

**SAINT
MARY'S
UNIVERSITY**
HALIFAX, NOVA SCOTIA



**1973-74
ACADEMIC
CALENDAR**

- 1. Main Administration Building
- 2. Chemistry Biology Building
- 3. Bishop Burke Library
- 4. Student Center
- 5. Alumni Arena
- 6. Practice Sports Field
- 7. Huskie Stadium
- 8. Ignatius Loyola Academic Complex
- 9. Ignatius Loyola Residence - High Rise 11
- 10. Dining Hall & Swimming Pool
- 11. Vanier Residence
- 12. Edmund Rice Residence - High Rise 1
- P. Parking



DAL



SAINT MARY'S UNIVERSITY

**General Calendar
for the academic year
1973-74**

CONTENTS

ACADEMIC CALENDAR	5
GENERAL INFORMATION	11
History	11
Statement of Objectives	11
Memberships	12
Affiliations	12
Performing Arts	12
Art Gallery	12
Computing Centre	13
Dean of Students	13
Christian Life	14
Student Behaviour	14
Medical and Health Services	19
Counselling Services	15
Student Organizations	15
Department of Athletics	16
UNIVERSITY RESIDENCES	20
FINANCIAL AID	25
Scholarships and Bursaries	25
Funds Administered by Saint Mary's University	25
Scholarships	25
Bursaries	26
Funds Administered by Donor	28
Scholarships	28
Bursaries	31
Funds Administered by Provincial Government	32
Canada Student Loan Plan	32
FINANCIAL INFORMATION	35
ADMISSION INFORMATION	39
Application	39
Admission Requirements	39
Mature Students	40
Admission to Advance Standing	42
Registration	45
ACADEMIC INFORMATION	46
Examinations and Grades	46
Special Programmes	49
(Summer School & Extension; Adult Studies Series)	50
FACULTIES AND COURSES	53
Course Numbering System	53
Arts	53
Science	54
Commerce	58

Engineering	62
Engineering Management	65
Honours Degrees	66
Education	68
Pre-Professional Courses	70

GRADUATE STUDIES	72
Education	74
History	74
Philosophy	75

COURSES OF INSTRUCTION	79
Accounting (See Business Administration, Page 95)	
Anthropology	79
Asian Studies	84
Astronomy	85
Biology	87
Business Administration	95
Chemistry	109
Classics	113
Latin	114
Greek	115
Classical Literature	115
Classical History	116
Commercial Law	117
Economics	117
Education	126
Engineering	133
English	138
Geology	148
History	152
Mathematics	164
Modern Languages	172
French	173
German	179
Spanish	180
Philosophy	183
Physics	193
Political Science	199
Psychology	205
Religious Studies	210
Sociology	215
West European Studies	221

BOARD OF GOVERNORS	227
---------------------------------	-----

ACADEMIC SENATE	228
------------------------------	-----

FACULTY	229
----------------------	-----

ADMINISTRATION	241
-----------------------------	-----

ACADEMIC CALENDAR YEAR

1973—1974

MAY

7	Monday	Spring Convocation.
14	Monday	Registration for first summer school.
15	Tuesday	First summer session begins.

JUNE

28	Thursday	Examinations for first summer session.
----	----------	--

JULY

3	Tuesday	Registration for second summer session.
4	Wednesday	Second summer session begins.
13	Friday	Last day for receiving applications for supplemental examinations in courses taken during the regular academic year and in the first summer session.

AUGUST

17	Friday	Second summer session examinations.
----	--------	-------------------------------------

SEPTEMBER

6-7	Thursday-Friday	Supplemental examinations for Academic year 1972-1973 and first summer session, 1973.
10-15	Monday-Saturday	Registration for 1973-74 academic year.
10	Monday	(a) * Registration for all SENIOR students (i.e. those with 13.0 course credits or more): 8:30 a.m. — 11:30 a.m., 1:00 p.m. — 4:30 p.m.
		(b) Registration for all BACHELOR OF EDUCATION students: 8:30 a.m. — 11:30 a.m., 1:00 p.m. — 4:30 p.m. ATTENTION: Students in the Bachelor of Education programme are advised that this academic calendar year is subject to change in order to accommodate the special needs of their programme.
		(c) Registration for EVENING DIVISION students (NEW ADMISSIONS): 7:00 p.m. — 8:30 p.m.
11	Tuesday	Registration for all JUNIOR students (i.e. those with 8.0 — 12.5 course credits): 8:30 a.m. — 11:30 a.m., 1:00 p.m. — 4:30 p.m.

12	Wednesday	(a) Registration for all SOPHOMORE students (i.e. those with 3.0 — 7.5 course credits): 8:30 a.m. — 11:30 a.m., 1:00 p.m. — 4:30 p.m. (b) Registration for EVENING DIVISION students (Returning): 7:00 p.m. — 8:30 p.m. (c) Registration for MASTER'S students: 7:00 p.m. — 8:30 p.m.
13	Thursday	(a) Registration for all NEW students with SOPHOMORE standing (i.e. with 3.0 — 7.5 course credits) and TRANSFER students with SOPHOMORE standing or higher: 8:30 — 11:30 a.m., 1:00 p.m. — 4:30 p.m. (b) Registration for EVENING DIVISION students (returning): 7:00 p.m. — 8:30 p.m.
14	Friday	(a) Registration for all NEW students with SOPHOMORE standing (i.e. with 3.0 — 7.5 course credits): 8:30 — 11:30 p.m. (b) Registration for NEW students with FRESHMAN standing (i.e. with 0.0 — 2.5 course credits): 1:00 p.m. — 4:30 p.m.
15	Saturday	Registration for NEW students with FRESHMAN standing (i.e. with 0.0 — 2.5 course credits): 8:30 a.m. — 11:30 a.m.
17	Monday	Instruction begins for all classes. LATE REGISTRATION FEE of \$25.00.
21	Friday	(a) <i>Last date</i> for CHANGE OF REGISTRATION. (b) <i>Final date</i> for LATE REGISTRATION.
OCTOBER		
8	Monday	Thanksgiving Day. No classes.
12	Friday	Last date for application for degrees to be awarded in May 1973.
NOVEMBER		
11	Sunday	Remembrance Day.
DECEMBER		
8	Saturday	Patronal Feast of the University. No classes.

14	Friday	Last day of classes.
17-21	Monday-Friday	Final examinations in first semester courses.
21	Friday	Closing date of the University for the first term.
JANUARY 1974		
7	Monday	Classes resume 8:30 a.m.
7-16	Monday-Wednesday	Confirmation of registration for second semester courses.
25-26	Friday-Saturday	Supplemental examinations for second summer session and first semester courses.
FEBRUARY		
25-March 3	Monday-Sunday	Mid-term study break - no classes.
MARCH		
4-29		Pre-registration for all students for next academic year.
15		Charter Day - Extracurricular activities cease.
APRIL		
11	Thursday	Last day of classes.
12	Friday	Good Friday.
16	Tuesday	Final examinations begin.
26	Friday	Survey Camp begins.
MAY		
13	Monday	Spring Convocation.
14	Tuesday	Registration for first summer session.
15	Wednesday	First summer session begins.
JUNE		
28	Friday	First summer session examinations.
JULY		
2	Tuesday	Registration for second summer session.
3	Wednesday	Second summer session begins.
12	Friday	Last day for receiving applications for supplemental examinations in courses taken during the regular academic year and in the first summer session.
AUGUST		
16	Friday	Second summer session examinations.

(There may be a President's holiday granted during the second term.)

CALENDAR - - - 1973

JANUARY	FEBRUARY	MARCH	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 31	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	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	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	JUNE	JULY	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	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	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	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	OCTOBER	NOVEMBER	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	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	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	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

CALENDAR - - - 1974

JANUARY	FEBRUARY	MARCH	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 31	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	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	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	JUNE	JULY	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	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	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	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	OCTOBER	NOVEMBER	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	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	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	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

GENERAL INFORMATION

GENERAL INFORMATION

HISTORY

Saint Mary's University was founded in 1802 to provide opportunities for higher learning to young Catholic men. Its founder, Reverend Edmund Burke, had meagre resources to work with but, on later being named Bishop with responsibility for Nova Scotia, he continued to support the college as being essential to the development of the Catholic community. It was not until 1841, however, that the Nova Scotia House of Assembly gave formal, if temporary, recognition of its academic role. Its legal status was confirmed in perpetuity by enactment in 1852, but the college had an uncertain existence for many years.

In 1913, the Christian Brothers of Ireland, a teaching order, were invited by the Archdiocese of Halifax to direct the college and its academic programme. In the ensuing years, Saint Mary's became noted for the quality of its undergraduate teaching and developed new programmes, particularly in commerce. Then the Upper Canada Province of the Society of Jesus was invited to administer and teach, and for thirty years — from 1940 to 1970 — the college was under Jesuit supervision. These were years of gradual growth from a college to a university. The traditional emphasis on liberal arts and commerce was extended by the continuing development of science and engineering, and by new programmes in teacher education and extension services.

The transfer of responsibility from the Roman Catholic Archdiocese of Halifax to an independent Board of Governors in 1970 began a new phase in the life of Saint Mary's University. Now a public, co-educational university, functioning within a context of Christian values, it offers a full undergraduate programme in arts, science and commerce, with pre-professional programmes in engineering and teacher education, and graduate study in education and selected disciplines in liberal arts. Five thousand students now enroll in day and evening programmes. The foundations laid by its founder and early teachers, built upon by the commitment to sound education of the Christian Brothers of Ireland, and strengthened by the educational tradition and imaginative leadership of the Canadian Jesuits, provide a stable base for further development.

STATEMENT OF OBJECTIVES

The objects of the University, as defined in the Saint Mary's University Act, 1970, are:

- (a) to promote and disseminate learning and knowledge;
- (b) to give special emphasis to the Christian tradition and values in higher education;
- (c) to provide an atmosphere of freedom, responsibility and mutual respect in the University community;
- (d) to aid in the improvement of society in all ways consistent with these objects.

MEMBERSHIPS

Saint Mary's University is a member of, among others, the following organizations: Association of Universities and Colleges of Canada, Association of Atlantic Universities, Association of Commonwealth Universities, and the International Association of Universities.

AFFILIATIONS

Saint Mary's University has been associated with the Nova Scotia Technical College since 1916, providing the first three years of courses leading to the Degree of Bachelor of Engineering in civil, electrical, mechanical, mining, metallurgical, chemical, industrial and geological engineering.

