scientific works in German and a review of basic grammatical constructions as an aid to reading.

Prerequisite: German 5 or Grade XII German. 2 hours.

20. Advanced German: Survey of German literature, composition, grammar, dictation, conversation.

Prerequisite: Grade XIII German or German 10. 3 hours.

22. Conversation and Composition: Systematic oral practice and translation of texts. 2 hours: half course.

Prerequisite: German 10 or German 20 or permission of the Department.

30. Literature of the Nineteenth and Early Twentieth Centuries.

Prerequisite: German 20. 3 hours.

40. German Literature of the Classical Period. 3 hours.

42. Contemporary German Literature 3 hours.

44. A study of some major German novels of the Nineteenth and Twentieth centuries. 3 hours.

45. Advanced Scientific German: The reading of scientific works in German from textbooks and journals, supplemented by individual reading in the special field of study of each student.

Prerequisite: German 15 or Grade XIII German. 1 hour: half course.

Honors Courses

All students in Honors Courses will take a comprehensive examination at the end of the final year.

290. Prose and Poetry of the Nineteenth Century.

Prerequisite: German 20. 3 hours.

291. Conversation, Composition, Translation, Phonetics.

Prerequisite: German 20. 2 hours.

333. Middle High German Language and Literature: An introduction to Germanic philology. 2 hours.

390. Drama of the Nineteenth Century. 3 hours.

391. Conversation, Composition, Translation.
Prerequisite: German 291. 2 hours.

420. German Literature of the Twentieth Century 2 hours.

444. The German Novel from the Seventeenth Century to the present. 3 hours.

480. German Classicism: Lessing, Goethe, Schiller. 3 hours.

481. Conversation, Composition, Translation. 2 hours.

HEBREW

Assistant Professor:

J. J. Jackson, A.B. Harvard; B.D. Episcopal Theological School, Cambridge, Mass.; Th.D. Union Theological Seminary, New York.

Courses

These courses are given in Huron College on behalf of University College and Huron College.

1-10 ***Grammar:*** *Text of Genesis 1-3; 22; Jonah.* 5 hours.

20. Introduction to Hebrew Narrative and Poetry: Text of II Samuel 9-20; I Kings 1-2. Selected Psalms.
Prerequisite: Hebrew 1-10. 3 hours.

30. Hebrew Prophetic Literature: Selections from Isaiah of Jerusalem, Jeremiah, and the Minor Prophets. *Introduction to Gunkel's* ***"Formgeschichte"*** *and* ***"Gattungskritik".***
Prerequisite: Hebrew 20. 2 hours.

HISTORY

University College

Professors:

Wallace Klippert Ferguson, B.A.; M.A., Ph.D. Cornell; Litt.D.; F.R.S.C., Head of the Department and J. B. Smallman Professor of History

Associate Professor:

Walter Balderston, B.A., Ph.D. Cornell
John Rowland Gwynne-Timothy, B.A., M.A. Toronto; D.Phil. Oxon.

Assistant Professors:

William Herbert Stockdale, A.B., M.A. Alabama; Ph.D. New York

Lecturers:

Paul Dobson, B.A. Brooklyn; M.A. New York.
Kenneth Harry Warren Hilborn, B.A., M.A., Queen's; D. Phil. Oxon.
Bennett David Hill, B.A., M.A. Princeton; A.M. Harvard

Lecturers (Part-time):

Star Floyd Maine, B.A.; B.D. Victoria; M.A., Ph.D. Chicago
Alfred Ernest Raymond, B.A.; M.A. Toronto; Ph.D. Chicago
James John Talman, B.A., M.A.; Ph.D. Toronto; F.R.S.C., University Librarian

Middlesex College

Professors:

Donald Gordon Grady Kerr, B.A. McGill, Ph.D. London; Head of the Department.
Richard C. Overton, A.B., A.M., Williams; A.M., Ph.D. Harvard
Peter Busby Waite, B.A., M.A. British Columbia; Ph.D. Toronto

Associate Professor:

George Alan Wilson, B.A., M.A. Dalhousie; Ph.D. Toronto

Assistant Professor:

Albert Victor Tucker, B.A., M.A. Toronto; Ph.D. Harvard

Lecturers:

Frederick Henry Armstrong, B.A., M.A. Toronto
Bruce W. Hodgins, B.A., M.A. Queen's
Charles Arthur Ruud, B.A. Willamette; A.M. Harvard

Lecturers (Part-time):

Fred Harvey Hitchins, B.A., M.A., Ph.D. Pennsylvania
John Purves McLaughlin, B.A. Queen's; Ph.D. London; Assistant Librarian

Courses

20. Medieval, Renaissance and Reformation History: Europe from the founding of the Roman Empire to the middle of the sixteenth century. 3 hours.

31. History of Canada: From the beginning of the French Regime, with emphasis on the nineteenth century. 2 hours.

33. The British Empire and Commonwealth: From the beginning of overseas expansion to the contemporary Commonwealth. 2 hours.

35. History of England: From 1485 to the present. 3 hours.

36. Modern European History: From the middle of the sixteenth century to the Second World War. 3 hours.

37. History of Russia — U.S.S.R.: The political, economic and cultural development, social conditions, territorial expansion and foreign relations. 3 hours.

44. History of the United States: The colonial period (general survey only), the Revolution and political and social history to the present. 3 hours.

Honors Courses

231. History of Canada: from the beginning of the French Regime 3 hours.

236. Europe and England in the 16th and 17th centuries: Seminar. 3 hours.

244. History of the United States from the Colonial Period. 3 hours.

333. *The British Empire and Commonwealth:* *from the beginning of overseas expansion to the contemporary Commonwealth.* 3 hours.

335. Europe and England, 1715-1914: Seminar. 3 hours.

337. History of Russia and Central Europe. 3 hours.

339. History of the Far East: Not offered 1963-64. 3 hours.

357. Ancient Civilization: the Near East, Greece and Rome, identical with Latin 257 and Greek 257. 3 hours.

420. The High Middle Ages: Charlemagne to the end of the 13th century. 3 hours.

431. Canada in the 19th and 20th centuries: empasis on selected topics and seminar discussion. 3 hours.

444. The United States: selected topics and seminar discussion. 3 hours.

452. *English Constitutional History:* *a study of the development of the English constitution* from the Anglo-Saxon monarchy. 3 hours.

456. Modern Europe since 1914: lectures and seminar. Not offered 1963-64.

460. The transition from Medieval to Modern Civilization: the economic, social, political, religious and cultural developments of the period from 1300 to 1600. Not offered 1963-64. 3 hours.

400. Thesis seminar: with permission of the Head of the Department of History.

HOME ECONOMICS

For faculty and courses see the Brescia College section.

JOURNALISM

University College

Professor:

John Leslie Wild, B.A.; M.A. Michigan, Head of the Department

Associate Professor:

Earle Beattie, B.A. Manitoba; B. Ed. Toronto

Lecturers (Part-time):

Thomas Hugh Bremner
John K. Elliott, B.A.
Arthur Rutherford Ford, B.A., LL.D. Toronto
James M. O'Neail, B.A.
Earl Hubert Slater, Q.C.; B.A. Toronto; Barrister-at-Law, Osgoode
James John Talman, B.A., M.A.; Ph.D. Toronto; F.R.S.C.;
University Librarian
C. Robert Turnbull

Courses

Students should be proficient in typewriting by the beginning of the second year.

20. Introduction to Journalism: A survey of News Media with emphasis on the Daily newspaper; *newswriting, reporting; lectures, workshops, field trips, seminars on current events.* 3 hours.

Honors Courses

250. *Interpretive* News Writing and Reporting: Reporting specialized fields, public affairs, social, economic and political news. 6 hours.

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.

270. Pictorial Journalism: Principles of news photography; picture editing; the photo-story; magazine illustration; layout; engraving process. Not a course in photography. 2 hours: half course.

351. Newspaper Production: Newsroom organization; copy editing; page makeup; survey of the mechanical phases of newsaper production. 3 hours: half course.

355. History of Journalism: A survey of the development of journalism in the British Isles, United States and Canada. 2 hours: half course.

365. Editorial Writing: Editorial policy; the editorial and the background article; research methods; editorial page feature; the signed column; ethical standards of the press. 1 hour: half course.

375. Feature and Magazine Article Writing: Feature writing for newspapers; magazine article writing, including a study of marketing and manuscript preparation. 2 hours: half course.

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; interpretive reporting; world news editing and reporting. 10 hours.

451. Communication Problems: Semantics, propaganda, seminars on problems in special fields; world news editing and reporting. 4 hours.

455. Radio and Television News and Documentary Writing: Comparative study of newspaper, radio and television writing and news treatment; preparation of newscasts; documentary news broadcasts; interviewing; the actuality broadcast; television news and documentary scripting. 3 hours.

PURE AND APPLIED MATHEMATICS AND ASTRONOMY

University College

Professors:

Gordon Richey Magee, B.A.; M.S., Ph.D. Chicago, Head of the Department
John Henry Blackwell, B.Sc. Melbourne; M.Sc., Ph.D. (Honorary Lecturer, Physics)
Randal Hudie Cole, B.A., M.A., Ph.D. Wisconsin
William Henry Wehlau, A.B., Ph.D. California

Associate Professors:

George Elliot Cross, B.A., M.A. Dalhousie; Ph.D. British Columbia
James Sanders, B.A. Toronto; M.A. Queen's; Ph.D. Syracuse
James Davis Talman, B.A. M.Sc.; Ph.D. Princeton

Assistant Professors:

Mir Maswood Ali, B.Sc., M.Sc. Dacca; M.S. Michigan; Ph.D. Toronto
Chung Nim Lee, B.A. Seoul; M.A., Ph.D. Virginia
Morton A. H. Nerenberg, B.Sc. McGill

Lecturers:

John Francis Hart, B.A., M.A., Ph.D. Toronto (Honorary Lecturer)
Donald O. McKay, B.A., M.A., Ph.D. Buffalo
John A. Mereu, B.A.; F.S.A. Society of Actuaries

Instructors:

Anne E. Bode, B.A., M.A. Saskatchewan

Research Assistants:

Roger John Hosking, B.Sc. Adelaide
Michel Kraidy, Licence (Mathematics and Physics) Beirut

Teaching Fellow:

A.K. Md. Ehsanes Saleh, B.Sc. Comilla Victoria; M.Sc. Dacca; M.A.

COMPUTER SCIENCE

Associate Professor:

John Francis Hart, B.A., M.A., Ph.D. Toronto; Head of the Computer Science Department.

Assistant Professor:

Satoru Takasu, B.Sc., M.Sc., D.Sc. Tokyo

Lecturer:

Neil D. Jones, B.A. Southern Illinois

Demonstrator:

W. D. Denton, C.A.

Mathematics Courses

20. Introductory College Mathematics: An introduction to calculus; a study of logic, set theory, probability theory, and the algebra of vectors and matrices. 3 hours.
Prerequisite: Grade XIII Mathematics (any two papers), or equivalent mathematics.

24. Introductory Calculus: Introduction to differential and integral calculus with applications. 3 lectures and 1 tutorial hour.
Prerequisite: Grade XIII Mathematics (three papers), or equivalent.

27. Calculus: For first year Engineering Science. 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. 4 lectures and 1 tutorial hour.
Prerequisite: Grade XIII Mathematics (three papers), or equivalent.

30. Algebra: Introduction to modern algebra: rings, domains, fields, groups, polynomials, matrices, determinants.
Prerequisite: Mathematics 20 or 24. 3 hours.

32. Analytic Geometry: The general conic and pencils of conics; geometry of three dimensional space.
Prerequisite: Mathematics 20 or 24. 3 hours.

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. 3 hours.

35. Statistics: Standard probability distributions; sampling distributions; estimation; test of hypothesis; analysis of variance; regression and correlation.
Prerequisite: Mathematics 20 or 24. 3 hours.

40. Elementary Theory of Numbers: Euclidean algorithm, congruences, indices, continued fractions, Gaussian integers, partitions and Diophantine equations.
Prerequisite: Mathematics 20 or 24. 3 hours.

HONORS COURSES

250. Algebra and Geometry: Vector and matrix algebra, determinants linear transformations, linear equations, canonical forms. Applications to bilinear forms, quadratic forms, geometry, systems of linear differential equations.

Prerequisite: Mathematics 20 or 24. 3 hours.

256. Calculus and Differential Equations: Uniform continuity, Riemann integral, indeterminate forms, improper integrals, Taylor's formula; functions of several variables, partial differentiation, multiple integration; cylindrical and spherical coordinates; line and surface integrals, Green's Theorem, Stokes' Theorem; infinite sequences and series; uniform convergence; ordinary differential equations.

Prerequisite: Mathematics 24. 4 hours.

277. Calculcus and Differential Equations: For second year Engineering Science and for the Natural Sciences. Partial differentiation; multiple integrals; functions of a complex variable; ordinary differential equations.

Prerequisite: Mathematics 24 or 27. 3 hours.

All 300 and 400 mathematics courses are 3 hour courses. For each 300 course, the prerequisites are Mathematics 250 and 256, or consent of instructor. For each 400 course, consent of the instructor 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.

350. Algebra I: Introduction to abstract algebraic systems; elementary theory of groups, rings, fields and vector spaces; establishment of real and complex fields.

351. Geometry I: Groups of transformations of the Euclidean plane, inversion and coaxal systems; the projective plane.

353. Finite Differences: Advancing differences, interpolation, divided differences, central differences, inverse interpolation, summation, approximate integration.
Investment: Compound interest, nominal and effective rates of interest and discount, annuities-certain, bonds.

355. Statistics I: Standard distributions; sampling distributions; sampling from finite population; estimation; test of hypothesis; design of experiments; analysis of variance and regression analysis; non-parametric methods; sequential analysis.

356. Analysis I: Real variables: sequences, improper integrals, series, Fourier series, Fourier integral, Fourier transform, Riemann-Stieltjes integral.
Complex variables: integration and differentiation of a function of a complex variable, Taylor and Laurent series, conformal mapping, residues.

363. Numerical Analysis: Accuracy of approximate calculations, interpolation, summation of series, numerical differentiation and integration, solution of numerial algebraic and transcendental equations, numerical solution of ordinary differenial equations, least squares and harmonic analysis, numerical solution of simultaneous linear equations.