Formal association also exists between the University and several other institutions, including Ignatius College in Guelph and Regis College in Toronto.

THE PERFORMING ARTS

Saint Mary's University has a Presidential Committee for the Performing Arts made up of faculty, administration and student representatives, who meet regularly to arrange various concerts and recitals by well-known artists. In addition to their public performances many of the artists give informal lunch-hour recitals for students during the course of their regular working day. The 1972/73 Concert Series included artists ranging from the world-famous Berlin String Quartet to the popular Don Warner Big Jazz Band and the Dartmouth Choral Society. Visiting theatre companies and local professional actors have also given special performances.

As part of its expanding cultural programme Saint Mary's appointed internationally known composer and pianist Shulamit Ran in 1972, its first Musician-in-Residence. Besides her two public recitals Miss Ran has undertaken international and regional tours and held workshops and recitals for students on campus.

- The Halifax Classical Guitar Society holds its monthly meetings at Saint Mary's; students who are interested are encouraged to join. The Committee hopes to improve facilities on campus for the practice of piano and other instruments.

SAINT MARY'S UNIVERSITY ART GALLERY

Designed and constructed to National Gallery of Canada standards, the Art Gallery is located on the ground floor of the Ignatius Loyola Building, immediately west of the Gorsebrook Avenue entrance. It was officially opened on October 25, 1971.

The Gallery places major emphasis on displaying works of art in painting and sculpture. The exhibitions are changed normally every month. Students are welcome at any time, including exhibition openings.

C. Anthony Law, artist in residence at Saint Mary's since 1967 makes his skills and experience available to students on a regular basis in weekly painting classes and in occasional lectures on Canadian art.

The Gallery's rental service provides students and the University staff with the opportunity to rent original paintings, drawings and prints for a normal charge (\$1.00 per month). The proceeds are used entirely for the acquisition of additional works for the loan collection.

The Art Gallery is also active in presenting various cultural activities such as concerts, recitals, poetry readings and film showings. As often as possible the recitals are held during lunch hour so that most students and staff can attend.

Under the direction and co-ordination of its Art Gallery, Saint Mary's University also maintains extension galleries at the Miners' Museum Glace Bay, Nova Scotia and at Canadian Forces Base Greenwood. Extension Services are provided to the Arts and Culture Centre in Lunenburg.

Curator Robert Dietz administers the University Art Gallery, its extension galleries and services and the cultural activities they sponsor. Students are invited to consult with him on any question or interest of visual or auidial art.

COMPUTING CENTRE

The University Computing Centre, located on the third floor of the Chemistry-Biology building, houses the I.B.M. 1130 computing system which is used by faculty, students and the administration. The system is adaptable to scientific, business and non-numeric applications.

The Computing Centre staff conduct seminars on topics in computing and provide a variety of services to computer users. Programme advisors are on duty during normal workings hours and will give demonstrations on request. They provide assistance in such areas as statistics, numerical methods and the use of various programme packages (I.B.M. scientific, commercial, engineering and statistical packages). Computer programme and reference library facilities are maintained, and limited keypunching and related services are available. Research groups may either programme their own work or avail themselves of the programming services provided by the Computer Centre. A high speed counter-sorter is also available for use in conjunction with the installation or for small data-processing operations.

DEAN OF STUDENTS

The Dean of Students holds a wide responsibility for co-ordinating and developing all student activities not specifically academic in nature. His office functions as a focus point and general depository where students and student organizations may find information and guidance from experience in student affairs that has accumulated through the years.

The Dean serves as liaison officer and University Representative to the student government and other student organizations. He is also delegated to represent the University to the Canada Manpower Centre.

STUDENT BEHAVIOUR

Saint Mary's University accepts responsibility for creating on campus an atmosphere in which students are encouraged to observe the elementary rules of good behaviour and to show both self-respect and respect for others. It looks to them to display good taste in their dress, speech, and general manner.

It is assumed that students come to the University for a serious purpose and will conform to duly established customs, policies, and rules. As adults students must accept full responsibility for their actions. On the other hand, the University cannot remain completely unconcerned in the matter. However, it sees little need to issue detailed regulations governing discipline, since self-discipline should be the aim of each individual student. The University's few basic regulations are designed to create a favourable climate for the acquisition of personal self-control and for the development of a strong human spirit to meet responsibilities both as a student and later as a member of society.

The University reserves the right to take appropriate action to prevent any individual or group from interfering with the learning process, and to censure or penalize students who are guilty of breaches of school discipline. Registration in the University is considered as an acceptance of regulations. It should be understood that the University reserves the right not only to suspend or dismiss students, but also to name the conditions under which they may remain enrolled.

CHRISTIAN LIFE

Under the specific instructions of its incorporating Act of 1970, Saint Mary's endeavours to maintain the kind of atmosphere in which concerned Christians are able to search for and spell out a meaningful realization of their convictions. An important aspect of this continuing sense of the University's religious tradition is the opportunity offered for participation in liturgical functions and other religious programmes.

Chaplains: Saint Mary's University offers administration, faculty and students the services of Christian chaplains, Catholic and Protestant. They are available at their campus office and elsewhere throughout the campus for personal and religious counselling. They plan and co-ordinate the religious activities on campus: liturgy, retreats, guest speakers, discussion groups. The chaplains publish the times and locations of all religious activities.

Religious Services: Weekday and Sunday liturgies are offered on campus in the Liturgical Centre, located in the Student Centre, and in the Residence:

University Religious Events: the academic year is especially marked by inviting the University Community to participate in religious services, on dates to be announced, during:

- September: as part of the University Day celebrations.
November: to commemorate the traditional Patronal Feast of the University, the Feast of the Immaculate Conception, December 8.
May: Baccalaureate Service, as part of the Graduation Ceremonies.

MEDICAL AND HEALTH SERVICES

The Nova Scotia Medical Services Insurance Plan came into effect on April 1, 1969. The details of this plan may be obtained through the Department of Health, Province of Nova Scotia. The plan covers all residents of Nova Scotia.

All other provinces have Medical Services Insurance plans similar to the one in effect in Nova Scotia. It is the responsibility of each student to insure himself in his home province.

All foreign students who are not eligible for coverage under the Nova Scotia Medical Services Insurance plan (e.g., those students who do not intend to remain in Nova Scotia for the duration of their university education) are covered by the University under a private Insurance Company.

The University has retained a medical doctor as Director of Medical Services. The doctor's office is located on campus, and his services are available to all students.

The University accepts no responsibility for injuries or loss of time incurred by students while taking part in student activities.

All students are responsible for their own hospitalization expenses.

COUNSELLING SERVICES

The Counselling service offers guidance and counselling, without charge, to any regularly enrolled student. Counsellors with professional training are available to assist all students in matters of personal, social, educational, or vocational adjustment.

Types of Service — Counselling on an individual basis; testing as required; referral to other staff members and professors; referral through University Health Services for psychotherapy or medical advice and assistance where required. Occupational information is also available and close liaison is maintained with the Canada Manpower Centre on Campus.

Location — the offices of the counselling staff are located on the fourth floor of the Student Centre building. Office hours are from 9:00 a.m. to 5:00 p.m. Provision will be made for emergency calls beyond these hours.

Appointments can be made by phoning 422-7361, Local 181 or by visiting

the office of the secretary in Room 411.

Staff: L.W. Smith, Head of Counselling Services - Room 410, Local 181.
Rev. J.J. Hennessey, S.J., Counsellor - Main Building S101, Local 141.
Miss B. Hubley, Secretary - Room 413, Local 221.

The Department of Manpower and Immigration

Canada Manpower Division — in co-operation with Saint Mary's University, maintains a full-time Student Placement Office on the campus on a year-round basis. The purpose of this office is to assist graduates and undergraduates to obtain permanent, summer or part-time employment, and to assist local and national employers who wish to recruit at Saint Mary's University.

STUDENT ORGANIZATIONS

The extracurricular organizations listed below are officially recognized by the University. Students who represent the University in any public activity — dramatics, debating, oratorical contests, or athletic competition, or who hold office in any student organization, must be in good academic standing at the time of their election or appointment.

Students' Council

The Students' Representative Council (SRC) is the official representative body of the Students' Association. Its purpose is to provide extracurricular services for the students and to represent their best interest to both the administration and the faculty. The council sponsors clubs, societies, and social events and maintains a rapport with the rest of the University community. The hope of the Council is to add to the general quality of life at the University so that students may enjoy a well-rounded experience at Saint Mary's.

S.M.U. Kamp

In operation since December 1969, this organization works solely for the benefit of underprivileged children in the Halifax-Dartmouth metro area. The club's intention is to bring these children into contact with many entertaining and educational activities not otherwise open to them. Working from the Edmund Rice Residence, the organization carries on an extensive list of projects, including everything from swimming instruction and creative arts to field trips to many of Nova Scotia's historical and vacation parks. During the months of July and August, the club conducts a series of "camps" for children between the ages of seven and eleven.

The Dramatic Society

The Dramatic Society, one of the most active societies on campus, is unique in being both academically sponsored and at the same time a student

organization. With the help of competent professionals, University faculty, and a large number of students, the Society each year presents a number of workshops, one-act and full length plays. In offering extra-curricular education in all phases of drama, it hopes as well to provide enjoyable and instructive experience in the form of acting, scene design and building, lighting, painting, make-up, costume design and making, properties, and promotion and publicity. Membership is open to anyone in the University community.

The Dramatic Society also co-operates in the entertainment programmes offered by other student organizations and is responsible for management of the stage and its equipment whenever used.

The Engineering Society

The Engineering Society undertakes various activities such as student-faculty smokers and tours of local industrial establishments with the aim of helping students become better acquainted with one another and with matters of interest to engineers. The Society also sponsors the annual Engineering Student Talent Show.

Psychology Club

The aim of this club is to promote general interest and education in the field of psychology and to provide a liaison between the psychology department and psychology students. Informal in structure, the club serves both an academic and social function. Membership is open to any full-time student.

Political Science Association

The organization has an elected executive, nonexecutive posts, and committees at large. It is our aim to promote the social consciousness of our members to enable them to utilize their full potential as students and as citizens.

The Chemical Institute of Canada

(CIC) Student Chapter is open to Chemistry and Chemical Engineering Students. Through affiliation with the national organization, an educational and social programme is provided together with opportunities for closer contact with the faculty.

Saint Mary's University Biological Society

The Society was formed to stimulate student interest in the natural sciences. The aims have been realized by field trips, movies, and visits to local scientific institutions.