377. Engineering Mathematics I: This is a general course in Applied Mathematics for third year engineering students. Topics covered include: introduction to numerical analysis and computer programming; linear algebra; ordinary linear differential equations with variable coefficients and special functions; elementary probability theory.

First term: 2 lectures, 1 laboratory hour.
Second term: 3 lectures.

378. Applied Mathematics I: Theory of ordinary differential equations and special functions; properties and solution of some partial differential equations of mathematical physics; Sturm-Liouville problem; calculus of variations; orthogonal function expansions.

445. Theory of Probability: Measure and integration, foundations of probability theory, various discrete distributions, random walks, laws of large numbers, generating functions, branching processes, recurrent events, finite Markov chains, simple time-dependent stochastic processes.

450. Algebra II: Elementary factorization theorems; field theory; Galois theory; groups with operators, semi-simple rings, general factorization theorem.

452. Geometry II: The algebraic treatment of projective geometry of one and two dimensions; the properties of conic loci, conic envelopes and linear systems of conics; higher correspondences; apolarity; the theory of invariants and transformations of the plane.

455. Statistics II: Measure and integration, Lebesgue measure and other additive set functions, Lebesgue-Stieltjes and Riemann-Stieltjes integrals for n variables, Fourier integrals; matrices, quadratic forms, Beta and Gamma functions, orthogonal polynomials; foundations of probability and statistics, distribution theory, central limit theorems, regression and correlation in n variables, sampling, theory of estimation, tests of significance, analysis of variance.

456. Analysis II: Complex variables; calculus uf residues, conformal mapping and univalent functions, analytic continuation, maximum modulus principle, entire and meromorphic functions, Riemann surfaces; topological considerations.

Real variables: Lebesque measure and the Lebesque integral.

458. Quantum Mechanics: Axioms of Quantum Mechanics; commutation relations and correspondence principle, Heisenberg and Schroedinger representations; solutions of Schroedinger equation; angular momentum; perturbation theory.

460. Introductory Topology: Metric spaces, topological spaces, connectedness, compactness, separation axioms, Tietze extension theorem; simplical complexes, classifications of compact 2-manifolds, homotopy classifications of maps of n-spheres, theorem of Borsuk-Ulam; homology groups.

463. Life Contingencies: The mortality table, commutation functions, annuities, insurances, net premiums, reserves, gross premimuc, non-forfeiture values, combination benefits, joint annuities, last survivor annuities, generalized multiple life annuities, contingent assurances, rtversionary annuities, population tables, multiple decrement tables.

464. Ordinary Differential Equations: Existence theorems; general linear equation, matrix systems, adjoint systems, Green's function, expansion problems; stability theory.

468. Tensor Calculus: Theory of curves, Serret-Frenet formulae; curvilinear coordinates, first and second fundamental forms, geodesics, Codazzi quations, Gauss-Bonnet theorem. Introduction to differential geometry in the large. Introduction to n-dimensional Riemannian geometry and tensor analysis.

470. Foundations of Mathematics: History of mathematics, 1 hour per week. Mathematical logic, 2 hours per week (taken as Philosophy 551).

477. Engineering Mathematics II: A sequel to Mathematics 377, consisting of the following topics: vector calculus; orthogonal functions and Fourier series; introduction to partial differential equations; numerical analysis and computer programming; applications of computer science to problems in engineering design.
First term: 3 lectures
Second term: 1 lecture, 2 laboratory hours.

478. Applied Mathematics II: This course is concerned basically with techniques of problem solution and their applications in Applied Mathematics. Topics discussed vary from year to year and in depth but usually include the following:- Integral transforms; integral equations; difference equations: generalised functions; special application of complex variable theory; approximation methods.

Prerequisites: Mathematics 356, 378, Physics 350.

498. Mechanics of Continua: An introduction to the theories of hydrodynamics and/or elasticity.

ASTRONOMY COURSES

29. Descriptive Astronomy: Systems of coordinates; identifcation of stars and constellations; the solar system; normal, variable and binary stars; structure of our galaxy; other galaxies; observations with the 10-inch refractor of the Hume Cronyn Observatory. **3 hours.**

HONORS COURSES

229. Introduction To Astronomy: Coordinate systems; the solar system; motions and physical properties of the planets, normal, variable, and binary stars; stellar motions; nebulae; structure of our galaxy; other galaxies. Occasional evening meetings. 3 hours.

359. Celestial Mechanics and Practical Astronomy: Central orbits, the two-body problem, determination of orbits by Laplace's and Gauss' methods, the n-body problem, perturbations. A brief treatment of precession and nutation; determination of positions of astronomical bodies. 3 hours.

459. Astrophysics: An introduction to the study of binary stars, stellar atmospheres, stellar structure and interstellar matter. Practical problems in the analysis of astronomical data relating to these topics will be included. 3 hours.

COMPUTER SCIENCE COURSES

313. Elements of Computer Logic and Programming: This is an introductory course in the logic of computers, theory of automata, and programming.

Prerequisite: short course in ALGOL. 2 lectures, 2 laboratory hours.

403. Introduction to Computing Algorithms: Development of algorithmic methods for solving mathematical problems on digital computers.

Prerequisite: short course in ALGOL. 2 lectures, 2 laboratory hours.

413. Non-Numeric Computing: Translation of algebraic languages; mathematical machines and algorithms: recursive functions, formal language structures.

Prerequisite: Computer Science 313. 2 lectures, 2 laboratory hours

MILITARY STUDIES

Credit for military studies as a half-course may be obtained by serving for three years, including summers, with 80 per cent attendance at lectures and parades. See also page 12.

MUSIC

See The College of Music Section. Music courses ending in "O" are available to arts and science students.

PHILOSOPHY

University College

Professor:

Allison Heartz Johnson, B.A. Mt. Allison; M.A., Ph.D. Toronto; F.R.S.C.; Head of the Department

Associate Professor:

John Andrew Bruce, B.A., M.A., Ph.D. London
Harold Joseph Johnson, B.A. Alfred; Ph.D. Chicago

Assistant Professors:

Stanley George French, B.A. Carleton; M.A. Rochester; Ph.D. Virginia
Perry Ronald Robinson, B.A., M.A.; Ph.D. London

Lecturers:,

Richard Norton Bronaugh, B.A. Oregon; M.S., Ph.D. Wisconsin
Martha Elaine Williams, B.S. William and Mary; M.A., Ph.D. Bryn Mawr

Teaching Fellows:

Barbara Houston, B.A.
Geogre Forsyth Todd, B.A., M.A.

Middlesex College

Professor:

Robert E. Butts, A.B., A.M. Syracuse; Ph.D. Pennsylvania; Acting Head of the Department

Associate Professor:

John Whitney Davis, B.A., M.A., Ph.D. Boston, Head of the Department
Wilbert Cameron Henry, B.A., M.A.; Ph.D. Toronto

Assistant Professors:

Peter Adam Angeles, B.A., M.A., Ph.D. Columbia
Irving Block, B.A., Vanderbilt; M.A., Ph.D., Harvard

Teaching Fellows:

Russell Martin, B.A.
Helen Story, B.A.

Courses

20. Philosophy and Human Problems: This course is concerned with ethical, logical, aesthetic, religious, educational and political types of problems. Its purpose is to help students to understand what is involved in these problems and to appreciate some of the solutions provided by the great thinkers of the past and present. This course is for freshmen. 3 hours.

30. Basic Philosophical Literature: A critical survey of a selected group of Philosophical classics, ancient and modern. 3 hours.

31. Logic and Problems of Knowledge: First term — Logic: meaning and definition, formal logic, verification of knowledge and scientific method; second term — Problems of Knowledge, with particular reference to religion. 2 hours.

32. Philosophical Theory: Readings in selected philosophical classics, with an emphasis on those which form the background of scientific theory. (This course should not be selected by those who are taking or have taken Philosophy 20 or 30.) (not offered in 1963-64). 2 hours.

34. Logic and Philosophy of Science: An introduction to problems in logic and the philosophy of Science, designed primarily for pre-medical students. Not to be selected by those who have taken, or are taking Philosophy 31. 2 hours.

35. Aesthetics: A study of aesthetic theory, criticism, and general theory of value
Prerequisite: One course in Philosophy. 2 hours

36. Ancient Philosophy: A survey of the principal developments from the Presocratics (600 B.C.) to Plotinus (250 A.D.) and of their contributions to our cultural heritage. Primary emphasis will be placed on the critical reading of selected original sources.
Prerequisite: One course in Philosophy. 2 hours.

42. Introductory Ethics: A critical inquiry into the possibility and nature of ethical standards, the methods by which they may be known, and their applications to concrete problems of personal and social morality.
Prerequisite: One course in Philosophy. 2 hours.

43. Philosophy of Religion: The nature of religion; the growth of religious experience; important types of religious philosophy. 2 hours.

44. Principles and Problems of Philosophy: Philosophical problems, related to the special interests of members of the class, will be discussed.
Prerequisites: Two courses in Philosophy and the consent of the Head of the Department. 2 hours.

47. Early Modern Philosophy: A critical examination of basic philosophical literature from the 16th, 17th and 18th centuries.
Prerequisite: One course in Philosophy. 2 hours.

48. Contemporary Philosophy: A critical study of the following 20th century philosophers: Dewey, Bergson, Whitehead. There will also be an examination of logical positivism and existentialism.
Prerequisite: Philosophy 20 or 30. 2 hours.

Honors Courses

The following courses are identical with the Pass courses indicated, except that additional assignments will be required: 231 (31), 443 (43).

230. Basic Philosophical Literature: An examination of the principal problems and issues, methods and attitudes, theories and solutions, terms and concepts, of philosophy, as exemplified in selected philosophical classics. For Honors students in any department. 3 hours.

335. Aesthetics and Value Theory.

336. Ancient Philosophy.

347. Early Modern Philosophy.

350. Philosophical Texts: An examination of specified source materials in Greek and Modern Philosophy; critical works will also be studied. 2 hours.

444. Problems of Philosophy.

448. *Contemporary* Philosophy.

456. Seminar in Plato and Aristotle.
Prerequisite: Philosophy 336. 2 hours.

457. Modern Philosophy: Later modern philosophy with particular emphasis on the philosophy of the 19th century.
Prerequisite: Philosophy 347. 2 hours.

462. Ethics: A critical study of moral problems and theories. The course will be based on reading selected from the classics of ethical literature from Aristotle to the present. 2 hours.

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.
Prerequisite: Philosophy 336.

PHYSICAL, HEALTH AND RECREATION EDUCATION

University College

Professor:
Willard Joseph L'Heureux, B.A.; M.A. Michigan; Head of the Department

Associate Professors:
Elfrida M. Berzins (Mrs.), M.M. Riga
John Russell Fairs, B.Sc.; M.A. Columbia.
Michael Yuhasz, B.A., M.S., Ph.D. Illinois

Assistant Professor:
George Arthur Wearring, B.A.; M.S. Southern California

Lecturers:
Mary Lou Dresser, B.A.
Robert Barrie Eynon, B.A., M.S., Illinois
Gerald I. Gonser, B.A., M.A. Michigan
Helen Vieno Kunkel (Mrs.), B.A.
John Pius Metras, Director of Intercollegiate Athletics (Special Lecturer)

Lecturers (Part-time):
William John Pillsworth, B.A.; M.A. New York
Rosemary M. Dawson (Mrs.)

Instructors:
Murray McNie

Courses

20. The course will consist of instruction in the theory and practice of activities selected from any **two** of the groups listed below. Not all the activities will be offered each year.

No credit will be allowed until both P.E. 20 and 30 are completed.

Incoming students who are unable to swim are to elect Beginning Swimming.

Students intending to proceed into Honors Physical Education should register in P.E. 20.

Activity Groups:

Personal Health: Health problems in student life, including remedial work and weight control.

Individual and Dual Sports: Badminton, tennis, golf, squash and handball (men), archery.

Physical Fitness: Weight training (men), trampolining (men), gymnastics.

Combatives: Personal defense (men), wrestling (men), fencing.

Aquatics: Beginning swimming, aquatic fitness and diving.
field games (women).

Team Games: Basketball, volleyball, hockey, soccer (men), touch football (men),

Dance (women).

30. Advanced theory and practice of activities selected from any two of:

Individual and Dual Sports: Badminton, tennis, golf, archery (women).

Physical Fitness: Gymnastics, trampolining (men).

Combatives: Wrestling (men), fencing.

Aquatics: Royal Life Saving (Bronze), Synchronized swimming, Red Cross Water Safety (Instructor's).

Team Games: Basketball, volleyball, field games.

Dance (women).

Prerequisite: Physical Education 20. full course.

Honors Courses

251. Team Games and Individual Activities: The theory and mechanics of activities as instruments in the education of the individual; the development of personal skills in the following: Men—aquatics, basketball, football, gymnastics, track and field, volleyball, group games and dance. Women—aquatics, archery, basketball, dance, field games, group games, gymnastics, track and field, and volleyball.
2 lectures and 4 laboratory hours.

253. School Health Education: An approach to intelligent planning for healthful living; the study of personal health from the standpoint of Biology, Psychology and Nutrition; community and institutional public health; methods and materials of school health teaching. 3 lectures.

258. *History of (and Introduction to) Physical, Health and Recreation Education:* Development of these three sections of education; their inter-relationship in modern society; their connection with learning; the social significance of competitive games and sports; contemporary developments through public and private agencies.
3 lectures.

351. Team Games and Individual Activities: A continuation of P.H.R.E. 251 to continue to a higher level of development the more complex skills of physical education activities; tactics and strategy of competitive play are studied.

Prerequisite: P.H.R.E. 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. 2 lectures.

354. Functional Human Anatomy:

1 lecture and 1 laboratory hour: half course.

366. Methods and Materials: A theory and laboratory course to acquaint the student with the program of physical education, selection of activities, planning, sources of materials and evaluation; analysis of materials in fundamental, individual and dual games, rhythmics, gymnastics, and team games.

3 lectures (laboratory as required).

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.; personal performance in individual activities is continued to a higher level of skill.