The Journal

The Journal is the official undergraduate newspaper of the Saint Mary's

University Students' Association, providing coverage of campus news events, as well as events in the community. The Journal is a member of the Canadian University Press.

Chinese Students Association

This Association is open to all students. The aim of the Association is to promote knowledge of Chinese culture and to provide social and recreational activities oriented to the interests of all students.

Radio Saint Mary's

Operating from the 5th floor of the Student Centre, Radio Saint Mary's entertains and informs students. This station is staffed entirely by Saint Mary's University students and broadcasts 95 hours a week. Involvement includes news writing, announcing, programming, and engineering.

Yearbook

The Yearbook's main aim is to provide an interesting and a well-presented documentation of student life on campus. The book is issued once a year and is sponsored by the Students' Representative Council. Student participation and assistance is welcomed.

The Saint Mary's Caribbean Student Society

The Saint Mary's Caribbean Student Society was founded with the recognition of West Indian students as a unique element in the social structure of this University. According to its constitution, the society tends to encourage co-operation among Caribbean students in this and all Canadian universities, and between ourselves and Canadians, as well as other foreigners. This is done with an eye toward helping out students in any way possible, by keeping in touch with West Indian Affairs, and fostering the cultures of the Caribbean. These aims are pursued with an occasional fete or exhibition, but mainly by trying to be what we are, without getting "bowled behind we back".

Chess Club

The Chess Club in recent years has been suffering from a small membership; however, it is ever increasing and we look forward to having a very active year in 1973-74. There will be a continuation of the annual tournament and hopefully involvement with other universities.

Black Students Organization

Black Students Organization started in September 1971 at Saint Mary's University. One of its main functions is the appreciation and dissemination of knowledge relating to Black history, culture and experience. It is a forum for the expression of Black Student opinion. It is also active in developing

community programmes that are of relevance to the Black community in Nova Scotia.

DEPARTMENT OF ATHLETICS

The Department organizes a variety of athletic activities on a number of different levels providing an opportunity for every student at Saint Mary's University to participate in some aspect of the total programme.

Intramural and Recreational Programme:

The Intramural Programme is designed to promote fun, recreation, and sportsmanship by encouraging students to compete on a friendly basis. Emphasis is placed on participation. Activities include: hockey, basketball, soccer, softball, volleyball, bowling, football, and table tennis.

On a less competitive level, the programme offers the following recreational activities: Judo Club, Badminton Club, Ski Club, skating, weight lifting, swimming, and ladies' keep-fit classes.

In addition to the activities above, a large variety of equipment is available on a sign-out basis for recreation at the student's leisure.

Representative Programme:

Saint Mary's University is a member of the Atlantic Men's and Women's Intercollegiate Athletic Associations, and participates in regularly scheduled and tournament sports, competing with other universities in the Atlantic region.

The sports included in the varsity programme are:

MEN

Basketball (Varsity & Junior Varsity)
Football
Rugby (N.S.R.F.U.)
Soccer (Varsity & Junior Varsity)
Hockey (Varsity & Junior Varsity)
Badminton
Curling
Golf
Judo
Wrestling
Tennis
Skiing
Volleyball

WOMEN

Basketball
Field Hockey
Ice Hockey (Exhibitional)
Badminton
Curling
Tennis (Exhibitional)
Skiing (Exhibitional)
Volleyball

Facilities on campus include the gymnasium, hockey arena, soccer field,

football field, recreation room, combative room, weight room, and swimming pool. The Athletic Department arranges for off-campus facilities such as golf, tennis, curling and skiing.

ATHLETIC DEPARTMENT — 4th FLOOR STUDENT CENTRE

STAFF:

Director of Athletics	Robert Hayes, B.A.
Arena Manager and Hockey Co-ordinator	Robert Boucher
Football Co-ordinator	Alan Keith, B.A., B.P.E., B.Ed
Basketball Co-ordinator	Brian Heaney, B.Sc.
Soccer and Volleyball Co-ordinator	Roy Clements
Equipment Control and Training	Gordon MacLeod
Women's Athletic Co-ordinator	To be announced

UNIVERSITY RESIDENCES

One of Saint Mary's University's distinctive features is its new residence complex. Approximately one third of the student body reside on its beautiful 30-acre campus. The University does not require students to live in residence; however, it highly recommends residence life and encourages all first year students from outside the metropolitan area to reside in the modern on-campus facilities.

The residence complex includes the 17-storey Edmund Rice Residence, the four-storey Vanier House and the twenty-storey Ignatius Loyola Residence. Constructed during the last four years and awarded a 1971 Canadian Housing Design Council award, these residences are ideally located for Saint Mary's students. The residence complex is linked together and serviced by a students' cafeteria, mini-market, beauty salon, barber shop, a branch of the Royal Bank of Canada, laundromat, art gallery, swimming pool, and above-ground as well as underground parking. A further attraction of the Ignatius Loyola Building is the Reverend M.W. Burke-Gaffney Observatory, whose facilities are open to students and the public. For further information see page (85) under Astronomy.

For the 1973-1974 academic year, female resident students will be accommodated in Vanier House and on three floors of the Edmund Rice Residence.

EDMUND RICE RESIDENCE

This 17-storey building consists of 16 floors of furnished apartments, six per floor, accommodating four students each. Each apartment has a living room, bath, two double bedrooms and a kitchen. There are no single rooms available in this structure. Students living in apartments usually prepare their own meals. However, some students choose to eat in the cafeteria on either a 9 meal per week board plan or on an a la carte basis. The fee (room only) for the 1972-1973 term was \$540. per student.

Fees for the 1973-1974 academic year will be published not later than June, 1973 in a *Financial Information* booklet that should be read in conjunction with, and is to be considered part of, this Calendar.

VANIER HOUSE

Comprised of four separate four-storey houses, Vanier House offers double and single accommodations. On each floor, exclusive of the first which provides under-cover connection with the other houses and with the Edmund Rice and Ignatius Loyola Residences, there are three suites, each with six students occupying two single and two double rooms, who share a bathroom. There is a common lounge on each floor, but no cooking facilities of any kind. Therefore, students living in this area of the residence are on a board plan, providing either 21 meals or any 15 meals per week, with unlimited second servings. The 1972-1973 fee schedule for Vanier House was:

Single room with 21 meals per week	\$1,050.
Single room with 15 meals per week	\$ 995.
Double room with 21 meals per week	\$ 975. each occupant
Double room with 15 meals per week	\$ 920. each occupant

Fees for the 1973-1974 academic year will be published not later than June, 1973 in a *Financial Information* booklet that should be read in conjunction with, and is to be considered a part of, this Calendar.

IGNATIUS LOYOLA RESIDENCE

The structure consists of 20 floors of residence in two separate wings. The south wing is assigned to married students and consists of 103 apartments of three sizes — one bedroom, two bedrooms, and a larger two bedroom. Application for accommodation should be made to the Director of University Residences. Occupancy of married students' apartments is on an annual lease basis. The north tower consists of suites for six single male students who live in four single rooms and one double. Sharing a bathroom, these six share responsibility for general tidiness of the suite between weekly cleanings by University staff. There is a common lounge on each floor for the occupants of the three suites on that floor and their guests. As in the Vanier House, cooking facilities are not available so that students in the Ignatius Loyola Residence are on a board plan which consists of either 21 meals or any 15 meals per week, with unlimited second servings. The fee schedule for the "responsibility suites" in the Ignatius Loyola Residence for the 1972-1973 academic term was:

Single room with 21 meals per week	\$1,050.
Single room with 15 meals per week	\$ 995.
Double room with 21 meals per week	\$ 975. per occupant
Double room with 15 meals per week	\$ 920. each occupant

Fees for the 1973-1974 academic year will be published not later than June 1973 in a *Financial Information* booklet that should be read in conjunction with, and is to be considered a part of, this Calendar.

Additional information about residence may be obtained by writing to the Deans of Residence.

OFF-CAMPUS HOUSING

In co-operation with the Students' Representative Council the Residence office maintains a list of off-campus housing available to those students desiring accommodations outside the University.

PARKING FEE

Residence fees do not include on-campus parking for which a separate fee is charged.

Outside Parking	\$10. per year.
Underground Parking	\$12. per month, or \$100 for twelve months, payable in advance.

Parking Regulations and parking fees are stipulated each year in a brochure titled *Campus Parking Regulations — Saint Mary's University*, which is available to all faculty, students and staff during registration or at any time at the Security Office.

BULLETIN BOARDS

Student announcements and notices must be in good taste and must be placed on the bulletin boards provided. They must, in addition, be approved by the Dean of Students and in some instances by the Students' Representative Council.

USE OF GROUNDS AND BUILDINGS

Requests for the use of University grounds and buildings for other than individual student activities must be made through the office of the Dean of Students.

FINANCIAL AID

FINANCIAL AID

Scholarships and Bursaries

Financial assistance is available to students at Saint Mary's University from four main sources: scholarships, bursaries, Canada Student Loans, and Provincial Government Bursaries. The scholarships and bursaries are administered either directly by the donor or by the Director of Financial Aid at Saint Mary's University (Rooms 405 and 406 Student Center). Government Loans and Bursaries are administered by the student's provincial government, in accordance with the Canada Student Loans Plan.

All financial aid is dependent on a student's presenting a satisfactory record of academic achievement when entering Saint Mary's. Renewals or continuance of aid depend on maintaining an adequate academic record while studying at the University.

The awarding of scholarships, and in some instances of bursaries, as well as the renewal of such awards, is dependent on excellence in academic achievement.

FUNDS ADMINISTERED BY SAINT MARY'S UNIVERSITY

1. Scholarships

Awards of up to \$1,500 are offered to students presenting excellent academic records when entering the university. Students who wish to make application for these scholarships must have an average of 80 per cent or over in their high school work. In addition, special awards are made annually to leading students in the graduating classes at Saint Patrick's High School, Halifax, Nova Scotia; Saint Malachy's High School, Saint John, New Brunswick; Gonzaga High School, St. John's, Newfoundland; and Brother Rice High School, St. John's, Newfoundland.

Students who have completed one or more years in a university are also eligible for scholarships, even though they were not given an award at entry. All students who have an average of at least B in their university work are eligible to apply for these awards.

Each scholarship is awarded on merit for one year only. However, scholarships may be renewed each year provided academic achievement is maintained. Applications for awards or renewal of awards must be made by June 30th each year to the Director of Financial Aid.

Included in the scholarships administered by Saint Mary's University are the following endowed gifts:

Brother Stirling Scholarship (\$600)

Donated by Mr. John H. Dickey. Open annually to an entering student.

Ashwood Scholarship (\$200)

Open annually to all students

Flinn Scholarships (two awards of \$250)

Open annually to all students.

Mary C. Daley Scholarship (\$100)

Awarded in alternate years. Open to all Students.

Eleanor M. Florian Scholarship (\$300)

Open annually to all students.

Duncan W. Lynch Memorial Scholarship (\$400)

Open annually to a Catholic student from Dartmouth.

John Glenister Memorial Scholarship (\$150)

Open annually to all students.

Nova Scotia Light and Power Company Scholarship (\$300)

Open annually to a Science or Engineering student.

Joseph E. Donohue Memorial Scholarship (\$400)

Donated from the estate of Eva Mae Donohue in memory of her late husband and open annually to all students at Saint Mary's

Errol Davison Memorial Award (\$500)

A scholarship to be held by a student in the Commerce Faculty in either the third or fourth year. High academic standing is required, although financial need will be considered. This scholarship is granted by the partners of H.R. Doane and Company in memory of Mr. Davison, a former partner of the firm and an alumnus and friend of Saint Mary's.

Nova Scotia Power Commission Centennial Scholarship — Engineering

The Nova Scotia Power Commission offers four permanent scholarships tenable at the Nova Scotia Technical College in Halifax and open to competing students from the following universities: Acadia, Dalhousie, Mount Allison, Saint Francis Xavier, Saint Mary's. Candidates must be residents of the Province of Nova Scotia. Each scholarship is valued at \$850 per year and is applicable to the electrical, mechanical, civil or industrial engineering disciplines. Applications should be made in writing to the Dean of Engineering of applicant's university by February 28 of each year. Further information is available from the Director of Financial Aid.

II. Bursaries

Students performing satisfactory academic work, though not of scholarship standing, are given financial aid through bursaries and assistantships. In these cases the criterion for an award is financial need. In addition, a number of positions as course readers and laboratory demonstrators are

open annually to junior and senior students; remuneration is based on hours of employment. All inquiries concerning bursaries and assistantships should be made to the Director of Financial Aid (Student Center: Rooms 405 and 406).

Included in the bursaries administered by Saint Mary's University are the following endowed gifts:

The Raymond W. Ferguson Bursaries

Two bursaries of \$400 each per year to be awarded annually by the scholarship committee after consulting the Dean of the Faculty of Commerce. The applicant must be a Nova Scotian in his junior or senior year who is not receiving another bursary scholarship or prize in that year exceeding \$300. Financial need must be evident and the candidate should show academic ability and possess those qualities of character and initiative which indicate potential leadership in the business world.

Rebecca Cohn Memorial Bursary (\$100)

Open annually to all students

Bernard Zwicker Memorial Bursary (\$150)

Donated by Mr. and Mrs. Ivan Zwicker in memory of their son. Awarded in alternate years commencing 1969-70. Open to a student in the Commerce Faculty.

Lord Nelson Hotel Ltd. Bursary (\$250)

Preference is given to applicants from the Atlantic Provinces. Open annually to students in either their Freshmen or Sophomore year.

The Institute of Chartered Accountants of Nova Scotia Centennial Bursary

A bursary to be held by a student in any faculty, under the following conditions: the student must be a resident of Nova Scotia wishing to further his postgraduate education by entering the accounting profession with the intention of becoming a Chartered Accountant in Nova Scotia. The student must be in either of the last two years of his course. Ability and financial need are taken into consideration in making the award.

The Birks Family Foundation Bursaries

The Birks family Foundation has established a plan of annual contributions to the Student Aid Fund of recognized Canadian universities. The bursaries are available to all full-time students recommended by the university. The number and amount of such awards may vary annually, depending upon the funds available from the Foundation for the purpose.

The IBM — Canada Bursary Programme

IBM makes available \$1,000 annually to Saint Mary's University to provide undergraduate bursaries. The university has full discretion in the manner in which this \$1,000 is dispensed both as to academic standing and financial need. This award, or parts thereof, may be held concurrently with other awards, provided the university is satisfied that such a need exists.

FUNDS ADMINISTERED BY THE DONOR

I. Scholarships

Scholarships are offered in varying amounts up to full coverage of tuition fees. They include:

School of Education Scholarships

The province of Nova Scotia, through an arrangement with the University, offers a number of scholarships to university graduates taking the degree of Bachelor of Education. Applications for these scholarships should be made in writing to the Dean of the School of Education, Saint Mary's University.

The Canadian Mathematical Congress Scholarships

The Canadian Mathematical Congress offers a number of scholarships for students of Grade XII in Nova Scotia schools on the basis of a competitive examination usually held early in May of each year. They are tenable at any university in Canada. The amount of each award is determined by a consideration of financial need based upon applications from the leading candidates. Further information is available from the guidance departments of the various high schools.

Imperial Oil Ltd. Scholarships

Imperial Oil Ltd. offers payment of tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. The courses must be taken at any Canadian university or other approved institution of higher learning. Each award is tenable for a maximum of four years. To be eligible a student must attain an average mark of 70 per cent in the appropriate secondary school examinations in the subjects required for admittance to the approved institution. Further information and application forms may be obtained from the Secretary, Committee on Higher Education, Imperial Oil Limited, 111 St. Clair Avenue West, Toronto 7, Ontario.

General Foods Scholarships (\$2,000)

General Foods Limited has established two scholarships in the sum of \$2,000 (over a four year period). These awards were first presented in 1965 and 1966. For further information contact the Director of Financial Assistance at Saint Mary's University.

Royal Canadian Engineer Memorial Trust Scholarship

This scholarship is available throughout Canada to the sons and daughters of parents who have served with the R.C.E. or its equivalent organization. For further information and application forms see the Director of Financial Aid at the Student Center.

Joe Gannon Memorial Scholarship

The scholarship, valued at \$500, is awarded to the son; daughter or

legal ward of a trade unionist who is a member of a union affiliated with the Nova Scotia Federation of Labour. Applications should be addressed to Selection Committee, c/o Nova Scotia Federation of Labour, 6074 Lady Hammond Road, Halifax, Nova Scotia.

Municipal School Board, Halifax County, Scholarships

Four awards of \$100 are made annually to students who have been accepted by the Education Faculty of a Maritime university. The award is restricted to residents of Halifax County. Further information may be obtained from Municipal School Board, P.O. 90, Armdale, Halifax, Nova Scotia.

Hockey Canada Scholarships (\$2,000 annually)

Hockey Canada Scholarships were established in 1969, as a result of recommendations by a government task force on sports. This scholarship programme is intended to encourage young men in two important endeavours — the pursuit of a post-secondary education and the development of proficiency in the game of hockey. These scholarships are open to candidates with outstanding hockey ability, who are Canadian citizens or landed immigrants of at least one year status, and who have graduated or are about to graduate from a secondary school with an average of at least 65 per cent in the year of graduation, or who are presently enrolled or have been enrolled in a post-secondary institution. Tenable for four years. Further information and application forms may be obtained from the Director of Awards, AUCC, 151 Slater Street, Ottawa 4, Ontario.

Canadian University Students' Scholarships

Annual awards by Canadian University Students enable specially selected students to take one year of their studies at a university in a different part of Canada.

Education Fund for Black Students

This fund was established in April, 1965, for the purpose of assisting promising students to continue their education in high schools, vocational schools, technological institutes, nursing schools, and universities.

Students who register at a recognized university or college are eligible for assistance under the terms of the Fund. Inquiries should be directed to Mr. Harlan Cox, Chairman, Education Fund for Negroes, Box 578, Halifax, Nova Scotia. Mr. Cox's office will also advise students of other sources offering assistance in meeting university expenses.

Many parishes and parish organizations offer scholarships to deserving students. Students interested in such scholarships should make inquiries from their parish or the parish organization concerned. These awards include:

Saint Agnes Parish Holy Name Society Scholarship

One award of \$100.

Saint Joseph's Parish Scholarships
Two awards, one of \$100 and one of \$150.

Saint Mary's Basilica Parish
The Monsignor Carroll Memorial Scholarship, valued at \$300.

Saint Peter's Parish Holy Name Society Scholarships
These awards vary in number and value.

Saint Rose of Lima Parish Holy Name Society Scholarship
One award of \$100.

Saint Stephen's Parish Scholarships
Four awards of \$100.

Saint Stephen's Educational Association Scholarships
Three awards of \$100.

The Home and School Associations of various schools offer scholarships to deserving students. Students interested in such assistance should seek further information from their respective Home and School Association. These awards include:

Bedford Home and School Association Scholarship (\$100)

Oxford Home and School Association Scholarship (\$50)

Saint Thomas Aquinas Home and School Association Scholarship (\$100)

In addition, many councils of the Knights of Columbus offer scholarships to deserving students. Students interested in such scholarships are advised to direct their enquiries to the council in their area. These awards include:

Knights of Columbus Council 1097 (Halifax) Scholarships
Seven awards of \$150.

Knights of Columbus Council 2181 (Yarmouth) Scholarship
One award of \$200.

MILITARY SERVICE SCHOLARSHIPS

The high professional ability required of present-day military officers demands the best in education and training. The Department of National Defence therefore sponsors programmes of university education and leadership training for selected service personnel who have the potential to become

officers in the Canadian Armed Forces. The admission standards are high, but for those who qualify the way is open to a challenging and rewarding career.

The programmes sponsored are the Regular Officers Training Plan, (ROTP), Medical Officer Training Plan (MOTP), Dental Officer Training Plan (DOTP) and Reserve Officer University Training Plan (ROUTP). Training given under these plans is divided into two parts; normal attendance at university throughout the academic year and military training each summer.

Interested students are requested to contact one of the following:

Commanding Officer Canadian Forces Recruiting Centre Sir John Thompson Building 1256 Barrington Street Halifax, Nova Scotia	or	University Liaison Officer Canadian Forces Base Halifax FMO Halifax, Nova Scotia
---	----	---

For ROUTP, contact the Commanding Officer of your local reserve unit.

II. Bursaries

Assistance for students in financial need is available from various sources.

The Birks Foundation Bursaries

Each Year the Birks Family Foundation pays the tuition and fees of all children of its employees in attendance at Canadian universities. On or before September 30 of each year the Birks employee should file with the Foundation an application of intent to enroll his son or daughter in a university of his choice in the ensuing year. In the case of a student who wishes to continue his studies on a Birks grant, notification should be given to either the Foundation or the Director of Financial Aid at the end of each school year.