Prerequisite: P.H.R.E. 351. 1 lecture, 4 laboratory hours.

453. Kinesiology, Corrective Physical Education, Athletic Injuries: Essential facts of human anatomy and physiology, as they pertain to corrective exercise; the care and prevention of athletic injuries; analysis of complex body movements.

2 lectures, laboratory as required.

454. Human Physiology: Trends in investigations of the physiology of physical activity, with implications for physical and health education.

1 lecture, 3 laboratory hours.

456. Seminar: The interpretation of physical education in its relationship to education; ends and means of physical activities in their philosophical context; principles underlying program; a study of the scientific foundations of physical education; presentation of senior thesis, supervised observation and field work.

3 hours.

457. Physical Fitness Appraisal and Guidance: The scientific basis of physical fitness appraisal in the areas of anthropometry, motor and organic fitness; the construction and administration of fitness and sports skills tests; descriptive statistics in the handling of data for evaluation, grading and classification.

2 lectures and 2 laboratory hours.

PHYSICS

University College

Professors:

Peter Allan Forsyth, B.A., M.A. Saskatchewan; Ph.D. McGill; F.R.S.C., Head of the Department

Ray Leroi Allen, B.A., M.A. Mt. Allison

Eric Brannen, B.A., M.A. Toronto; Ph.D. McGill

Ralph William Nicholls, B.Sc., Ph.D., D.Sc. London; A.R.C.S.

Associate Professors:

A. M. I. A. W. Durnford, B.A., M.A.; Ph.D. Toronto
Peter Arthur Fraser, B.Sc.; M.Sc. Wisconsin; Ph.D.
Donald Ross Hay, B.Sc., M.Sc.; Ph.D. McGill

Assistant Professors:

Charles Murray Carmichael, B.Sc., M.Sc., Ph.D.
Harry Ian Symons Ferguson, B.Sc., M.Sc., Ph.D.
James Arthur Fulford, B.Sc., Ph.D.
Gordon Frederick Lyon, B.A., M.A., Ph.D. Saskatchewan
Graham Stewart Rose, B.Sc., Ph.D. Birmingham
Thomas William Wallace Stewart, B.Sc., M.Sc.; Ph.D. University College London
Eric Harold Tull, B.A.Sc. British Columbia; M.Sc.; P.Eng.

Lecturer:

Rama Chandra Murty, B.Sc. Andhra; M.Sc., Dip. Lib. Bombay; Ph.D.

Honorary Lecturers:

John Henry Blackwell, B.Sc. Melbourne; M.Sc., Ph.D. (Professor of Mathematics)
John Campbell Forrester MacDonald, B.A., M.A. British Columbia; Ph.D. Toronto

Part-time Lecturers:

Alan Edward Beck, B.Sc. London; Ph.D. Australian National University
Heinrich Roman Froelich, B.Sc. Berlin; M.Sc., Ph.D.
Tadeusz Jan Ulrych, B.Sc. London; M.Sc., Ph.D. U.B.C.

Research Associates:

William Ross Jarmain, B.A.; M.A. Wisconsin
David Christopher Tyte, B.Sc., Ph.D. London; A.R.C.S., D.I.C.

Demonstrators:

Patricia Mary Chefurka, B.Sc. Manitoba; M.S. Montana State College; Alan Stephen Judge, B.Sc. Battersea College of Technology; Rafael Louis Kosan, B.Sc. Queen's; Marvin Harold Sherebrin, B.Sc. Manitoba; John Aris Slankis, B.A.Sc. Toronto.

Research Fellows, Scholars and Part-Time Demonstrators:

Gilbert Everett Dares, B.Sc., Acadia; Noel Arthur Doughty, B.Sc.; M.Sc. Victoria University of Wellington; James Philip Fallona, B.Sc., M.Sc.; Fouad Kwam Said Hussein Fanaki, B.Sc. Alexandria; M.Sc.; Shirley Ann Haycock, B.Sc.; Lance Thomas Hodges, B.A. Andrews; Robert Willoughby Johnston, B.Sc.; Isobel Stewart Lee, B.Sc. St. Andrews; Robert Peter Lowe, B.Sc.; Hans Carl Martin, B.Sc. Manitoba; M.Sc.; Donald James McEwen, B.Ed., B.A., M.A. Saskatchewan; Andrew Thomas McGregor, B.Sc., M.Sc.; Archibald Kenneth McQuillan, B.Sc.; Frederick Jonh Morgan, B.Sc., M.Sc. British Columbia; Mary Frances Murty, B.Sc. (London), A.R.C.S.; Frank Henry Palmer, B.Sc. U.B.C.; Susan Hopkins Reader, B.Sc. Toronto; Delbert Walter Rice, B.E., M.Sc. Saskatchewan; Victor Edwards Sells, B.Sc.; Mohan Singh Sud, B.Sc., M.Sc. Punjab; Ross MacLennan Turnbull, B.Sc.; Harold Edward Turner, B.Sc.; Roy Albert Wentzell, B.Sc. Acadia; M.Sc.

Courses

20. Mechanics and Heat: Lectures, demonstrations and laboratory exercises covering a selection of topics. 2 lectures, 3 laboratory hours.

21. Physical Science: Lectures, lecture demonstrations, and laboratory assignments designed (1) to present a historical review of the development of physical science; (2) to describe some of the modern practical applications of physical science; and (3) to outline some present trends in science. Either Chemistry 21 or Physics 21 may be taken for credit but not both.

2 lectures, 2 laboratory hours.

26. Introduction to Modern Physics I: The first year of a two year sequence designed to present the qualitative ideas and simpler quantitative results of microscopic physics. The emphasis is laid on the fundamental laws of conservation, and the interaction of radiation with matter. For First Year Engineering Students.

2 lectures, 3 laboratory hours.

33. The Physics of Music and Sound: An introduction to acoustics with applications to the production and transmission of musical sounds; including — wave motion; sound waves and their characteristics; vibratory sources of sound; harmony and scales; hearing; electronic recording, reproduction and synthesis of sound; acoustics of buildings and building materials. Open only to students in the College of Music.

3 lecture-laboratory hours.

34. General Physics: A study of the laws and principles of light, sound, electricity, magnetism, and thermionics.

Prerequisite: Physics 20 or 21.

2 lectures a week; 3 laboratory hours in alternate weeks.

46. Atomic Physics: (1) A review of the laws and theories of classical physics; (2) The development of physical science from the late 19th century to the present.

Prerequisites: Physics 34 and Mathematics 24 (this may be taken contemporaneously). 3 lectures.

Honors Courses

204. General Physics: A study of the laws and principles of light, sound, electricity, magnetism, thermionics and atomic physics.

Prerequisite: Physics 20. 2 lectures, 3 laboratory hours.

204M. General Physics II: For second year Pre-Medical students. The laws of electricity, magnetism, and electromagnetic radiation. These are followed by an historical development of our knowledge of atomic and nuclear processes and associated radiations. Applications to the field of medicine are discussed.

2 lectures a week, 3 hours laboratory in alternate weeks.

216. Introduction to Modern Physics II: The second year of a two-year sequence designed to follow Physics 26. The quantum theory and special theory of relativity are introduced with applications to nuclear and solid state physics. For Second Year Engineers. 3 lectures, 3 laboratory hours.

250. Mechanics: An introduction to vector calculus; motion of a particle and systems of particles; Harmonic Motion (simple, damped, forced); central orbits; dimensional analysis. 2 lectures.

251. Topics in Numerical Analysis: An introduction to numerical methods, with emphasis on the presentation and treatment of experimental data.

2 lectures, 2 laboratory hours.

256. Light, Acoustics, Electricity and Magnetism: An introductory course in geometrical and physical optics; acoustics; electrostatics; magnetism; and electromagnetism. 3 lectures, 3 laboratory hours.

350. Advanced Mechanics: Integral theorems of Vector Analyses and their applications; virtual work and generalized co-ordinate formulation for statics and dynamics; the variational principles of D'Alembert and Hamilton; Lagrange's and Hamilton's equations of motion and their applications. 2 lectures.

351. Methods of Mathematical Physics I: An introduction to the methods of solution of the common partial differential equations of Physics in simple co-ordinate systems and appropriate to various boundary conditions. The eigenvalue and eigenfunction approach is emphasized, and, in particular, the physical applications of Fourier series are treated in detail. 3 lectures.

353. Thermodynamics and Properties of Matter: A treatment of the laws of thermodynamics and their applications; heat engines; change of phase; kinetic theory of gases; thermodynamics of radiation; elementary statistical mechanics. Theoretical discussion of properties of fluids and solids. 3 lectures.

356. Electronics: A treatment of the underlying principles of electronic conduction in vacuum tubes, gaseous tubes and semi-conductor devices; an analysis of rectifying circuits and amplifiers. 2 lectures, 3 laboratory hours.

359. Laboratory: Designed to give training in the techniques of advanced physics. 6 laboratory hours.

366. Electronics: Similar to 356.
2 lectures a week, 3 laboratory hours a week for 1 term.

376. Electronics: An introduction to physical electronics, including the treatment of charged particles moving in electric and magnetic fields; thermionic emission; conduction in metals and semiconductors; photoelectricity; vacuum tubes and transistors; electrical discharge in gases; rectifier and amplifier circuits; sinusoidal oscillators. 3 lectures.

377. Circuit Analysis: An introduction to electric circuit analysis, commencing with simple transient circuits, but chiefly concerned with the steady state A.C. method, including a brief treatment of active elements in amplifier circuits. 3 lectures.

379. Laboratory and Tutorial: Designed to accompany and supplement the lecture work of the Third Year Radio Physics option.
6 laboratory hours, 3 tutorial hours: double course.

417. Communication Circuits: A study of high-frequency transmission line theory; Maxwell's equations and their application to antenna and wave-guide systems; radio system modulation and detection; power amplifiers; and introduction to radio noise theory. For Engineering Students. 2 lectures.

454. Advanced Optics and Spectroscopy: The principle of superposition of amplitudes; Huygens' Principle; wave packets and line profile; advanced aspects of interference, diffraction and polarisation; introduction to atomic and molecular spectroscopy. 2 lectures.

455. Electromagnetic Theory: A vector treatment of the theory of the static and dynamic electromagnetic fields, based on the fundamental experiments. 2 lectures.

456. Atomic and Nuclear Physics: A course designed to give a thorough knowledge of the fundamental particles and of the experimental basis for modern concepts of atomic and nuclear structure. 2 lectures.

457. Introductory Quantum Mechanics: The course stresses the physical ideas behind wave-particle duality, wave packets, operational definitions. Schroedinger's equation is solved for barrier problems, tunnelling, etc. The operator formalism and postulatory basis of Quantum Mechanics is developed. 2 lectures.

458. Seminar: The presentation of a scientific paper before students and members of the faculty, and the writing of an essay upon an assigned topic.
1 hour: half course

459. Laboratory. Designed to accompany the lecture work of the fourth year Physics and Mathematics. Emphasis is laid upon individuality of work and resourcefulness. As far as possible, training is given in research methods.
12 laboratory hours: double course.

476. Methods of Mathematical Physics II: A continuation of Physics 351 with particular emphasis on the application of integral transform methods and the theory of the complex variable to the differential, integral, partial differential, and difference equations of the physical sciences. 2 lectures.

477. Communications Circuits: An extension of Physics 376 and 377; the analysis of power amplifiers; oscillator circuits including microwave oscillators; high frequency transmission lines; modulation and detection; wave-guide and antenna theory; some aspects of the theory of noise. 3 lectures.

479. Laboratory: Designed to accompany the lecture work of the fourth year Radio Physics option. The course consists of experiments illustrating various aspects of electronics. In addition, each student is required to complete the design and construction of at least one project of his own. 12 hours: double course.
For Engineering students 6 hours: full course.

POLITICAL SCIENCE

Middlesex College

Professor:
Henry Bertram Mayo, B.A., M.A., D. Phil. Oxon., F.R.S.C., Head of the Department.

Associate Professors:
Robert Nathaniel Kelson, B.A., M.A. Boston; Ph.D. Duke.
Peyton Vaughan Lyon, B.A. Manitoba; M.A., D. Phil. Oxon.

Assistant Professors:
T. Robert Sansom, B.A. New Brunswick; Ph.D. London.

Lecturer:
Bohuslav Bohumil Kymlicka, B.A. British Columbia; M.A. Columbia.

COURSES

Politics 20 is a prerequisite for all courses in Politics unless permission of the Department is obtained.

20. Government of Canada: An introduction to democratic theory and practice primarily through the study of Canadian political institutions and processes.
3 hours.

31. International Politics: A study of the factors governing international relations; an analysis of certain current problems to illustrate the principal concepts of international politics and diplomacy. 3 hours.

37. History of Western Political Thought: A study of the major poltical thinkers from Plato to Mill and Marx. 3 hours.

42. Britain and the Commonwealth: A study of the governmental institutions and political processes of the United Kingdom; a survey of the politics of Australasian, Asian and African Commonwealth Countries; the nature and function of the Commonwealth relationship. 3 hours.

44. American Government and Politics: A study of the American Constitution, institutions of government and political processes. 2 hours.

48. Comparative Foreign Governments: A study of the governmental institutions and political processes of leading West European and Communist countries, followed by an analysis of particular political institutions on a comparative basis. 3 hours.

Honors Courses

Politics 231, 242, 244, 337, 348 are identical respectively with 31, 42, 44, 37, 48 except that additional assignments will be required in Honors courses.

350. Advanced Canadian Government: An examination of selected problems in Canadian government such as the constitutional and financial aspects of federalism; political parties and pressure groups; and provincial government. 3 hours.

434. Contemporary Political Theory: A study of the chief political doctrines of the present day, such as communism, socialism, fascism, and the theories associated with democracy; an analysis of concepts such as the state, liberty, and authority. 3 hours.

451. International Law and Organization: A study of the workings of the United Nations, NATO, the West European Communities and similar organizations; an introduction to international law and its relevence to contemporary problems such as arms control.
Prerequisite Politics 31 or 231. 3 hours.

462a. Public Administration: The basic principles of public administration in the modern state, including organization, procedures and the relation of administration to policy making. 2 hours.