Royal Canadian Legion Bursaries, Nova Scotia Command

Four bursaries, valued at \$350 and \$400, are offered annually. These awards were established to assist dependents of veterans in furthering their education. Applications available from L.M. Rhodenizer, Education Committee, New Glasgow, Nova Scotia.

Children of War Dead Education Assistance Act

This Act provides fees and monthly allowances for children of a veteran whose death was attributable to military service. Inquiries should be directed to the nearest District Office of the Department of Veterans Affairs.

I.O.D.E. Second War Memorial Entrance Bursaries

Awarded to children of deceased or permanently or seriously

disabled Canadian men and women of the services, who served in World War II. Further information is available from I.O.D.E. Educational Secretary, 5667 Victoria Road, Halifax, Nova Scotia.

Provincial Chapter of Nova Scotia, I.O.D.E.

A number of bursaries are awarded to university students in need of financial assistance. Preference is given to first-year students. Further information is available from Provincial Educational Secretary, I.O.D.E., 5667 Victoria Road, Halifax, Nova Scotia.

The Post Discharge Rehabilitation Grants

Ex-service personnel seeking educational grants should contact the Director of Financial Assistance at Saint Mary's University. If accepted to the University, they will be given a letter with which to support their application to the Department of Veterans' Affairs.

Metropolitan Life Insurance Company

Financial assistance is available to students whose parents are or have been full-time employees of the Metropolitan Life Insurance Company. This company also has a matching gift programme available at Saint Mary's University. For full information contact the Director of Financial Aid at Saint Mary's University.

FUND ADMINISTERED BY THE PROVINCIAL GOVERNMENT

The University cooperates fully with both the Canada Student Loans Plan and the Nova Scotia Bursary — Canada Students Loans Programme.

Canada Students Loan Plan

The Canada Student Loans Plan was introduced by the Federal Government as a broad programme to assist students who, in the absence of a loan, would be unable to pursue full-time post-secondary studies at a university or other educational institution. Canada Student Loans, available only on the basis of Certificates of Eligibility issued by the appropriate authority (Issuing Agency) of a Province, may be made by any branch of the chartered banks and by certain designated credit unions with the guarantee of the Federal Government.

Applications for Certificates of Eligibility must be made to provinces participating in the plan, and decisions on individual applications are made by the appropriate provincial authority (Issuing Agencies). Students applying for certificates who meet residence and other requirements must also demonstrate that the financial means available to them from all other

sources are insufficient and that a guaranteed loan is needed. In no case will a loan for an academic year exceed a maximum of \$1,400, or total loans exceed \$9,800 during the student's academic career. Provincial authorities may issue Certificates of Eligibility under the plan up to the limits of provincial allocations in each loan year.

Borrowers under the plan are required to repay the principal and to pay interest, but no payments are required as long as they are full-time students at a specified post-secondary educational institution or for six months thereafter. Interest during this period is paid by the Federal Government on behalf of the student. After a student's interest-free period has expired, he is required to make regular monthly payments which include re-payment of principal and interest on the outstanding balance at the rate that is in effect for student loans at the time the student takes out his loan. The number of years over which a loan may be repaid depends on the loan amount and other considerations, but may not exceed ten years from graduation. A student applying for a loan under this plan should only request the funds needed to enable him to continue his studies. In doing so, he should give responsible consideration to the repayment obligations he is assuming.

Any student needing a loan should apply to the appropriate authority in the province where he officially resides both for full information and application form. Enquiry should be directed to one of the following addresses or the Director of Financial Aid at Saint Mary's University:

Nova Scotia	Canada Student Loans Committee, Department of Education, Box 578, Halifax, Nova Scotia.
Alberta	Students Assistance Board, Department of Education, Administration Building, Edmonton, Alberta.
British Columbia	The British Columbia Student Aid Loan Committee, c/o Department of Education, Parliament Buildings, Victoria, British Columbia.
Manitoba	Department of Youth and Education, Student Aid Officer, 1181 Portage Avenue, Winnipeg 10, Manitoba.
New Brunswick	Department of Youth, Centennial Building, Fredericton, New Brunswick.

Newfoundland	Canada Student Loans Authority, Department of Education, Confederation Building, St. John's, Newfoundland.
Northwest Territories	Director of Education for the Northwest Territories, Department of Education, Yellowknife, Northwest Territories.
Ontario	Department of University Affairs, Student Awards Officer, Suite 700, 481 University Avenue, Toronto 2, Ontario.
Prince Edward Island	Canada Student Loans Committee, Department of Education, Charlottetown, Prince Edward Island.
Quebec	Office of Student Aid Services, Department of Education, Parliament Buildings, Quebec 4, Quebec.
Saskatchewan	Department of Education, Avord Tower, Victoria Avenue & Hamilton Street, Regina, Saskatchewan.
Yukon Territory	The Students Financial Assistance Awards Committee, Superintendent of Education, Box 2703, Whitehorse, Yukon Territory.

Nova Scotia Government Bursary — Canada Student Loans Programme

This programme combines loan assistance available through the Canada Student Loans Plan grant and loan assistance available from the Province of Nova Scotia. It is designed to supplement the resources of a student who, lacking such aid, would be unable to proceed to university studies. The ratio of grants to loans is determined in accordance with a formula fixed by the Province of Nova Scotia.

The Canada Student Loan portion of the award is guaranteed by the Federal Government. No interest or payments on principal are required during the period that the student is in full-time attendance at the university and for

six months thereafter. The interest during this period is paid by the Federal Government.

The maximum amount available under the Canada Student Loans Plan is \$1,400 in any one year, and the total indebtedness permitted is \$9,800. With the addition of free grants and loans from the Province of Nova Scotia, the maximum assistance a student receives in any year may exceed \$1,400, depending on the formula in effect in the year of application.

Assistance under the Nova Scotia Bursary — Canada Student Loans Programme is available to all residents of Nova Scotia, including graduates at the Bachelor's level from designated educational institutions. (Graduates proceeding to degrees in Education should specifically check with the Financial Aid Officer of the institution which they plan to attend or the Director of Financial Aid at Saint Mary's University). A student from another province must apply for assistance to the government of his own province. Application forms can be obtained from the Supervisor of Student Aid, Department of Education, Box 578, Halifax, Nova Scotia.

Post Graduate Scholarship Assistance

Students whose university performance gives promise of successful graduate studies should seek advice on availability of fellowships and scholarships. Interested students should contact the Office of Graduate Scholarships in the Student Center or the Director of Financial Aid at Saint Mary's University.

United States Students

All students proceeding to Saint Mary's from the United States of America who require financial assistance should apply for information to the Higher Education Authority of their particular state or to the Office of Education, Department of Health, Education and Welfare, Washington, D.C. 20202.

Financial Information

The schedule of fees for the 1973-74 academic year, together with regulations respecting the payment of fees and withdrawal and refunds, is set out in the booklet entitled:

Saint Mary's University
Financial Information
1973-74

This booklet is to be read in conjunction with, and is to be considered a part of, the 1973-1974 Academic Calendar.

**ADMISSIONS
REGISTRATION
ACADEMIC INFORMATION**

ADMISSION INFORMATION

Application, Admission Requirements, Admission to Advanced Standing, Registration.

For information on admission to Graduate Studies see page 72.

APPLICATION

All correspondence concerning admissions should be addressed to The Director of Admissions, Saint Mary's University, Halifax, Nova Scotia.

Application forms may be obtained by writing to the Director of Admissions. Applications should be forwarded to the Admissions Office not later than August 15th. The application form must be accompanied by the following:

- a) Provincial or accredited School Certificates showing all matriculation credits. Senior Matriculation Certificates should be sent as soon as they are available.
- b) The completed Principal's Confidential Report Form must be mailed directly to the Director of Admissions by the Principal or Guidance Officer.
- c) Students who have attended any university or college must request that institution to send an official transcript directly to the Director of Admissions, Saint Mary's University. (See Admission of Transfer Students).
- d) A \$5.00 fee must accompany the application (\$10.00 for non-Canadian students.) An application will not be processed until the fee is received.
- e) An overseas student whose mother tongue is not English is required to take the English Language Test administered by the University of Michigan. Arrangements for writing the English Language Test are the responsibility of the students who must apply directly to:

The English Language Institute
Testing and Certificates
The University of Michigan
Ann Arbor, Michigan
U.S.A.

The Test of English as a foreign language administered by the College Entrance Examination Board is also valid.

ADMISSION REQUIREMENTS

For admission to Saint Mary's as an undergraduate, a candidate must have Junior Matriculation, which is Nova Scotia Grade XI or its equivalent. The student must have an overall average of at least 60 per cent, with no mark below 50 per cent in the following subjects:

English, mathematics, and any three of biology, chemistry, economics, geology, geography, history, physics, music, home economics, or a language other than English.

Candidates for Science and Engineering should have chemistry and physics. Marks in science subjects and mathematics should be above average.

S.A.C.U. scores are normally required for entrance.

MATURE STUDENTS

Saint Mary's University offers a special programme to assist mature persons wishing to undertake work toward a Bachelor of Arts degree, but who lack the usual certification required upon entrance. The stipulations of this programme provide for the following:

1. The admission of students who do not possess senior matriculation requirements, but who are 25 years of age or older on or before December of the year in which they apply, or who have been out of school for not less than five years, and who have not been previously registered in any post secondary institution, e.g., community college, junior college, or university.
2. Students who meet these conditions will be permitted to enroll in one full university course.
3. A student who maintains a satisfactory standard in that course would then be eligible for admission to a three-year general Bachelor of Arts programme, which he would pursue on either a part-time or full-time basis. At that time the student would be expected to meet the normal requirements existing for the regular three-year degree programme offered by the University.
4. Students applying for admission under this programme must have a personal interview with the Director of Evening Division and Summer Sessions.

TRANSFER STUDENTS

Application for admission from students wishing to transfer from another university or college will be considered only for the year and session in which they are eligible to register in their former university.

Students who have been away from university studies for a number of years may be considered for admission.

A transfer student wishing to attain his first degree must complete at least ten courses at Saint Mary's to be eligible for a Saint Mary's degree.

ACCEPTABLE CERTIFICATES

1. Nova Scotia Grade XI High School Certificate in the university preparatory programme;
2. Nova Scotia Grade XII High School Certificate in the university preparatory programme;
3. Provincial Certificate from the provinces of New Brunswick, Newfoundland, or from any province that offers provincial examinations.
4. New Brunswick High School Certificate (effective 1973);
5. Equivalent certificates issued by Education Departments and High Schools of other provinces.