462b. Local Government: A study of the organization, functions and power of local government in Canada, and especially in Ontario, with emphasis on selected problems such as provincial-municipal relations. 2 hours.

480. Seminar: Contemporary political problems and the implications for political science of developments in other fields such as law, economics, sociology and psychology. **2 hours.**

PSYCHOLOGY

Middlesex College

Professors:

Gordon Haslam Turner, B.A., M.A., Ph.D. Toronto
Mary Jean Wright, B.A.; M.A., Ph.D. Toronto, Head of the Department

Associate Professor:

Jaroslav Havelka, M.A. Masaryk; Ph.D. Milan; M.Sc. McGill
Leola Ellen Neal, B.A., M.A.; Ph.D. Toronto; (Dipl. Clin.); Dean of Women; (part-time)
John Paul, B.A., M.A., Ph.D. Toronto
Morris Modris Schnore, B.A., M.A.; Ph.D. McGill

Assistant Professors:

Robert Charles Gardner, B.Sc. Alberta; M.Sc., Ph.D. McGill
William John McClelland, B.A., M.A. Toronto; Ph.D. London
Allan Urho Paivio, B.Sc., M.Sc., Ph.D. McGill
Frank William Ralph Taylor, B.A., M.A., Ph.D. Toronto

Lecturers:

John Peter Denny, B.A. Toronto; Ph.D. Duke
David Gibson, B.A., M.A., Ph.D. Toronto (part-time)
Harold Oliver Lobb, B. A., B. Ed., M. Ed. Saskatchewan
Jason Walker McCallum, B.A.; M.A. Toronto; Ph.D. Ottawa (part-time)
Reinhold Rhadamanth Reise, B.A., M.A. (part-time)
Norah K. Stevens, B.A., M.A. Toronto (part-time).

Teaching Fellow:

Robert Douglas Hare, B.A., M.A. Alberta

Courses

Psychology 20 or 21 is ordinarily prerequisite to all other courses in psychology.

20. **Introduction to Psychology:** Problems and Methods; individual differences and their assessment; learning; memory; thinking; sensation and perception; motivation; emotion; personality. Open only to freshman students. 3 hours.

21. **Principles and Methods:** A discussion of the motives, emotions and intellectual abilities of human beings special emphasis on the effective use of these factors in private and social activities. Open only to senior students, including premedical students, who have neither had nor are taking Psychology 20.

31. **Theories of Personality:** Representative theoretical interpretations of personality development and dynamics. By 1964-5 this course will be prerequisite for Psychology 48. 2 hours.

32. **Motivation and Learning:** The causes of behavior and the modification of behavior through experience. A survey of current theory and research in motivation and learning.

36. **Child Psychology:** Child development; native equipment; learning; character and personality development; child management and family relationships. 2 hours.

39. **Exceptional Children:** Problems and methods in work with the gifted, mentally deficient, physically handicapped, brain damaged, and emotionally disturbed child. 2 hours.

46. **Applied Psychology:** The application of psychological principles to practical problems, with the major emphasis on problems in education and industry. 2 lecture hours.

48. **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 disorders; psychotherapeutic techniques. 2 hours.

49. **Social Psychology:** The activities of living beings in response to their social environment. The conditioning of personality by the family and other groups; types of prejudice; leadership and prestige in social life; the mob; mental epidemics; propaganda; public opinion. 2 hours.

Honors Courses

234. Historical Introduction to Psychology: 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.

235. Experimental Psychology I: Basic research techniques in psychology, including an introduction to statistical methods. 2 lectures, 2 laboratory hours

236. Child Psychology: A study of the factors which influence the personality development of the child with some reference to child guidance. Observation in field settings. 2 hours

337. Theory and Construction of Mental Tests: Discussion of basic considerations in mental measurement; description and evaluation of typical measuring instruments and their uses; consideration of persistent problems in the field of mental measurement. 2 hours.

338. Experimental Psychology II: Critical examination of research techinques in psychology with special emphasis on the control, manipulation, and measurement of psychological variables.
Prerequisite: Psychology 235. 2 lectures, 2 laboratory hours.

339. Exceptional Children: Problems and methods in work with the gifted, mentally deficient, physically handicapped, brain damaged, and emotionally disturbed child. 2 hours.

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.

355. Statistics: The application of common statistical procedures to psychological data. 2 hours.

444. Contemporary Psychology: A critical examination of the theories of representative modern and contempory psychologists. 2 hours.

446. Applied Psychology: The application of psychological principles to practical problems, with the major emphasis on problems in education and industry. 2 seminar hours.

448. Abnormal Psychology: Introduction to psychopathology with emphasis on empirical studies of pathological behavior. Topics include: classification; distribution; symptomatology; aetiology; treatment; research. Observation in field settings. 2 hours.

459. Research Problems: A seminar course in which students will select topics for special investigation. 3 hours.

ROMANCE LANGUAGES

University College

Professors:

Robert Warren Torrens, B.S. Dartmouth; M.A. Harvard; Ph.D. Cornell; Head of the Department

Norman Adrian Bennetton, B.A., M.A. Southern California; Ph.D. Johns Hopkins

William Edwin Collin, L. ès L. Toulouse; M.A.

Associate Professor:
Frances Kathleen Montgomery, B.A., M.A.; D. de l'U. de Paris

Assistant Professors:
Lane Murch Heller, B.A., M.A., Ph.D. Wisconsin
James Bernard Sanders, B.A., M.A. Manitoba; D. de l'U. de Paris

Lecturers:
Bruce Davies, B.A. McMaster; M.A. Harvard
Jack Warwick, B.A. Oxon.; M.A.

Instructors:
Felix Roque Atance, B.A. Toronto; M.A. Nebraska
Dorothy Franklyn Jones, B.A. Smith; M.A. Columbia

Teaching Fellow:
Alexander Boyd Fancy, B.A. Mt. Allison

Middlesex College

Professor:
Robert Newton Shervill, B.A.; M.A., Ph.D. North Carolina;
Head of the Department

Associate Professor:
Lionel Jacques Seymour Metford, B.A., M.A. British Columbia; D. de l'U de Paris

Assistant Professors:
Théophile Joseph Casaubon, B.A. Laval
Douglas George Creighton, B.A., M.A. Toronto; Ph.D. Columbia

Lecturers:
Wolfram Burghardt, B.A., M.A. Toronto
Frederick Kilburn Harper, B.A., M.A. Manitoba

Instructors:
Maria Valeria Brizio, Dott. in Filosofia, Bologna
Luis Lozano, B.A. Ottawa

Teaching Fellow:
Louise Henrietta Forsyth, B.A., Saskatchewan

French Courses

Students in General Program 2 who choose French as their subject of concentration must elect French 31.

It is recommended that students who major in this Department elect four senior courses in the major subject; two in the second year and two in the third year.

20. Advanced French: Introduction to French literature, grammar, translation, oral practice.
Prerequisite: French 10 or Grade XIII French. 3 hours.

22. French Conversation: Systematic oral practice for those students who wish to develop fluency in speaking French.
Prerequisite: French 20. 2 hours: half course.

30. The French Novel: Study of typical examples of the novel taken from French literature of the seventeenth through the twentieth centuries.
Prerequisite: French 20. 3 hours.

31. Grammar, Composition, Phonetics, Oral Practice.
Prerequisite: French 20. 3 hours.

34. French Drama: Study of typical examples of French dramatic literature of the seventeenth through the twentieth centuries.
Prerequisite: French 20. 3 hours.

38. French-Canadian Literature: Lectures and reading on the historical and cultural background and the philosophical and literary contributions of French Canada.
Prerequiste: French 20. 3 hours

41. Advanced Grammar, Composition and Oral Practice:
Prerequisite: French 31 or by permission of Department Head. 3 hours.

43. Commercial French: Advanced transactions, reading. For students in Secretarial Science.
Prerequisite: French 31. 3 hours

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 10 or Grade XIII French. 1 hour: half course

Honors Courses

All students in Honors Courses will take a comprehensive examination at the end of their final year.

270. The French Classical Period: Study of representative literature of the seventeenth century; reading, lectures, discussion and reports.
Prerequisite: French 20. 3 hours.

271. Phonetics, Grammar, Composition and Oral Practice.
Prerequisite: French 20. 3 hours.

380. French Literature of the Eighteenth Century: Lectures, reading, discussion, reports. Prerequisite: French 270. 3 hours.

381. Grammar, Composition, Oral Practice.
Prerequisite: French 271. 3 hours.

450. Mediaeval French and the French Renaissance: Reading of Old French, historical grammar, history of mediaeval literature, literature of the Renaissance; reading, lectures. Prerequisite: French 380. 3 hours.

490. The Literature of the Nineteenth Century: Lectures, reading and reports.
Prerequisite: French 380. 3 hours.

491. Advanced Composition and Oral Practice.
Prerequisite: French 381. 1 hour: half course.

499. Contemporary French Literature: Study of some typical examples of the novel and drama of the twentieth century; reading, lectures, reports.
Prerequisite: French 380. 3 hours.

Italian Courses

1. Elementary Italian: Grammar, oral practice, reading of simple texts. Students who have an A standing at the end of the first semester may transfer to Italian 10. 3 hours.

10. Intermediate Italian: Review of grammar, readings from Italian literature, oral practice.
Prerequisite: Italian 1 or its equivalent. 3 hours.

20. Introduction to Italian Literature: A study of Dante, Petrarca, Boccaccio and their period; one modern novel; composition.
Prerequisite: Italian 10 or Grade XIII Italian. 3 hours.

30. The Literature of the 'Rinascimento': Study of representative writers of the 15th and 16th centuries. Selected modern novels for outside reading.
Prerequisite: Italian 20. 3 hours.

40. The Literature of the 19th and 20th Centuries: Study of representative writers, reading, lectures, reports. (Not offered in 1963-64).
Prerequisite: Italian 20. 3 hours.

Spanish Courses

1. Elementary Spanish: Grammar, translation, dictation oral practice. Students who have an A standing at the end of the first semester may transfer to Spanish 10. 3 hours.

10. Intermediate Spanish: Grammar, composition, translation, dictation, oral practice.
Prerequisite: Spanish 1 or its equivalent. 3 hours.

20. Survey of Spanish Literature: Grammar review, translation, oral practice.
Prerequisite: Spanish 10 or Grade XIII Spanish. 3 hours.

22. Conversation: Systematic oral practice for developing fluency in speaking Spanish.
Prerequisite: Spanish 10. 2 hours: half course.

45. Scientific Spanish: Reading of Scientific Spanish from journals supplemented by individual reading in the special field of study of each student. (Not offered 1963-64).
Prerequisite: Spanish 10 or Grade XIII Spanish. 1 hour: half course.

48. Latin-American Literature: Study of typical examples of modern prose and poetry. (Not offered 1963-64).
Prerequisite: Spanish 20. 2 hours.

Note: Spanish 30, 31, 35, 40 and 41 are Pass Courses identical with 230, 231, 260, 340 and 341 respectively.

Honors Courses

All students in Honors Courses will take a comprehensive examination at the end of the final year.

230. Spanish Drama of the Nineteenth and Twentieth Centuries: Lectures, reading, discussion, reports. (Not offered 1963-64).
Prerequisite: Spanish 20. 2 hours.

231. Phonetics, Prose Composition, Conversation.
Prerequisite: Spanish 20. 2 hours.

260. Spanish Poetry of the Nineteenth and Twentieth Centuries: Lectures, reading, discussion, reports.
Prerequisite: Spanish 20. 2 hours.

340. Spanish Prose of the Nineteenth and Twentieth Centuries: Lectures, reading, discussion, reports.
Prerequisite: Spanish 20. 2 hours.

341. Commercial Spanish: Composition, oral practice.
Prerequisite: Spanish 231. 2 hours.

365. Spanish Poetry: Garcilaso de la Vega to the end of the Golden Age.
Prerequisite: Spanish 260. 2 hours.

455. Spanish Literature of the Mediaeval Period.
Prerequisite: Spanish 365. 2 hours.

460. Spanish Drama before Lope de Vega, and Spanish Drama of the Golden Age.
Prerequisite: Spanish 365. 2 hours.

461. Advanced Composition and Oral Practice.
Prerequisite: Spanish 341. 1 hour: half course.

465. The Spanish Novel and Non-fictional Prose of the Golden Age.
Prerequisite: Spanish 365. 3 hours.

RUSSIAN STUDIES

Middlesex College

Professor:
Leonid Ignatieff, B.A. McGill; M.A. Michigan

Special Lecturer:
Helen Isyumov (Mrs. P. N.), B.A. Univ. of Moscow

Instructors:
Nina Bernotas, (Mrs. N.) B.A. (part-time)
Mrs. Erna Froese, B.A.

Courses

1. Elementary Russian: A beginning course; pronunciation, grammar, dictation, translation, oral practice. 3 hours.

10. Intermediate Russian: Review of grammar, composition and conversation.
Prerequisite: Russian 1. 4 hours.

15. Elementary Scientific Russian: The elements of Russian grammar with the reading of easy scientific Russian. 3 hours.

20. Advanced Russian: Special problems of grammar, translations, conversation, composition.
Prerequiste: Russian 10. 4 hours.

30. Outline of Classical Russian Literature: (Eighteenth and Ninteenth Centuries) Lectures, reading, discussions, reports.
Prerequisite: Russian 10 or Russian 20. 3 hours.

37. History of Russia - U.S.S.R.: The political, economic and cultural development, social conditions, territorial expansion and foreign relations. 3 hours.

40. Outline of XXth Century Literature: Lectures, reading, discussions, reports. Prerequisite: Russian 30. 4 hours.

45. Scientific Russian: The reading of scientific texts and articles in Russian. For Honors Science students.
Prerequisite: Russian 15. 1 hour: half course.

Honors Courses

All students in Honors Courses will take a comprehensive examination at the end of the final year.

280. Introduction to Russian Literature and Culture.
Prerequisite: Russian 20. 3 hours

281. Composition and Conversation.
Prerequisite: Russian 20. 3 hours

390. Prose of the Nineteenth Century.
Prerequisite: Russian 280. 3 hours

391. Phonetics, Composition and Conversation.
Prerequisite: Russian 281. 3 hours

420. Contemporary Literature.
Prerequisite: Russian 390. 2 hours

490. Poetry of the Nineteenth Century
Prerequisite: Russian 390. 2 hours

491. Composition and Conversation.
Prerequisite: Russian 391. 2 hours

493. History of the Russian Language.
Prerequisite: Russian 391. 2 hours

SECRETARIAL SCIENCE

University College

Professor:
Mary Hamilton Gillespie, B.A.; M.A. Columbia, Head of the Department

Assistant Professors:
Elaine Woodrow Chapman, (Mrs. C. B.), B.A.
Roma Lucille Waller (Mrs.), B.A.; M.A. Columbia

Lecturer:
Eleanor Gertrude Ward (Mrs. Bruce), B.A.

Assistant:
Shelagh A. Morrison, B.A.

Courses

The difficulty of adjusting timetables makes it impossible for those who are unable to pass the final tests of each year to take General Arts subjects of a suceeding year in conjunction with their Shorthand and Typewriting. Therefore, students who fail to pass in one or more of their subjects are faced with the possibility of having to lose an entire year.

28-29. Shorthand and Typewriting: Pitman's Shorthand: theory, speed up to 60 words a minute, and typed transcription of notes. Touch system of typewriting; care of machine; letter styles; copying from manuscript and printed matter; centering; accuracy; and timed tests. 12 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.

36. Business Mathematics: Prescribed for Honors students in Business Administration and Secretarial Science. It provides practical and basic applications of methods relating to the Mathematics of Business. 2 hours.

37. Office Practice: The foundation of the work in Office Practice is laid in the third year. Lectures are given on office methods, and actual duties are undertaken in the Secretarial Science Office.

Prerequisites: Secretarial Sceince 28-29. 3 hours.

38-39. Shorthand and Typewriting: Shorthand speed up to 100 words a minute; typed transcription of notes; typewriting from manuscript; tabulation; carbon copies; telegrams; financial statements; methods of duplicating; accuracy and timed tests.

Prerequisites: Secretarial Science 28-29. 12 hours.

47. Office Practice: The responsible duties of the various members of an office staff and the operation of modern office equipment are undertaken by the fourth year students. Units of work are assigned in rotation. Lectures are given on secretarial duties, office organization, the administration of services, the problems of office personnel.

Prerequisites: Secretarial Science 37, 38, 39. 15 hours: double course.

48-49. Shorthand and Typewriting: Shorthand speed up to 130 words a minute; typed transcription of notes; typewriting speed up to 60 words a minute; typing from advanced copy (technical matter, foreign languages) and from dictation.

Prerequisites: Secretarial Science 38, 39. 10 hours.

ZOOLOGY

University College

Professors:

Anthony William Aldridge Brown, B.Sc.F., M.A., Ph.D., Toronto; F.R.S.C.; M.B.E., Head of the Department
Helen Irene Battle, B.A., M.A.; Ph.D. Toronto
William Alexander Kennedy, B.A., Ph.D. Toronto; Honorary (part-time)

Associate Professors:

William Wallace Judd, B.A. McMaster; M.A., Ph.D. Toronto
David Maxwell Scott, B.Sc., Ph.D. McGill
Robert Harvey Stinson, B.A. McMaster; Ph.D. Toronto

Assistant Professors:

Thomas Kenneth Richard Bourns, B.A., M.A. British Columbia; Ph.D. Rutgers
Miles Hugh Alston Keenleyside, B.A., M.A. British Columbia; Ph.D. Groningen
Donald Burley McMillan, B.Sc., M.Sc., Ph.D. Toronto

Honorary Lecturers (Part-time):

Edwin Joshua Bond, B.S.A., O.A.C.; M.Sc.; Ph.D. London
William Chefurka, B.Sc. Manitoba; M.A. Montana State; Ph.D. Harvard
Ernest Howard Colhoun, B.S.A. Toronto; Ph.D. Cantab.; F.R.E.S.
Andrew Hampden Lawrie, B.A., M.A. Toronto
Hector Alexander Urquhart Monro, B.Sc. (Agr.), M.Sc., Ph.D. McGill
John Earle Steele, B.Sc. Dalhousie; M.Sc.; Ph.D. Saskatchewan
John James Tibbles, B.S.A. Toronto; M.Sc., Ph.D. Wisconsin

Preceptor:

Majorie Eleanor Prouse, M.Sc.

Graduate Demonstrators:

Robert Earl Lemon, M.Sc.; Francis Joseph Edward Boudreau, B.Sc., B.Ed. St. Francis Xavier; Theodorus Henricus Scholten, B.S.A. Toronto; John Cameron Lewis, B.A.; Peter Campbell Bowen,, B.A. Carleton; Roderick Pataudi Singh, B.A. Takeo Tadano, B.Sc., M.Sc. Tohoku; Perry David Anderson, B.A.; Paul Charles Naftel, B.S.A. Toronto; Douglas Arnold Hagan, B.A.; Doreen Lewin Scott, M.A. (part-time)

Post-doctorate Fellow

Peter Roessler, D.Sc., Tubingen.

Graduate Assistant and Scholars:

Joseph Addison McKenzie, M.A., Toronto; M. K. Krishna Pillai, M.Sc., Waldemar Klassen, M.Sc., Alberta; Samar Bahadur Singh, M.Sc., Allahabad; Takuji Kimura, M.Sc., Hiroshima; Gordon Harry Sydney Hooper, B.Sc., M.Sc., Queensland; Austina Kennedy, B.Sc., Dalhousie; Edmond Yehuda Lipsitz, B.A.; M. A. Quddus Khan, M.Sc., Karachi.

Courses

20. Introductory Zoology: The principles of animal biology as illustrated by a study of the structure and physiology of particular forms. To qualify for the Honors Courses in Biology a student must obtain at least 60% in this course.
2 lectures, 3 laboratory hours.

21. Biological Science: 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.
Either Botany 21 or Zoology 21 may be taken for credit but not both.
Students who obtain 60 per cent in this course may select options for further study in Botany and Zoology. 2 lectures and 2 laboratory hours.

24. Mammalian Zoology: The anatomy (first term) and physiology (second term) of the mammals. For students in the Nursing, Home Economics, and Physical and Health Education Programs. 2 lectures and 3 laboratory hours.
Prerequisite: Zoology of Grade XIII or Zoology 21.

30. Senior Mammalian Zoology: The anatomy and physiology of the mammals. Students who have received credit in Zoology 24 will not be permitted to take Zoology 30.
Prerequisite: Zoology 20 or 21. 2 lectures and 3 laboratory hours.

34. Vertebrate Histology: An introduction to the microscopic structure and development of tissues and organs.
Prerequisite: Zoology 24 or 30. 1 lecture, 3 laboratory hours.

37. History of Biology: The history of discoveries in biology and the development of biological thought. 2 lectures.
Prerequisite: Zoology 20 or 21 and one other college course in Zoology.

41b. Entomology: The biology and economic importance of the insects, and in addition the spiders, mites, crustacea and other arthropods.
Prerequisite: Zoology 20 or 21 (60%).
2 lectures, 3 laboratory hours. (second term).

43. Animal Ecology: Effects of environmental factors; distribution of animals; animal communities; population dynamics.
Prerequisite: Two Zoology courses (60%). 2 lectures.

44. Embryology: Principles of development as illustrated by selected invertebrate and vertebrate types.
Prerequisite: Zoology 24 or 30. 1 lecture, 3 laboratory hours.

45. Principles of Genetics: The principles of Mendelian genetics and the chromosome theory.
Prerequisite: Zoology 20 or Zoology 21 (60%). 2 lectures.

Honors Courses

200M. Comparative Vertebrate Zoology and Introductory Embryology: Comparative structure and function of vertebrate organ systems; introductory embryology. For prospective Medical students. 2 lectures, 3 laboratory hours.

255. Principles of Genetics: The principles of Mendelian genetics and the chromosome theory, illustrated by lectures and the practical performance of simple breeding experiments.
Prerequisite: Zoology 20. 2 lectures.

270. Comparative Vertebrate Zoology: The biology, origin, and evolution of the classes of vertebrates; an introduction to some principles of evolution.
Prerequisite: Zoology 20. 2 lectures, 3 laboratory hours.

352. Comparative Physiology: A comparison of the function of the organs and organ systems in selected invertebrate and vertebrate types, with the general physical and chemical principles involved in the functioning of the animal cell.
Prerequisite: Zoology 270. 2 lectures, 3 laboratory hours.

354. Vertebrate Histology: An introduction to the microscopic structure and development of vertebrate tissues and organs.
1 lecture and 3 laboratory hours.

370. Invertebrate Zoology and Entomology: The anatomy and biology of representative invertebrate animals (first term) and of insects (second term).
Prerequisite: Zoology 270. 2 lectures, 3 laboratory hours.

437. History of Biology: The history of discoveries in biology and the development of biological thought. 2 lectures.

453. Animal Ecology: Effects of environmental factors; distribution of animals; animal communities; population dynamics. 2 lectures.

454. Embryology: Principles of development as illustrated by selected invertebrate and vertebrate types. 1 lecture and 3 laboratory hours.

456. Laboratory Technique: A practical course in standard laboratory procedures, including microtechnique photomicrography, and preparation of illustrations. 3 laboratory hours: half course.

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: half course.

463. Biological Field Studies: An obligatory course of 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. 3 laboratory hours: half course.

470. Vertebrate Taxonomy: Classification and distribution of vertebrates, and the study of Canadian vertebrates in the laboratory. 1 lecture and 3 laboratory hours.

471. Parasitology: A study of parasitism as a way of life, representative animal parasites, host-parasite relationships, and parasitological techniques. 2 lectures and 3 laboratory hours.

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 66% in third year. Full course.

THE SUMMER SCHOOL AND EXTENSION DEPARTMENT

Director:
John Archibald McIntyre, B.A.; M.A. Toronto

Associate:
Angela M. Armitt, B.A.

Assistants:
Olive M. Hodgins
Hazel J. Trott, B.A.

The Faculty of Arts and Science through the Summer School and Extension Department offers general program subjects leading to a General B.A. degree for students unable to attend the intramural winter sessions. These subjects are available in three ways: (1) at the Summer Session in London, (2) during the Winter session in London and at 10 other centres in Western Ontario and (3) by correspondence.

In addition some honors subjects are offered in the Summer Session and in London during the Winter Session. These are available to teachers with University degrees who are working toward Type A teaching certificates. The dates for the 1963 Summer School are July 2 to August 15 (including examinations).

A student enrolled in the Summer School, Correspondence and Extension Department may take as many as five courses a year (two in a Summer Session and three during a Winter Session). Any student who wishes to take more courses than the maximum mentioned must petition the Academic Standing Committee for permission.

A candidate for a degree must attend this University for one academic year and two Summer Sessions or five Summer Sessions. This requirement is reduced to a minimum of one Winter Session or three Summer Sessions by attendance at Extension lecture classes held by this University, or by the transfer of credit from an approved college or university.

No intramural student may register in an extension or correspodence course without the written permission of his Dean. Any student who receives such permission is expected to pay the full extension or correspondence fee unless he presents to the Registrar and the Comptroller a credit slip to be obtained from the Extension or Correspondence Department and countersigned by both his Dean and the Director of the Extension Department.

Detailed regulations with respect to subjects offered to part-time students are available on application to the Director, Summer School and Extension Department.

TROIS-PISTOLES SUMMER SCHOOL FOR FRENCH, ENGLISH, PAINTING AND METHODOLOGY, TROIS-PISTOLES, PROVINCE OF QUEBEC

Middlesex College

Director: Theophile Joseph Casaubon, B.A. Laval

In 1963 the School will operate from July 4 to August 15. Although formal instruction is given in phonetics, composition, etc., the emphasis is on the spoken language. University credits may be obtained.

For the bulletin concerning the courses apply to the Director of the Trois-Pistoles Summer School, Middlesex College, or to the University Registrar.

College of Music

Principal — Clifford von Kuster, Mus.Bac., L.R.C.T.

Professors:

Kathleen Parlow, Head of the String Department
Alfred Rosé, B.A., Head of the Voice and Music History Departments

Associate Professor:

Donald McKellar, Mus.Bac., M.Mus., Head of Instrumental Music Education

Assistant Professors:

John S. McIntosh, Mus.Bac., M.Mus., Head of the Theory and Organ Departments
Howard Munn
Earle Terry, B.A, B.Paed, M.Mus.

Lecturers:

James Ford
Lillian Wilson

Instructors:

James Ford
Jean McCullough, M.Sc.
Alma Madill, A.T.C.M.

Courses:

10. For Arts and Science students: There are three parts of this course: history of music, theory and performance. To obtain credit, two of the three parts must be taken. If a student chooses performance, he must pay for the private lessons.

History of Music: Music in the ancient world. The Christian foundations of Western music. The Middle Ages. The Renaissance. The birth of opera and oratorio. The Baroque. Bach and Handel. 1 hour

Theory. Rudiments and elementary form and analysis. 1 hour

20. For Arts and Science students: There are three parts of this course: History of music, theory and performance. To obtain credit, two of the three parts must be taken. If a student chooses performance. he must pay for the private lessons.

History of Music: Instrumental music and opera in the 18th century. Haydn, Mozart, Beethoven and Schubert. Opera in the early 19th century. Romanticism: Chopin to Wagner. 1 hour

Theory: Elementary harmony, including keyboard harmony and improvisation. 1 hour.

20s. Music Education (choral): Summer School only. 10 hours.

20y: A listener's course designed for Arts students to acquaint them with the landmarks of the orchestral, choral and chamber repertoire through guided listening to recordings and live performance. No prerequisite. 2 hours.

21c. Individual piano lessons for piano majors: Fundamentals of technique presented. Repertoire assigned from each representative period of piano literature. 40 minutes.

21cd. Piano lessons for voice majors: Basic principles of technique presented. Course of study designed to suit individual needs and previous experience, with special emphasis on sight reading. 40 minutes.

21ce. Piano lessons for organ majors; see 21cd. 40 minutes.

21d. Individual voice lessons: Vocal production and its fundamental laws. Exercises, studies, simple songs in English. Italian diction applied to singing. Simple Italian repertoire. Half hour twice a week.