EQUIVALENT CERTIFICATES

New Brunswick

Students who complete five Grade XII academic subjects, with a 60 per cent average and no mark below 50 per cent may be offered admission to a three year ordinary or four year honours degree programme. Students entering Arts require English, and four academic subjects. Students in Science, Commerce, or Engineering require English, Mathematics, and three academic subjects; those in Science and Engineering, should offer two science subjects.

Students who do not fulfill the above requirements but who are awarded a high school graduation certificate may be accepted on a four year degree basis.

Students wishing to apply for admission in any faculty must have a pass mark in English and 112 Mathematics. Those wishing to enter a three year programme in the faculties of Commerce, Science or Engineering, must have a pass in 122 (or higher) Mathematics.

United States

High School graduation with 16 points, (4 in English, 2 in History, 2 in Algebra, 1 in Geometry and one each in 7 other academic subjects). The student must provide a high school transcript and the test results of the College Entrance Examination Board and the Scholastic Aptitude Test.

United Kingdom, West Indies and West Africa

For admission at the Junior Matriculation level the G.C.E. with passes at the Ordinary Level in 5 subjects. English and Mathematics are required subjects. The grade of marks obtained must average less than four.

Hong Kong

General Certificate of Education (as above) or University of Hong Kong Matriculation Certificate (on the same basis as the G.C.E.) The grade of marks obtained must average less than four.

ADMISSION TO ADVANCE STANDING

1. Arts

A full year's credit (five courses) will be given to a student registering in Arts who presents a Senior Matriculation Certificate, Nova Scotia Grade XII or equivalent, with an overall average of at least 60 per cent, and no mark below 50 per cent in these subjects:

English, and four of the following: mathematics, physics, chemistry, biology, geology, history, geography, music, a language other than English, one social science, religious studies.

Effective the academic year 1972-73, one social science will be allowed from Grade XII. This may be modern world problems, political science, economics, or a comparable course accepted by the Department of Education.

2. Science and Commerce

A full year's credit (five courses) will be given to a student registering in Commerce or Science who presents a Senior Matriculation Certificate, Nova Scotia Grade XII or equivalent, with an overall average of at least 60 per cent, and no mark below 50 per cent in these subjects: English, mathematics, and three from biology, chemistry, geology, geography, history, physics, a language other than English, one social science, and religious studies.

This advance standing makes graduation with a general degree possible in three years.

3. Engineering

A student registering in Engineering who presents a Senior Matriculation Certificate, Nova Scotia Grade XII or equivalent, with an overall average of 65 per cent and no mark below 50 per cent in the following subjects: English, mathematics, physics, chemistry, and one other from biology, geology, history, geography, a social science, religious studies, a language other than English, will be able to complete the Engineering Diploma requirements in three years, and receive the Bachelor of Science degree.

The Diploma in Engineering admits the student without examination into any of the departments of the Nova Scotia Technical College for the final two years of a five-year programme leading to the degree of Bachelor of Engineering.

4. New Brunswick Students

Students who complete five Grade XII academic subjects, with a 60 per cent average and no mark below 50 per cent, may be offered admission to a three year ordinary or four year honours degree programme. Students entering Arts require English, and four academic subjects. Students in Science, Commerce, or Engineering require English, mathematics, and three academic subjects; those in Science and Engineering should offer two science subjects.

Students wishing to apply for admission to any faculty must have a pass mark in English, and 112 Mathematics. Those wishing to enter a three year programme in the Faculties of Commerce, Science or Engineering, must have a pass in 122 (or higher) Mathematics.

5. Overseas Students

Students from the United Kingdom, West Indies, West Africa and Hong Kong may be granted advanced standing on the presentation of G.C.E. Certificates in five subjects at the Ordinary Level of which two are English and Mathematics and in addition at least three subjects at the advanced level. The grade of marks obtained must average less than four.

6. Partial Credit: fewer than five courses (all faculties)

Partial credit (fewer than five courses) may be granted on the basis of Senior Matriculation standing under the following conditions:

- a) These credits be obtained before courses at the University are begun;
- b) The student have a mark of 60 per cent in each subject for which he is seeking advanced standing, except that a student in Science wishing to take further courses in mathematics or science must have a mark of 75 per cent in that subject.

7. Transfer Students

Advanced standing for work done at other Universities will be considered on the basis of individual course (see page 42).

Courses taken at other institutions after first registration at Saint Mary's will not be credited by the University unless the student has obtained prior, written approval of the Registrar.

REQUIREMENTS FOR SECOND UNDERGRADUATE DEGREE

Arts and Science

Students who already possess one undergraduate degree and who wish to take a further undergraduate degree are required to take at least five

additional courses to fulfill the degree requirements for the second degree, Students interested in completing either a Bachelor of Arts or a Bachelor of Science as a second degree must contact the Registrar.

Commerce

Students holding an undergraduate degree recognized by the University and who wish to obtain a general Bachelor of Commerce degree shall be required to satisfy the following:

1. A major concentration in one of the areas: accounting, business administration, or economics. Selection of a major concentration must be made by the student at the time of admission to the Faculty of Commerce.
2. Credit may be allowed for the undernoted courses, but such credit shall not reduce the number of courses for the Commerce degree to less than six; mathematics, philosophy, and two credits from Business Administration 240.0, Economics 202.0, Business Administration 280.0, Commercial Law, a second course in the major concentration.

ACCOUNTING

Mathematics 113.0 - Mathematics for Commerce Students

Economics 202.0 - Principles of Economics

Business Administration 203.1* or 203.2* - Introductory Quantitative Methods for Commerce

Business Administration 204.1* or 204.2* - Introductory Statistics for Commerce

Business Administration 240.0 - Principles of Finance and Managerial Accounting

Business Administration 280.0 Principles of Management

Commercial Law 301.1* or 301.2* and 302.2

Business Administration 321.1* or 321.2* - Introduction to Computers

Business Administration 341.1* - Intermediate Financial Accounting - Part I

Business Administration 342.2* - Intermediate Financial Accounting - Part II

Business Administration 346.1* - Introductory Cost Accounting

Business Administration 348.2* - Planning and Control

Business Administration 360.1 - Business Finance - Part I

Business Administration 361.2 - Business Finance - Part II

Equivalent of one full course from Business Administration 323*, 324*, 443*, 425*, 444*, 450.0, 453*, 455*.

A non-Commerce elective in one of Philosophy, Psychology, Political Science, Sociology approved by the Department.

*(Half-Course)

BUSINESS ADMINISTRATION

- Mathematics 113.0 - Mathematics for Commerce Students
Economics 202.0 - Principles of Economics
Business Administration 203.1* or 203.2* - Introductory Quantitative
Methods for Commerce
Business Administration 204.1* or 204.2* - Introductory Statistics for
Commerce
Business Administration 240.0 - Principles of Financial and Managerial
Accounting
Business Administration 280.0 - Principles of Management
Commercial Law 301.0* or 301.2*
Business Administration 317.1* or 317.2* - Introduction to Production
Business Administration 321.1* or 321.2* - Introduction to Computers
Business Administration 360.1* - Business Finance - Part I
Business Administration 361.2* - Business Finance - Part II
Business Administration 370.1* or 370.2* - Introduction to Marketing
Business Administration 382.0 - Organizational Behaviour
Business Administration 489.2* - Business Policy
A non-Commerce elective in one of Philosophy, Psychology, Political
Science, Sociology approved by the Department.
(*Half-Course)

ECONOMICS

- Mathematics 113.0 - Mathematics for Commerce Students
Business Administration 240.0 - Principles of Financial and Managerial
Accounting
Business Administration 280.0 - Principles of Management
Economics 202.0 - Principles of Economics
Economics 203.1* - Introductory Mathematics for Commerce
Economics 204.2* - Introductory Statistics for Economists
Economics 300.1* - Intermediate Microeconomic Theory
Economics 301.2* - Intermediate Macroeconomic Theory
Commercial Law 301.1* or 301.2*
Philosophy 201.0/209.0
Equivalent of two and a half full Economics courses at the 300 level or
above.
(*Half-Course)

REGISTRATION

Registration will take place on the dates and times set forth in the Academic Calendar. Students should follow exactly the directions for registration procedure supplied by the Office of the Registrar. No credit will be allowed for a course for which the student is not regularly registered.

Should registration prove insufficient, the University reserves the right to cancel any listed course.

At the time of registration students are required to satisfy the Business Office in regard to the payment of fees.

All students not previously registered at Saint Mary's University during the preceding academic year are required to present a certificate of medical fitness at registration.

Late Registration

Students registering on any other date than that designated in the Academic Calendar are required to pay a late registration fee.

Changes in Registration

Changes in registration are permitted only with departmental approval and only within the period indicated in the Academic Calendar.

No change of registration is permitted after the first week of instruction. This applies to full courses and half courses that begin in September and to half courses that begin in January.

Dropping of Courses

Students who drop a course without authorization of the Dean of Faculty will be given a grade of WF (Withdrawal Failure) on the University records (see page "Failures").

Courses taken at Other Institutions

Courses taken at other institutions after first registration at Saint Mary's will not be credited by the University unless the student has obtained prior, written approval of the Registrar.

Withdrawal

When a student withdraws from the University he must notify the Registrar at once; in which event this notification will be taken ~~as~~ the official date of withdrawal from the University.

ACADEMIC INFORMATION

Examination and Grades

University policy with respect to judging student performance in academic

courses is designed to provide flexibility in the methods employed in evaluation, and as far as possible to permit the continuous notation of a student's progress throughout all stages of a course.

Accordingly, the method of evaluation in any course is determined by the member of the faculty responsible for the course, subject to approval by the appropriate department chairman and faculty dean. All professors must make known in writing no later than *one week* after the beginning of any course the precise procedures for determining and measuring progress in that course, including a statement of the number and form of examinations and assignments, and other means of evaluation.

The following letter-grade system, with quality point equivalents, is employed to indicate final evaluation for work in a course.

	Quality Points
A — excellent, superior	4 points
B — very good, above average	3 points
C — good, average	2 points
D — fair, below average but passing	1 point
P — passed by supplemental examination	1 point
F — unsatisfactory progress, credit not given	0 points
FS — (failed supplemental examination)	0 points
Aegrotat	Aegrotat standing, credit given
W — permitted withdrawal	
WF — course withdrawal with evaluation of unsatisfactory progress.	