21e. Individual organ lessons: Elements of organ construction and registration. Basic technique. Study of Bach Choral Preludes. Transposition and elementary score reading. 40 minutes.

22. Paedagogy as related to keyboard instruments: Teaching approach to all phases of technique and tone production, phrasing, style, interpretation, memorizing, practice methods, etc. 1 hour.

23. Teaching Materials: Grades I, III, V, VII analyzed and studied. Assignments in listing and performing teaching repertoire. Practice teaching. 1 hour.

24. Repertoire: Lecture-recitals presenting the peaks of piano, vocal, violin and orchestral literature by faculty performance or by recordings. 1 hour.

25. Theoretical studies: Harmony, aural training and sight-singing. Triads and their inversions. Cadence patterns. Rhythmic reading and dictation. Analysis of binary forms and sonata form. 2 hours

26. History of Music: Roman and early Christian music. Monodic music. Music of the MiddleAges. The Renaissance. The Baroque. The birth and development of opera. The instrumental music of the 17th century. 1 hour

27. Choral Training: Sight singing and sol-fege. Choral conducting and repertoire. 1 hour.

28. Performance Class: Performing experience and development of the critical faculties. Regular sessions.

29. Major course in Composition: Details on request. 1 hour.

30. For Arts and Science students: There are three parts of this course: history of music, theory and performance. To obtain credit, two of the three parts must be taken. If a student chooses performance, he must pay for the private lessons.

History of Music. The middle 19th century. Nationalism in music. The end of the 19th century. Impressionism. Contemporary music. 1 hour

Theory: "Free" counterpoint; advanced harmony and composition. 1 hour

30Y. For Arts and Science students: A continuation of Music 20Y. Will include a detailed study of at least three large scale compositions from a listener's viewpoint, with attention to the life, social background and other works of the composer.

Prerequisite: Music 20Y (or equivalent) 2 hours

31c. Individual piano lessons for piano majors: Study and analysis of more advanced repertoire. More stress on performance. 40 minutes.

31cd. Piano lessons for voice majors: Continuation of 21cd with added emphasis on accompanying and sight reading. 40 minutes.

31ce. Piano lessons for organ majors: Continuation of 21ce, with added emphasis on accompanying and sight reading. 40 minutes.

31d. Individual voice lessons: Use of increasingly difficult material. Emphasis on sight singing. Study of easier older operatic numbers. Introduction to repertoire study in French, French diction. Recitative and Oratorio. Half hour twice a week

31e. Individual organ lessons: Bach Trio Sonatas. Introduction to contemporary organ music. Transposition, score reading and improvisation. 40 minutes.

33. Teaching Materials of Grades II, IV, VI, VIII: Practice teaching. 1 hour.

34. Repertoire: Continuation of Music 24. 1 hour.

35. Theoretical studies: Harmony in four parts using triads, dominant sevenths, secondary sevenths and non-harmonic materials as found in the style of Johann Sebastian Bach. Aural training and sight-singing paralleling the studies in harmony. Advanced rhythmic reading. 2 hours

36. History of Music: The 18th century opera. Gluck, Haydn, Mozart, Beethoven. The early Romantic composers. Schubert, Mendelssohn and Schumann. Chopin and piano music. Berlioz. 1 hour

37. Choral Training: Continuation of Music 27. 1 hour.

38. Performance: Continuation of Music 28. Regular sessions.

39. Composition: Continuation of Music 29. 1 hour.

40. For Arts and Science Students or Final Year College of Music: An advanced course in score reading; orchestration; advanced form and analysis; composition. Individual research projects. 3 hours.

41c. Individual piano lessons for piano majors: More extensive repertoire assignments. Experience in ensemble playing, chamber music and concerti. 40 minutes.

41cd. Piano lessons for voice majors 40 minutes.

41ce. Piano lessons for organ majors. 40 minutes.

41d. Individual voice lessons: Modern English songs. German diction applied to singing. Study of German Lieder. Modern repertoire in original languages. Study of at least one full opera part. Half hour twice a week.

41e. Individual organ lessons: General repertoire with emphasis on church music accompaniment. Extended improvisation. 40 minutes.

44. Repertoire: Continuation of Music 24 and 34. 1 hour.

45. Theoretical studies: Harmony in four parts using triads, seventh chords, non-harmonic materials and altered chords. Counterpoint in two and three parts. Aural training paralleling the studies in harmony and counterpoint. Keyboard harmony. 2 hours.

46. History of Music. Wagner - his predecessors and contemporaries. The later Romantics. Nationalism in music. Musical Realism. The Musical Impressionists. The Twentieth century. 2 hours

47. Choral Training: Continuation of Music 27 and 37. 1 hour.

48. Performance: Continuation of Music 28 and 38. Regular sessions.

49. Composition: Continuation of Music 29 and 39. 1 hour.

Honors Courses

The following courses are identical with the pass courses indicated except that in some cases additional assignments will be required.

121 (21); 124 (24); 125 (25); 126 (26);

231 (31); 234 (34); 235 (35); 236 (36);

341 (41); 344 (44); 345 (45); 346 (46);

107, 207, 307, 407. Instrumental Music Education: Lectures on the history and aims of school instrumental music. Survey of instruments. Classroom methods. Comprehensive survey of music library materials. Field trips to schools. Orchestral technique, conducting, band and orchestral repertoire. Administration and organization of music programs in schools. 1 hour.

117, 217, 317, 417. Woodwind and Brass Class: Actual work on instruments to acquire a proficiency in one of each group and a working knowledge of the others. 1 hour.

127, 227, 327, 427. Choral Music Education: Psychology and philosophy of school music. Classroom text book material. Voice training. Organization and training of school choirs. Paedagogy. Choral conducting. Music appreciation programs in schools. 1 hour.

137, 237, 337, 437. Choral Technique: Rudiments of choral music. Sight singing, sol-fege, tone, balance, diction, interpretation. Practice conducting, acquiring practical knowledge of choral repertoire as used in schools. Phrasing, voice production. The various stages of voice development. 1 hour.

247, 347, 447. String Class: Acquiring a mastery of one stringed instrument and a working knowledge of the others. 1 hour.

157, 257, 357, 457. Ensemble Class. Combined instrumental class playing repertoire for band and orchestra. Practice conducting. 1 hour.

345. Theoretical Studies. 3 hours

417R. Woodwind and Brass Repertoire: A study of brass and woodwind literature through performance. 1 hour

447R. String Repertoire: A study of string repertoire through performance. 1 hour

451. Individual lessons in the major instrument. 40 minutes

454. Repertoire: Continuation of Music 344. 1 hour

455. Theoretical Studies: Styles: study of the techniques of selected composers representative of the various contemporary schools. Scoring and arranging for various instrumental and vocal combinations. 2 hours

456. History of Music: Contemporary music: 19th century background. Paris. Germany and Austria. Music in America. Experiments in music. Stravinsky, Schoenberg, Berg, Bartok, Hindemith. Soviet Russia. England. New directions. 1 hour

467. Percussion Class: Learning fundamentals of percussion instruments. 1 hour

The Affiliated Colleges Faculties and Courses

THE PRELIMINARY YEAR

The Preliminary Year offered at Brescia College is designed for students who have completed Grade XII (Ontario) or who have equivalent standing, including Latin or Mathematics and one language besides English. Minimum standards of admission as set by the College are based on percentage, on rank-in-class and on principal's reports. The course is also open to students who have failed to complete the Grade XIII requirements for admission to University. The latter must take the entire Preliminary Year with advance credit only for Grade XIII subjects in which the papers average at least 66%.

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 2 or to Secretarial Science:

English 10
Another language
Latin 10 or two mathematics

Three of: History 14, Geography 20, a third mathematics, Religious Knowledge 30x, 21x, another language 1, 10, 1-10, Music—Grade II Theory and Grade VIII Practical. Home economics 25x.

SPECIAL COURSES

The following courses, equivalent to Grade XIII subjects, are not offered in the Colleges of the University but may be offered by the affiliated colleges as part of the Preliminary year.

English 10: Literature and Composition.	3 hours.
French 10: Intermediate French.	3 hours.
Prerequisite: Grade XII French.	
History 14: History of the Americas.	3 hours.
Mathematics 10: College Algebra.	2 hours.
Mathematics 12: Analytic Plane Geometry.	2 hours.
Mathematics 18: Plane Trigonometry.	3 hours, one term: half course.

Huron College

(London, Ontario)
(Founded in 1863)

OFFICERS OF ADMINISTRATION

Principal: The Rev. J. Grant Morden, B.A. Toronto; L.Th., B.D., Wycliffe; S.T.M. Union Theological Seminary; D.Th. General Theological Seminary, N.Y.

Dean of Arts: The Rev. J. G. Rowe, S.B. Harvard; B.D. Episcopal Theological School, Cambridge, Mass.; M.A., Ph.D. Toronto

Registrar — Miss J. Catharine Ridley

FACULTY

Business Administration

Lecturer:
Robert G. Fullerton, B.A., M.B.A.

Classics

Associate Professor:
The Rev. F. H. Allen, M.A., B.D. Oxon.

Lecturer:
P. Derbyshire, B.A.; (part-time)

Economics and Political Science

Assistant Professor:
G. Jacobs, M.A. Alberta

Lecturer:
H. B. Rooney, B.A., M.B.A.

Tutor:
D. Steinberg, B.A.

English

Professors:
W. F. Blissett, B.A. British Columbia; M.A. Ph.D. Toronto; Head of the Department
Mrs. A. H. Jared, B.A.; M.A. Toronto; A.M., Ph.D. Radcliffe

Lecturers:
D. A. Blostein, B.A. Manitoba; B.A. Oxon.
P. M. Hinchcliffe, B.A. British Columbia; M.A. Toronto
E. D. McVey, M.A. Queen's
Miss E. Revell, B.A. Toronto; M.A., B. Litt. Oxon.

French

Assistant Professor:
G. A. Black, M.A. Toronto; Acting Head of the Department

Lecturers:
A. B. Fancy, B.A. Mount Allison
Mrs. Louise Forsyth, B.A. Saskatchewan; (part-time)
Miss Gwenneth Galilee, B.A. Toronto; (part-time)
Mrs. Deborah Metford, B.A., M.A. British Columbia; D.de l'U. de Paris; (part-time)

Hebrew

Assistant Professor:
The Rev. Jared J. Jackson, A.B. Harvard; B.D. Episcopal Theological School, Cambridge, Mass.; Th.D. Union Theological Seminary

History

Professors:
The Rev. J. G. Rowe, S.B. Harvard; B.D. Episcopal Theological School, Cambridge, Mass.; M.A., Ph.D. Toronto; Head of the Department and Dean of Arts
The Rev. J. L. H. Henderson, B.A., B.D., D.D.

Lecturer:
K. C. Sessions, B.A., M.A. Ohio State

Mathematics

Lecturer:
Mrs. E. M. Glennie, B.Sc. London

Philosophy

Professor:
The Rev. W. S. Morris, B.A. Bristol; Ph.D. Chicago

Assistant Professors:
G. F. Comber, B.A., M.A. Ohio State
D. A. Givner, B.A., M.A. Maryland; Ph.D. Columbia

Psychology

Assistant Professors:
F. W. Burd, M.A. Toronto; Acting Head of the Department

Lecturers:

The Rev. Thomas Harris, B.A. Toronto; L.Th. Wycliffe; M.A. Columbia; B.D. Union Theological Seminary

Mrs. Moira Sansom, B.A. Mount Allison; B.A. New Brunswick; B.L.S. Toronto; Ph.D. London; (part-time)

Religious Knowledge

Professor:
The Rev. J. Grant Morden, B.A. Toronto; L.Th., B.D. Wycliffe S.T.M. Union Theological Seminary; D.Th. General Theological Seminary, N.Y.; Principal and Dean of Theology

Associate Professor:
The Rev. F. H. Allen. M.A., B.D. Oxon.

GENERAL PROGRAM: PRE-THEOLOGICAL OPTIONS

Requirements for Admission: The Secondary School Graduation Diploma (Grade XII) and Grade XIII or equivalent standing in English, another language, Latin or Mathematics (two of Algbera, Geometry, Trigonometry and Statics), and three additional papers; with an average of 60%.

This program leads to the degree of Bachelor of Arts and is the normal requirement for admission to the three-year program leading to the title of L.Th. or B. Th. from Huron College. If, however, a student wishes to take another program leading to a General or Honors degree, Huron College will give its consent.

First Year

English 20
Language other than English at the 20 level
History 20
Mathematics 20 or a Natural Science at the 21-29 level
Philosophy 20
Psychology 20

Second Year

One of: English 32, 36, 38, 44, 45, 49
Philosophy 30
Economics 20
Religious Knowledge 30x
Two of: History 31, 36, 44
Psychology 36, 46, 48, 49
Hebrew 1-10 (two course equivalent)

Third Year

One of: English 32, 36, 38, 44, 45, 49
Religious Knowledge 40x
One of: Philosophy 31, 36, 42, 47
Two of: Hebrew 1-10 (two course equivalent)
History 31, 36, 44;
Psychology 36, 46, 48, 49; another Senior English or Philosophy

Religious Knowledge Courses

30x. An introduction to the Living Religions of the World: A study of the History, faith, and practices of the major living religons. 2 hours.

40x. New Testament Greek. 3 hours.

42x. Christian Ethics: A consideration of some principles of morals and of Biblical ethics in relation to contemporary problems. 2 hours

Brescia College

(London, Ontario)
(Affiliated in 1919)

OFFICERS OF ADMINISTRATION

Dean: Mother Marie, B.A., M.A., Ph.D.

Registrar: Mother Marina, B.A.

Assistant Registrar Mother M. St. Paul, B.A., M.A.

FACULTY

Classics

Lecturer:
Mother M. St. Catherine, B.A.; M.A. Detroit

Economic and Political Science

Professor:
Mother M. St. Michael, A.T.C.M.; B.A.; M.A. Catholic U of America; Ph.L., Ph.D. Laval

Assistant Professor:
Mother M. Rosanna, A.T.C.M.; B.A.; M.A. Catholic U of America

Lecturers:
Rev. T. L. McManus, B.A.; J. C. L.
Mother M. Perpetua, B.A.; M.A. Detroit

English

Professor:
Mother Mary Agnes, B.A.; M.A. Toronto; M.A. Notre Dame

Assistant Professor:
Mother M. Corona, B.A.; M.A., Ph.D. Notre Dame

Lecturers:
Mother M. St. Catherine, B.A.; M.A. Detroit
Dove A. Bradshaw, B.A., M.A. Toronto

German

Lecturers:
Mother Mary Agnes, B.A.; M.A. Toronto; M.A. Notre Dame
Fritz M. G. Wieden, B.A., M.A.

History

Lecturers:
Rev. P. E. Crunican, B.A., M.A., Toronto.
Mother M. St. Paul, B.A.; M.A. Notre Dame

Instructors:
James W. Daly, B.A., M.A. Toronto
Donald Francis Harris, M.A. (Cantab.)

Home Economics

Professor:
Mother M. Dominica, B.A., M.A. Toronto

Associate Professor:
Mother M. St. Dominic, B.Sc. Marywood

Lecturers:
Isabel Hodgkinson (Mrs. G. J.), B.A., M.A. Toronto
Mother M. Victoria, B.Sc. Chestnut Hill; M.Ed. St. Louis

Mathematics

Instructor:
W. H. Adamson, B.A., M.A.;

Philosophy

Professor:
Mother M. St. Michael, A.T.C.M.; B.A.; M.A. Catholic U of America; Ph.L., Ph.D. Laval

Lecturers:
Rev. Arnold F. Loebach, B.A.; J. C. L. Catholic U of America
John Julius Snyder, B.A. Notre Dame; M.A. Toronto

Psychology

Associate Professor:
Mother M. St. Michael, A.T.C.M.; B.A.; M.A. Catholic U of America; Ph.L., Ph.D. Laval

Lecturer:
Mother M. Perpetua, B.A.; M.A. Detroit

Religious Knowledge

Professor:
Rev. James Joseph Carrigan, B.A., S.T.L., S.T.D. Montreal

Associate Professor:
Mother M. St. Michael, A.T.C.M.; B.A.; M.A. Catholic U of America; Ph.L., Ph.D. Laval

Lecturer:
Rev. Donald J. McMaster, B.A.

Instructor:
Mother Marie, B.A., M.A.; Ph.D. Toronto

Romance Languages

Professor:
Mother Marie, B.A., M.A.; Ph.D. Toronto

Associate Professor:
Mother M. Rosanna, A.T.C.M.; B.A.; M.A. Catholic U of America

Instructor:
Nora Keeling, Student Instructor, Honors French Language and Literature (4th year) UWO

Programs

The General Programs and some of the Honors Programs are available in Ursuline College. All laboratory courses in the Natural Sciences are taught entirely in University College.

For the outline of the program in Home Economics offered jointly by Ursuline and University Colleges, see the General Programs section.

HOME ECONOMICS

23x. Applied Art: Fundamentals of design and color as applied to the home; modern handicraft suitable for use in home and school. 2 hours.

25x. Household Administration: General principles of home construction and planning, problems of home management and equipment. 2 hours.

30x. Clothing: A study of textiles; problems in clothing construction.
1 lecture, 3 laboratory hours.

31x. Normal Nutrition: Normal requirements of the body; the optimum diet; food nutrients and their functions; deficiencies.
2 lectures, both terms; 2 laboratory hours, one term.

32x. Foods: The principles of cookery and food preparation and the scientific theory underlying them. 1 lecture, 3 laboratory hours.

33x. Interior Decoration: Elements of interior decoration and design.
Prerequisite: Home Economics 23x. 1 hour: half course.

40x. Clothing and Designing: Art of costume and personal appearance; history of costume; pattern designing; care of fabric; problems in clothing construction.
Prerequisite: Home Economics 30x. 2 lectures, 3 laboratory hours.

41x. Advanced Nutrition: Nutritional needs during infancy; the pre-school child; the adolescent. Modifications of the normal diet to meet specific dietary needs during diseases. Preparation of foods for these diets.
2 lectures, both terms; 2 laboratory hours, one term.

42x. Foods: Food science and experimental cookery.
Prerequisite: Home Economics 32x. 1 lecture, 3 laboratory hours.

45bx. Family Economics: Marketing and consumer problems; family finance management; budgeting. 2 hours: half course.

46x. Demonstration Techniques: Meal service.
One afternoon a week, second term: half course.

47x. Nutrition: Seminars and reports on recent findings in nutrition.
Prerequisite: Home Economics 31x. 1 hour: half course.

48x. Institutional Management: Discussion of equipment; organization and administration of food services; quantity cookery field projects.
Prerequisite: Home Economics 32x. 2 lectures, 3 laboratory hours, one term.

PHILOSOPHY

Philosophy 20 or 30 or 36 is a prerequisite for all General courses in Philosophy; Philosophy 230 for all Honors courses in Philosophy. Students preparing for Social work or other professions may, with permission, select options to suit their needs. Courses scheduled for two hours a week may meet for additional seminars or discussions at the discretion of the instructor. Brescia College may cancel a Philosophy course for a year if the number of students who wish to take it is insufficient.

20x. Introduction to Philosophy: Problems, divisions and methods of philosphy; the principles of natural philosophy, metaphysics, epistemology and moral philosophy.
3 hours.

30x. Basic Philosophical Literature: As in the Colleges of the University
3 hours.

31x. Logic: The three operations of the intellect: conception, judgment, reasoning.

32x. Introductory Ethics: General and individual. 2 hours.

33x. Introduction to Metaphysics, Epistemology, and Ontology: Problems of being, knowledge, causality and analogy. 2 hours.

34x. Political Philosophy: History of ancient medieval and modern Political Philosophy. The philosophical implications of contemporary political movements and principles for world society. 2 hours.

35x. Aesthetics: Lectures and seminars on the history of the philosophy of art and the metaphysics of the beautiful; aesthetic problems; aesthetics as the foundation of criticism; art and prudence; the liberal and servile arts. 2 hours.

36x. Ancient, Mediaeval and Scholastic Philospohy: with reading from selected texts. 2 hours.

42x. Social Ethics: Domestic society: the nature and conditions of marriage; function, rights and duties of family inmates. Birth control and population problems. Civil society: the philsophy of the state; the relations between church and the state; the community of nations; labor problems. 2 hours.

43x. Advanced Metaphysics: Natural theology; comparative religious philosophy. 2 hours.

44x. Social Philosophy: The relationship of philosophy to the social sciences; the nature and function of society; freedom, authority, government, the family and the state; historical development of social economy from primitive to modern times; individual and social character of property; capital and labor. 2 hours.

47x. History of Modern Philosophy: The transition from mediaeval to modern philosophy; modern philosophy; readings from selected basic texts. 2 hours.

Honors Courses

The following courses are identical with the Pass courses indicated, except that additional assignments will be required or seminars added: 231 (31), 335 (35), 336 (36), 347 (47), 443 (43).

230x. Basic Philosophical Literature: An examination of the principal problems and issues, methods and attitudes, theories and solutions, terms and concepts of philosophy in the light of Scholastic principles; a critical reading of selected philosophical classics is required. 2 hours.

350x. Philosophical Texts: An examination of specific source materials in Greek, Mediaeval and Modern Philosophy, as well as pertinent critical texts. 2 hours.

448x. Seminar in Contemporary Philosophy. 2 hours.

454x. Principles and Problems of Philosophy: Philosophical problems of special interest to the class, evaluated according to pragmatic, idealist and neo-Thomistic principles. 2 hours.

456x. Seminar in Plato and Aristotle.
Prerequisite: Philosophy 336. 2 hours.

457x. Seminar in Modern Philosophy.
Prerequisite: Philosophy 347. 2 hours.

462x. Ethics: A critical study of moral problems and theories; a comparative study of conflicting approaches to ethical problems found in the classics of ethical literature from Aristotle to the present, including Thomistic and neo-Thomistic texts. 2 hours.

466x. Seminar in Post-Aristotelian and Mediaeval Philosophy.
Prerequisite: Philosophy 336. 2 hours.

PSYCHOLOGY

Psychology 20 is ordinarily prerequisite to all other courses in psychology.

20x. Introduction to Psychology: The nature, faculties and functions of man according to the Thomistic interpretation; sensation, perception, intellection, motivation, emotion, volition, habits, the human soul, personality, the relative importance of heredity, environment and the self-structure. 3 hours.

36x. Child Psychology: The Thomistic "person" and Child Development; native equipment and environment; maturation and learning; character and personality; child management; familial and other social relationships. 2 hours.

46x. Applied Psychology: Psychological principles applied to practical problems in education, industry and vocational guidance; relevance of the Encyclicals to current problem-solving techniques. . 2 hours.

48x. Abnormal Psychology: Abnormal personality theory including Thomistic; the abnormal in sensation, perception, memory, emotions, thought and behavior; mental deficiency; causes and symptoms of neuroses and major disorders; therapy techniques with ethical norms. 2 hours.

49x. Social Psychology: Social environment and human response; role of family, church group, etc. in personality growth; attitudes and prejudice; leadership and status; crowd, mob; propaganda and public opinion; Social Psychology of the Encyclicals. 2 hours.

RELIGIOUS KNOWLEDGE

21x. Review Survey: The essentials of Catholic Doctrine and of the Catholic way of life. 2 hours.

30x. The Old Testament: Its content viewed as Salvation History and its role in Catholic Belief and Worship. Readings, reports and essays on Scripture Commentary and on background material. 2 hours.

31x. History of Liturgy: Survey of expressions of social consciousness in worship from Apostolic to modern times. Lectures, readings, seminars on the Encyclicals.. 2 hours.

32x. Moral Theology. 2 hours.

40x. Dogmatic Theology: Study of revealed truths. 2 hours.

SOCIOLOGY

39x. The Family: The family as a primary social group; a brief history of family life in Western societies; modern biological, psychological, sociological, economic and ethical views on the family. 2 hours.

St. Peter's and Christ the King Colleges

London, Ontario
(Founded in 1912; affiliated in 1923)

OFFICERS OF ADMINISTRATION

Rector — Rt. Rev. A. P. Mahoney, P.A., V.G., LL.D.

Dean of Arts — Rt. Rev. L. A. Wemple, B.A., Ph.L.

Registrars: The Reverend A. F. Loebach, B.A., J.C.L.
J. Q. Cahill, B.A., M.A.

FACULTY

Business Administration

Lecturer:
Alton Westwood Joseph Craig, B. Comm., St. Dunstan's M.B.A.

Classics

Professors:
Very Reverend F. J. Laverty, B.A.
Charles Jeremiah Treacy, B.A.; M.A., Ph.D., Toronto.

Lecturer:
Rev. F. G. Childs, B.A.; J.C.D., Angelicum (Rome).

Economics and Political Science

(Economics, Politics, and Sociology)

Assistant Professor:
Ignatius John Adel-Czlowiekowski, LL.M., Lemberg; LL.D.., Fribourg.

Lecturer:
Emile Primorac, B.A., M. Comm., Toronto (on leave)

English

Lecturers:
Sean Finbarr Gallagher, B.A., National U. of Ireland; M.A. (on leave)
John Rudolf Mulder, B.A., M.A.
Fritz Maximilian Gerhard Wieden, B.A., M.A.

Instructor:
Rev. C. E. Keane, B.A., M.A., Notre Dame.

German

Lecturer:
Fritz Maximilian Gerhard Wieden, B.A., M..A.

History

Lecturer:
Rev. P. E Crunican, B.A., M.A. ,Toronto

Instructors:
James Quinton Cahill, B.A., St. Ambrose (Iowa); M.A,. Columbia.
James William Daly, B.A., M.A., Toronto.

Mathematics

Lecturer:
Rev. J. J. Bensette B.A.; M.A., Detroit.

Philosophy

Professors:
Rt. Rev. A. J.. Durand, B.A., M.A.; Ph.L., Ph.D., Laval.
Rev. R. A. Graveline, B.A.; Ph.L.. S.T.L., Laval.
Rev. W. J. Ring, B.A.; Ph.L., Laval.
Rt. Rev. L. A. Wemple, B.A.; Ph.L., Angelicum (Rome); Dean of the College of Christ the King.

Lecturers:
Rev. J. P. Finn, B.A., Ph.D., Catholic U. of America.
Rev. A. F. Loebach, B.A.; J.C.L., Catholic U. of America.

Instructors:
Rev. P. E. Cavanagh, B.A.; M.A., Toronto.
Ernest James Macdonald, B.A., St. Dunstan's; M.S.W., Ottawa.
Rev. M. T. Ryan, B.A.; M.A., Ph.D., Notre Dame.
Grace Ann Twohey, B.A., Toronto; M.S.W., Ottawa.

***Religious* Knowledge**

Professors:
Rev. J. J. Carrigan, B.A.; S.T.L., S.T.D., Montreal.
Rev. R. A. Graveline, B.A.; Ph.L., S.T.L., Laval.

Romance Languages

Assistant Professor:
Dante Anthony Lenardon, B.A., B.Ed., Alberta; M.A., Ph.D., Toronto.

Lecturer:
Rev. E. P. LaRocque, B.A.; M.A., Laval.

Programs

St. Peter's College consists of the Pre-theology division of St. Peter's Seminary, for candidates for the priesthood, and Christ the King College, an Arts College for lay students.

In addition to the program in Honors Philosophy shown below, taught mainly in St. Peter's College, the General program and some Honors programs are available at the College of Christ the King. All laboratory courses in Science are taught entirely in University College.

PRE-THEOLOGY B.A. PROGRAM

Requirements for Admission: The Secondary School *Graduation Diploma and Grade* XIII standing with an average of 60% in English, another language, Latin or two Mathematics, and three other papers; or the Preliminary Year.

This program leads to the degree of Bachelor of Arts. It is accepted by the Department of Education of Ontario as academic qualification for the High School Assistant's Certificate, Type B.