Attendance at all lectures, seminars, and laboratory periods of any course in which a student is registered is mandatory. A student whose attendance has been reported as unsatisfactory by the professor may be debarred from tests and examinations, or required to withdraw from a course or degree programme by the appropriate faculty dean.

A candidate for a degree must be of good moral character and must have given general satisfaction throughout his course.

Supplemental and Special Examinations

1. On written recommendation of the professor responsible, a student is eligible to take a supplemental examination covering the same material as that contained in the course which he has failed.
2. Such a recommendation must be submitted to the Registrar's office in conjunction with the final grade; the supplemental examination is taken at the time prescribed in the University calendar.
3. To be eligible to write any supplemental examination for which he is recommended, a student must have no more than two final course grades of unsatisfactory (F) during the academic year in which the supplemental examination is to be taken.

4. Supplemental examinations are graded either P (satisfactory) or F (unsatisfactory).

5. Only one supplemental examination is permissible in any course.

6. No more than three full courses passed by supplemental examinations will be credited towards any degree or diploma.

7. Applications for supplemental examinations must be made to the Registrar's office no later than the date set down in the Academic Calendar.

Special examinations are written outside the time assigned for regular and supplemental examinations, and are granted rarely and only for extraordinary reasons by the Committee on Academic Standing.

Failures

A student whose work in a particular course is deemed by the professor to be so unsatisfactory as to preclude any reasonable prospect of achieving success may be asked to withdraw from the course, pending approval by the department chairman and the faculty dean. The grade indicated will be WF.

No course may be taken more than twice.

A student who withdraws voluntarily from any course at a point in the course where his formal evaluation is unsatisfactory (F) will receive a notation of WF on his record for that course. (See page 46) Dropping of Courses).

A student receiving a final evaluation of unsatisfactory (F) in a course which involves both lectures and laboratory work must repeat both parts of the course or an equivalent approved by the department concerned to receive a credit in the course.

A full-time student who in his first year fails to pass at least two courses must withdraw from the University for one year. Such a student may be re-admitted on academic probation following this one-year suspension.

A student who fails in more than 40 per cent of the year's work fails the year.

Any student who fails in two years of his work will no longer be granted permission to register for courses at the University.

Default of any formal process of evaluation in a course for medical reasons must be certified in written form and submitted to the Registrar's office within one week of the default.

Aegrotat Standing

Aegrotat permits a student to receive credit in a course under circumstances which prevent, for medical reasons or on compassionate grounds, the completion of a final formal process of evaluation. A professor may award

aegrotat standing after satisfactory evidence has been supplied to cover the absence. Such evidence must be submitted to the Registrar's office no later than one week after the absence.

Academic Probation

Any student who receives an evaluation of unsatisfactory (F) in more than two courses at either mid-year or year-end will be placed on academic probation.

Any student whose academic record or progress is judged to be unsatisfactory because of poor attendance, incomplete assignments, or other reasons may be placed on academic probation. If the record continues to be unsatisfactory, the student may be requested to withdraw from the University by the dean of faculty.

Appeals

A student may appeal decisions taken on academic regulations by writing to the dean of the faculty concerned. Copies of the letter of appeal should also be sent to the chairman of the department and the professor involved. A decision on the appeal will be given by the dean after consultation with the faculty member and chairman. A student has the right to request the Senate to consider the appeal decision by making formal application to the Committee on Academic Standing.

SPECIAL PROGRAMMES

Summer School and Extension Division

Credit courses in Arts, Science and Commerce are offered at the University in Evening and Summer sessions. Students enrolling in these courses must have fulfilled the usual requirements for University entrance (see admission requirements for undergraduate and graduate students). Students must follow, as closely as possible, the normal sequence of courses required for regularly enrolled students and are expected to maintain the same standards in their studies. Programmes should be approved by the chairman of the department in which the student plans a major concentration.

Evening Division courses begin in September, at the usual time for commencement of classes, and end with the April examinations. Two summer Sessions of six weeks each are held: the first session begins in mid-May, and the second session early in July. Brochures describing the courses offered in the Evening Division and Summer Sessions are available from the Director's Office, the former by August 1st and the latter by January 31st.

Students registered for degrees at Saint Mary's may take two courses each year in the Evening Division and one course per Summer Session.

Students wishing to take courses at Saint Mary's for credit at another university must submit written permission from the appropriate authority at his or her university along with the application for a course or courses.

Students who expect to commence part-time studies in September should contact the Director not later than August 15th. April 1st is the deadline for those wishing to begin their studies during the Summer Session. All inquiries should be addressed to the Director, Evening Division and Summer Sessions, Saint Mary's University, Halifax, Nova Scotia.

Adult Studies Series

In 1951, Saint Mary's University Adult Studies were instituted as a cultural service to the Halifax community. Lectures, academic in subject and treatment, are offered regularly to the general public on a variety of topics. Their purpose is to extend familiarity with humanistic learning, awaken critical attitudes, and stimulate a deeper sense of values consistent with our western heritage.

Usually lectures are given in series, ten lectures devoted in one semester to a particular topic.

Inquiries for information should be addressed to The Director, Adult Studies.

FACULTIES AND COURSES

FACULTIES AND COURSES

Course Numbering System

The course numbering system appearing in the calendar was put into effect September, 1971.

It is as follows:

1. A number of **four** (4) digits is used to designate each course. (A letter following the course number indicates a section of the same course, but this letter will be used at registration time and will **not** appear in the calendar.)
2. The **first** digit indicates the **year** in which the course is normally taken:
 - 100 - 199 Freshman
 - 200 - 299 Sophomore
 - 300 - 399 Junior
 - 400 - 499 Senior
 - 500 - 599 Fifth year
 - 600 - 699 Graduate (sixth) year
3. The **second** and **third** digits indicate the departmental course number.
4. The **fourth** digit, which follows a decimal point after the first three numbers, indicates a course of either one or two semesters:
 - .0 a full course of two semesters (e.g., English 101.0)
 - .1 a half course offered in the first semester (e.g., Business Administration 203.1)
 - .2 a half course offered in the second semester (e.g., Engineering 112.2)

N.B.: Where a first semester course is repeated in the second semester, both numbers are listed after the course title. For example: GRAPHIC STATICS 203.1 or (203.2).

ARTS

Degree of Bachelor of Arts - The General Programme

1. Subject to the regulations set forth in this calendar, the student must complete the equivalent of 20 full courses following junior matriculation, or 15 full courses following senior matriculation.
2. During the regular academic year, the student will normally take

five full courses. The department of the student's major concentration will advise the course registrations beyond the Freshman year.

3.
 - a) A major concentration for the Arts degree may be taken in anthropology, classics, economics, English, French, German, history, Latin, mathematics, philosophy, political science, psychology, sociology, Spanish, or religious studies.
 - b) Interdisciplinary concentration — Asian Studies (See page 84)
4. Each candidate for the B.A. must receive credit for:
 - a) one university course in English
 - b) one course in history (Senior matriculation credit will suffice)
 - c) one course in philosophy
 - d) one course in a social science (economics, political science, psychology, sociology).
5. A student who chooses a major concentration must complete no fewer than five courses in one subject. Courses numbered below 200 will not count. His programme should be supervised and approved by his department.
6. A student who does not choose a major concentration must have his programme supervised and approved by a member of Faculty. A copy of the programme must be filed in the Dean's office at the beginning of each academic year and will be subject to his approval. At least 50 per cent of a non-major student's elective work must be done at the 300 level or above.

West European Programme. (See page 221).

SCIENCE

The student electing to pursue a programme leading to the Bachelor of Science degree should consider which of three programmes best suits his aspirations.

The Honours programme demands a minimum **B** grade in all courses followed in the honours subject. This programme involves an additional year of study and is designed primarily for students who wish to proceed to graduate work in the area of the honours subject.

The regular Major programme demands a minimum grade of **C** in all courses in the major subject. The programme is designed to meet the needs of those students who wish to be employed in work related to the area of their major; additionally, it will be useful to those wishing to practice as technicians or technical officers. This programme permits a student to pre-

pare himself adequately for continued study at the graduate level, if his performance and motivation develop in that way.

The General programme is designed to give a person a good educational background for life in today's technical world. It is of the same duration as the Major programme but broader in content. More emphasis is placed on the humanities and social sciences, recognizing that greater understanding of science and its relation to society will be required of educated people in the days ahead. Students taking this programme as preparation for professional schools are urged to place special emphasis on a high standard of performance from the beginning.

The requirements for the general degree of Bachelor of Science applicable to students who registered in September, 1966, or later, are as follows:

1. Subject to the regulations set forth in this Calendar, the student must complete a total of 20 full courses following junior matriculation or 15 full courses following senior matriculation.
2. During the regular academic year, the student will normally take five full courses. The department of concentration will normally govern registration for the Sophomore and subsequent years.
3. Concentrations for the science degree may be taken in biology, chemistry, geology, mathematics, physics, psychology.

4. **The Freshman Year**

The student must complete five courses from those numbered 100-199 as follows:

- (a) three required courses: one English, one mathematics, and one history, or economic history.
- (b) two elective courses to be chosen from the courses open to Freshmen in the following subjects: biology, chemistry, French, geology, German, Latin, physics, Spanish, religious studies.

5. **The Sophomore Year**

- (a) The student must choose his area of concentration and seek registration advice from the appropriate department.
- (b) The student must complete:
 - (i) one course in Philosophy.
 - (ii) one course each (at the 200 level and above) in two of the following: biology, chemistry, geology, mathematics, physics, psychology, astronomy.
 - (iii) one course in mathematics other than in (ii).
 - (iv) one elective from the humanities, preferably English.

6. The Junior and Senior Years

To satisfy requirement no. 1, the student must complete:

- (a) five or six courses beyond the sophomore level in two subjects from the following: biology, chemistry, geology, mathematics, physics, psychology, astronomy or engineering. In the case of students following Schedule B under engineering, (see page 64). Students who wish to offer a subject begun only in the junior year may, by exception, offer the introductory course in that subject as one of the four courses required in (b).
- (b) three or four courses in the humanities or social sciences, contingent on choice in 6 (a). At least one of these courses must be a second course in the subject and beyond the sophomore level.
- (c) one course from the social sciences (economics, political science, psychology, sociology, anthropology).

Engineering and Science Course

Students who have obtained the Diploma of Engineering under Schedule "B" may proceed to the degree of Bachelor of Science on successful completion of a further year of study.

The programme of this additional (fourth) year will include: a course in mathematics, an elective from the humanities* and any three from physics, chemistry, or mathematics, or three courses in geology.