FIRST YEAR

English 20
Philosophy 21x, 26x, 27x
A language other than English at the 20 level

Two of: *Religious Knowledge*
French 20
Another foreign language
History 20

SECOND YEAR

One of: English 32, 36, 38, 49
Philosophy 33x, 39x
Psychology 30x

Two of: another Philosophy course
Latin 20, 35x, or 45x
A Senior English
Religious Knowledge
Another language other than English

THIRD YEAR

English 32, 36, 38, or 49 (one not previously taken)
Philosophy 43x, 47x
Psychology 40x

One of: another Philosophy course
A Senior Latin
Another Senior English
Another language other than English
Religious Knowledge

Courses

LATIN

25x. Introduction to Mediaeval Latin: Cicero,, De Amicitia; St. Ambrose. Hymns and Homilies; St. Augustine, Confession; a comparative study of the thought and style of Cicero and St. Augustine; syntax and composition. 3 hours.

35x. Survey of Mediaeval Latin: From the death of St. Augustine to the 12th Century; lectures on Latin style and culture of the period; syntax and composition. 3 hours.

PHILOSOPHY

20x. An Introduction to Philosophical Problems: Along with an historical approach, the solutions of various philosophers are assessed at their true value. 3 hours.

21x. Formal Logic: the operations of the intellect. Conception, judgment, reasoning. 2 hours.

26x. Natural Philosophy: An introduction to Aristotelian philosophy by a close study of the De Principiis Naturae of St. Thomas. 2 hours.

27x. The History of Pre-christian Philosophy: A survey of philosophy in the Orient and in the Graeco-Roman world from its beginnings to the neo-Platonism of the early Christian period. 2 hours.

30x. A Critical Reading of some of St. Thomas' Writings: concerning Metaphysics, Ethics and Rational Psychology. 3 hours.

31x. Logic: Ancient and Modern. 2 hours.

32x. An Introduction to Ethics. 2 hours.

33x. Metaphysics: An introduction to metaphysics as the science of the first cause of all being. 2 hours.

37x. History of Philosophy: from the time of Christ until 1600 A.D. 2 hours.

38x. The Philosophy of Social Work. 2 hours.

39x. Social Philosophy: Capitalism, individualism, collectivism, authoritarian and corporative state; civil organization and administration; social functioning of modern economic society. 2 hours.

42x. The Philosophy of Marriage. 2 hours.

43x. Metaphysics: God the first cause: The demonstration by reason of the existence of an uncaused cause of all being; an examination of atheism, agnosticism and pantheism. 3 hours.

44x. The Philosophy of Education. 2 hours.

45x. Medical Ethics. 2 hours.

47x. Modern Philosophy: The history of philosophy from the Renaissance to the present day. 3 hours.

48x. Politics: A study of the political philosophy of Aristotle and St. Thomas, together with a survey of the dominant political theories of our own day.

251x. Formal Logic: The operations of intellect. Conception; Judgment; Reasoning. 2 hours.

252x. General Ethics: The last end of man. The norm of mortality; law; reason and conscience. Habits and virtues; the role of passion. Right and duty. 3 hours.

257x. The History of Pre-Christian Philosophy: A survey of philosophy in the Orient and in the Graeco-Roman world from its beginnings to the neo-Platonism of the early Christian period. 2 hours.

260x. Natural Philosophy: An introduction to Aristotelian philosophy by a close study of the De Principiis Naturae of St. Thomas. 2 hours.

350x. Psychology: The Nature of Man: Man's soul and its essential qualities; the union of soul and body in man; personality; the origin and the immortality of the human soul. 3 hours.

351x. Metaphysics: An introduction to metaphysics as the science of the first causes of all being. 3 hours.

357x. History of Philosophy from the time of Christ to 1600 A.D. 2 hours.

358x. Social Philosophy: Capitalism, individualism, collectivism; authoritarian and corporative state: civil organization and administration; social functioning of modern economic society. 2 hours.

450x. *Psychology: Dynamology:* *Vegetative powers; sensation and perception;* internal senses, feeling and emotion; reflex behaviour, intellectual operations; the unconcscious; abnormal phenomena; the faculty theory and modern psychological research. 3 hours.

451x. Metaphysics: God, the First Cause: The demonstration by reason of the existence of an uncaused cause of all being; an examination of atheism, agnosticism and pantheism. . 3 hours.

452x. Politic:s A study of the political philosophy of Aristotle and St. Thomas together with a survey of the dominant political theories of our own day. 2 hours.

457x. Modern Philosophy: The history of philosophy from the Renaissance to the *present day.*

PSYCHOLOGY

20x. The faculties and functions of man: Sensation, perception, intellection, *volition. Personality and individual differnces.* 3 hours.

30x. The Nature of Man: Man's soul and its essential qualities; the union of soul and body in man; personality; the origin and the immorality of the human soul. 3 hours.

40x. Dynamology: Vegetative powers; sensation and perception; internal senses, feeling and emotion; reflex behavious, intellectual operations; the unconscious; abnormal phenomena; the faculty theory and modern psychological research. 3 hours. research. 3 hours.

RELIGIOUS KNOWLEDGE

20x. The Life of Christ: as found in the Gospels. 2 hours.

22x. Christian Ethics: The last end of Man. The norm of morality; Law; reason and conscience. Habits and virtues; the role of passion. Right and duty. 3 hours.

30x. Theology: Rational defence of Christian revelation; the existence of God; the fact of revelation; the Church of Christ; the sources of revelation.

37x. Church History: Christian antiquity and mediaeval church history from the birth of Christ to the year 1500 A.D. 2 hours.

40x. Theology: A study of revealed truths; God and creation; sin and Redemption; supernatural life; the channels of the supernatural life. 2 hours.

47x. Church History: The Reformation and modern church history from 1500 A.D. to the present day. 2 hours.

SUMMARY OF REGISTRATION IN THE FACULTY OF ARTS AND SCIENCE, 1962-63

Year in Course		University College	Middlesex College	College of Music	Huron College	Ursuline College	College of Christ the King	St. Peter's College	Totals	
Full-time Students: Undergraduate										
Preliminary (without Senior Matriculation)		.....	.....	.....	14	17	.....	.....	31	
First		588	390	24	224	72	102	34	1434	
Second		419	418	20	142	55	77	17	1148	
Third		466	212	12	127	36	72	12	937	
Fourth		183	.....	.....	10	.....	1	.....	194	
Part-time Students:									———	3744
Undergraduate		40	4	1	4	5	35	3	92	92
Correspondence	477	.....	.....	.....	.....	.....	.....	.....	477	
Summer School	1662	.....	.....	.....	.....	.....	.....	.....	1662	
Extension	871	.....	.....	.....	.....	.....	.....	.....	871	
TOTALS	3010	1696	1024	57	521	185	287	66		3010
										6846
Duplicates										748
										6098

SUMMARY OF REGISTRATION IN THE WHOLE UNIVERSITY, 1962-63

Faculty of Graduate Studies:			
Arts and Science	222 full-time, 38 part-time students	260	
Business Administration	215 full-time, 1 part-time student	216	
Medicine	27 full-time, 1 part-time student	28	
Nursing	7 full-time, 3 part-time students	10	
			514
Undergraduates:			
Faculty of Arts and Science	*University College, Middlesex College, and the College of Music*	2777	
	Summer School, Correspondence and Extension students, less duplicates	2262	
	Affiliated colleges	1059	
			6098
School of Business Administration	Third Year Honors students 66, Fourth Year Honors students 64		130
Faculty of Engineering Science	207 full-time, 8 part-time students		215
Faculty of Law	123 full-time students		123
Faculty of Medicine	232 full-time, 1 part-time student		233
School of Nursing	189 full-time students		189
UNIVERSITY TOTAL ENROLMENT	6443 in the constituent University, 1059 in the affiliated colleges		7502
	4990 men, 2512 women		
	5096 full-time, 2406 part-time students		
	8250 gross total, less 748 duplicates		7502

INDEX

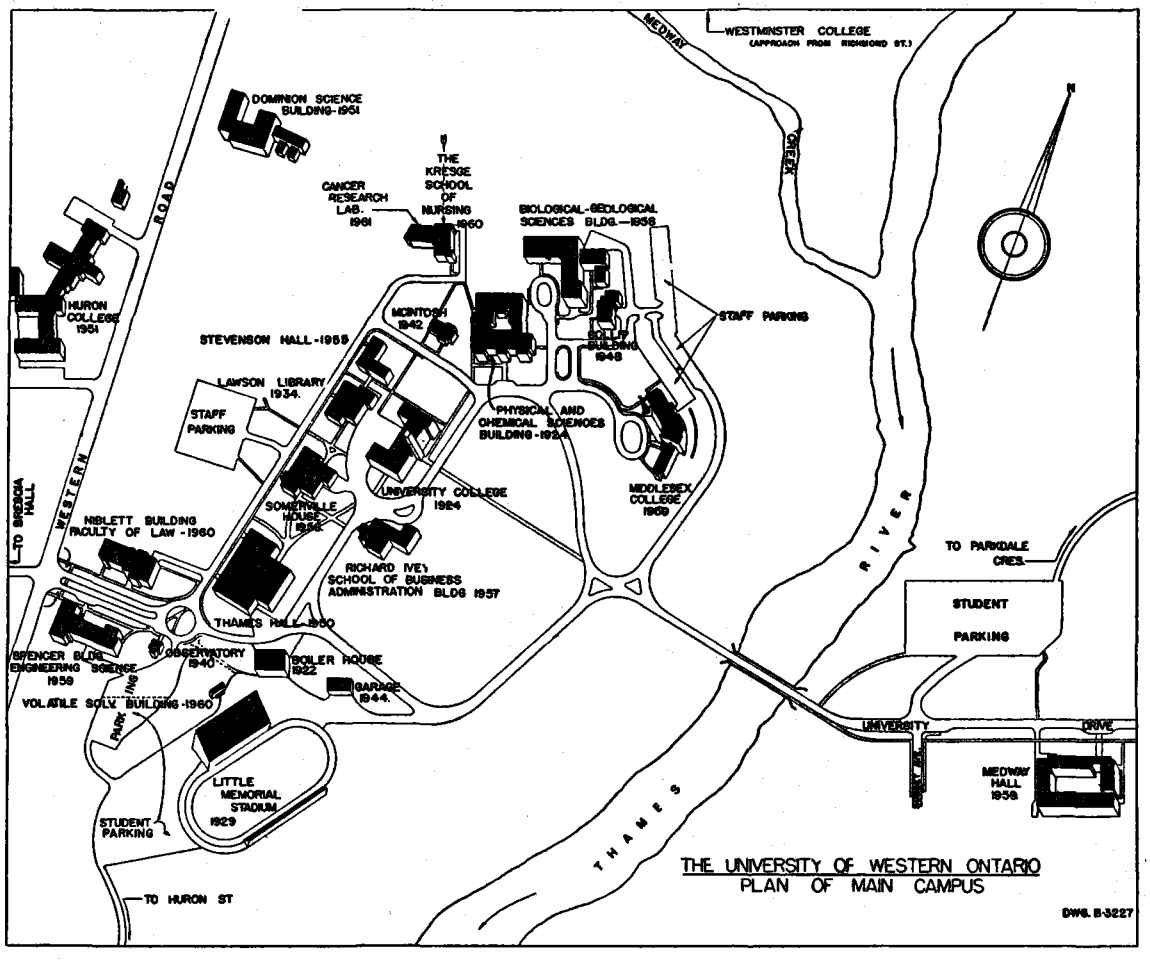
Academic Calendar iii
Academic Regulations 27
Administrative Departments 4
Admission 6
Affiliated Colleges 122-134
Appeals and Petitons 31
Attendance at Lectures 27
Board of Governors 2
Brescia College 125
Buildings Directory ..... Inside Front Cover
Bursaries and Loans, Admission 23
Bursaries and Loans, Undergraduate 24
Christ the King College 130
College of Music 118
Colleges of the University 68-115
Conduct of Students 11
Contents v
Correspondence Courses 116

Courses and Programs:

	Program	Course Descriptions
Astronomy	45	95
Biology	46	68, 113
Botany	46	68
Business Administration	43, 47	70
Bus. Admin. and Secretarial Science	47	70, 112
Chemistry	48	71
Classics	48	73
Comparative Literature	49	
Computer Science		95
Economics	49	76
English	50-53	79
French	50, 54, 61	108
General	34-44	68-115
Geography	55	82
Geology	55	84
Geophysics	56	86
German	50, 56, 58, 64,	86
Greek	48, 59	74, 125
Hebrew		88
History	51, 57, 58	88
Home Economics	40	127
Italian	61	110
Journalism	58, 59	90
Latin	48, 51, 54, 59	73, 132
Mathematics	59, 66	91
Mititary Studies		95
Modern Languages	61	86, 107, 111
Music	41, 62, 63	118
Nursing	42	
Philosophy	52, 63, 64	96, 128, 133
Physical and Health Education	65	98

	Program	Course Descriptions
Physics	66	100
Politics	67	104
Premedicine	43	
Psychology	64, 67	105, 129, 134
Religious Knowledge		125, 130, 134
Romance Languages	61	107
Russian	49	111
Secretarial Science	39	112
Sociology	64	78, 130
Spanish	61	110
Theology	39, 124, 132	
Zoology	46	113

Degrees 1
Diplomas 1, 59
Examinations, Regular 28
Examinations, Comprehensive 29
Examinations, Special 29
Examinations, Supplemental 28
Expenses 9
Extension Department 116
Faculty of Arts and Science 5
Failures 30
Fees 8
Financial Assistance 23
General Programs ..... 34 - 44
Grade XIII Examinations 6
Grading System 29
Health Services 10
High School Assistants' Certificates, Types A and B 32
Housing 10
Huron College 122
Inspectors' Certificates 32
Insurance, Student Health 10
Length of Programs 27
Libraries 2
Medals 22
Middlesex College 68-115
Military Studies 12
Number System, Explanation of 33
Officers of Instruction, Faculty of Arts and Science 68-132
Residences 10
St. Peter's and Christ the King Colleges 130
Scholarships, Admission 13
Scholarships, Undergraduate 16
Senate 3
Special Students 7
Special Certificates (High School Assistants', Type A and B) 32
Summer School 116
Teachers' Courses and Certificates 31
Trois-Pistoles Summer School 117
University Officers 4
University College 68-115



FOR DIRECTORY SEE INSIDE FRONT COVER

Printed by A. Talbot Lt
London, Ontario