All programmes must have the approval of the Dean of Science.

*This must be a course in philosophy unless the student has already a credit in philosophy.

BACHELOR OF SCIENCE WITH MAJOR

The requirements for the degree of Bachelor of Science with Major applicable to students who registered in September, 1970, are as follows:

1. Subject to the regulations set forth in this Calendar, the student must complete a total of 20 full courses following junior matriculation, or 15 full courses following senior matriculation.
2. During the regular academic year, the student will normally take five full courses. The department of concentration will normally govern registration for the Sophomore and subsequent years.
3. A major for the science degree may be taken in biology, chemistry, geology, mathematics, physics, psychology.

4. A student in the major programme must obtain a grade of not less than C in every course in the major subject as described in item 7 (a). A student receiving a mark of less than C in any course in the area of his major will be permitted to continue in the major area only with the approval of the Dean of Science.

5. **The Freshman Year**

The student must complete five courses from those numbered 100-199 as follows:

- (a) three required courses: one English, one mathematics, and one history, or economic history.
- (b) two elective courses to be chosen from the courses open to Freshmen in the following subjects: biology, chemistry, French, geology, German, Latin, physics, Spanish, religious studies.

6. **The Sophomore Year**

- (a) The student must choose his major subject and seek registration advice from the department of that subject.
- (b) The student must complete
 - (i) one course in English.
 - (ii) one course each, normally at the 200 level and above, in two of the following: biology, chemistry, geology, mathematics, physics, psychology, astronomy.
 - (iii) one course in mathematics other than in (ii).
 - (iv) one elective from the humanities or a science course, excluding mathematics.

7. **The Junior and Senior Years**

To satisfy requirement no. 1, the student must complete

- (a) five or six courses beyond the sophomore level in the major subject from the following: biology, chemistry, geology, mathematics, physics, psychology.
- (b) one course beyond the sophomore level in related science other than the major subject.
- (c) two or one courses in subjects other than the major subject and from the following: biology, chemistry, geology, physics, astronomy, psychology contingent on choice in 7(a).
- (d) one course in philosophy.
- (e) one elective from the humanities or a science course, excluding mathematics.

COMMERCE

General Information

The programme of study leading to the degree of Bachelor of Commerce is offered to students who desire the advantage of higher education and wish, at the same time, to prepare themselves for graduate study, or a place in the business community, the public service, or professional life. The programme provides a broad background in the humanities and social sciences together with a development of the conceptual foundations of accounting, business administration and economics.

The Faculty offers two programmes of study — Bachelor of Commerce (General) and Bachelor of Commerce (Honours). The major concentrations in the General Degree Programme are in accounting, business administration and economics. The programmes available in the Honours Degree are in business administration and economics.

The requirements for the General Degree are described below; the requirements for the Honours Degree appear on pages 66 - 68.

Degree of Bachelor of Commerce — The General Programme

Requirements:

1. Subject to the regulations set forth in this Calendar, the student must complete a total of the equivalent of 20 full courses following junior matriculation, or the equivalent of 15 full courses following senior matriculation.
2. During the regular academic year, the student will normally take the equivalent of five full courses. The five courses to be taken will be decided upon by the student in consultation with the department of his major. A major must be selected not later than the end of the sophomore year.
3. Completion of a major concentration in accounting, or business administration or economics.
4. **The Freshman Year**

The student must complete five courses as follows:

(a) two required courses: English 130.0 or 201.0 and Mathematics 113.0

(b) three elective courses to be chosen from the following: Anthropology 100 level, Biology 103.0, Classics 100 level, Economics 100 level, French 100 level, German 100 level, History 100 level, Latin 102.0, Physics 111.0, Political Science 201.0, Psychology 201.0, Spanish 101.0, and a course in Religious Studies.

5. **The Sophomore, Junior and Senior Years**

- (a) the student will take 15 courses at the 200 level and above
- (b) the student must complete the following courses:

- (1) English 201.0 or 300.0/310.0†
- (2) Philosophy 201.0/209.0
- (3) Business Administration 240.0
- (4) Business Administration 280.0
- (5) Commercial Law 301.1 or 301.2*
- (6) Economics 202.0

†A student may elect to take another non-Commerce course in lieu of 300-level English course upon receiving the approval of the Department Chairman.

- (c) the student must complete a major concentration in one of the following subjects as listed:
 - (i) Accounting — Business Administration 203.1* or 203.2*, 204.1* or 204.2*, 240.0, 321.1 or 321.2, 341.1*, 342.2*, 346.1* or 346.2*, 348.1* or 348.2*, 360.1, 361.2, the equivalent of one full course to be chosen from: 323*, 324*, 443*, 444*, 450.0, 453*, 455*, and Commercial Law 302.2. *(Half-Course)
 - (ii) Business Administration — Business Administration 203.1* or 203.2*, 204.1* or 204.2*, 280.0, 317.1* or 317.2*, 321.1* or 321.2*, 360.1, 361.2, 370.1* or 370.2*, 382.0, 489.2* *(Half-Course)
 - (iii) Economics — five full-year course equivalents to include: Economics 202.0, 203.1*, 204.2*, 300.1* or 300.2*, 301.1*, 301.2*, and the equivalent of two full Economics courses at the 300 level or above. *(Half-Course)
- (d) in addition to the courses listed under (b) and (c) above, the student must complete the equivalent of two approved full-year courses to be chosen from the subject areas of the languages, humanities, social sciences (including Economics), natural sciences, or business administration.
- (e) The remaining courses required under section (a) will be chosen by the student in consultation with his department.

The following programmes show the courses and course sequence for each major concentration in the general degree:

Accounting

First Year

English 130.0 or 201.0

Mathematics 113.0

Elective)

Elective)

Elective)

Mathematics for Commerce Students

See Requirement 4(b)

The General Programme

Second Year

Business Administration

203.1* or 203.2*

Business Administration

204.1* or 204.2*

Business Administration 240.0

Business Administration 280.0

Economics 202.0

English 201.0 or 300.0/310.0⁽¹⁾

Introductory Quantitative Methods
for Commerce

Introductory Statistics for Commerce

Principles of Financial and
Managerial Accounting

Principles of Management

Principles of Economics

⁽¹⁾In lieu of a 300 level English a student may elect a non-Commerce course approved by the Department.

Third and Fourth Years

Business Administration 321.1 or

321.2

Business Administration 341.1*

Business Administration 342.2*

Business Administration 346.1* or

346.2*

Business Administration 348.1* or

348.2*

Business Administration 360.1

Business Administration 361.2

Commercial Law 301.1 or 301.2

Commercial Law 302.2

A non-Commerce elective in one of Philosophy, Psychology, Political Science or Sociology approved by the Department.

Elective*

Elective

Elective

Elective

Elective

*(Half-Course)

Introduction to Computers

Intermediate Financial Accounting —
Part I

Intermediate Financial Accounting —
Part II

Introductory Cost Accounting

Planning and Control

Business Finance — Part I

Business Finance — Part II

Legal Aspects of Business — Part I

Legal Aspects of Business — Part II

(Electives must include the equivalent of one full course from Business Administration 323, 324, 425, 443, 444, 450, 453, 455.)

Business Administration

First Year

English 130.0 or 201.0

Mathematics 113.0

(Elective)

(Elective)

(Elective)

Mathematics for Commerce Students
See Requirement 4(b) The General
Programme

Second Year

Business Administration

203.1* or 203.2*

Business Administration

204.1* or 204.2*

Business Administration 240.0

Business Administration 280.0

Economics 202.0

English 201.0 or 300.0/310.0⁽¹⁾

Introductory Quantitative Methods
of Commerce

Introductory Statistics for Commerce

Principles of Financial and
Managerial Accounting

Principles of Management

Principles of Economics

⁽¹⁾ In lieu of a 300 level English a student may elect a non-Commerce course approved by the Department.

Third Year

Business Administration

370.1* or 370.2*

Business Administration 360.1*

Business Administration 361.2*

Business Administration

317.1* or 317.2*

Business Administration

321.1* or 321.2*

Business Administration 382.0

Commercial Law 301.1 or 301.2

A non-Commerce elective in one of Philosophy, Psychology, Political Science or Sociology approved by the Department.

Introduction to Marketing

Business Finance — Part I

Business Finance — Part II

Introduction to Production

Introduction to Computers

Organizational Behavior

Legal Aspects of Business — Part I

Fourth Year

Business Administration 489.2*

(Elective)*

(Elective)

(Elective)

(Elective)

(Elective)

(Elective)

Business Policy

*(Half-Course)

Economics

First Year

English 130.0 or 201.0

Mathematics 113.0

Elective)

Elective)

Elective)

Mathematics for Commerce Students

See requirement 4(b)

The General Program

Second Year

Business Administration 240.0

Business Administration 280.0

Economics 202.0

Economics 203.1*

Economics 204.2*

English 201.0 or 300.0/310.0⁽¹⁾

Principles of Financial and
Managerial Accounting

Principles of Management

Principles of Economics

Introductory Quantitative Methods
for Economists

Introductory Statistics for Commerce

(1) In lieu of a 300 level English a student may elect a non-Commerce course approved by the Department.

Third Year

Commercial Law 301.1 or 301.2

Economics 300.1*

Economics 301.2*

Economics Elective†

Philosophy 200.0 — 209.0

Elective

Legal Aspects of Business — Part I

Intermediate Microeconomic Theory

Intermediate Macroeconomic Theory

Fourth Year

Economics Elective†

Elective

Elective

Elective

Elective

†If the student intends to pursue graduate studies he is advised to take both

Economics 302.0 and 303.0

ENGINEERING

Engineering studies at Saint Mary's University provide the first three years of a five-year engineering degree in association with the Nova Scotia Technical College. Students follow a core programme leading to the Diploma in Engineering or a Bachelor of Science and a Diploma in Engineering upon completion of their courses at Saint Mary's.

With a diploma in Engineering a student may enter without examination any of the departments at the Nova Scotia Technical College and obtain the degree of Bachelor of Engineering (civil, electrical, mechanical, chemical, metallurgical, mining, industrial, or geological) on the successful completion of the last two years of a five-year course.

BACHELOR OF SCIENCE AND DIPLOMA IN ENGINEERING

Students entering with Senior Matriculation or equivalent, as defined below, will follow the curriculum given below and designated as Schedule "A". On successful completion of this programme the student will receive the Diploma in Engineering and a Degree in Science.

Senior Matriculation Requirements

A total of five courses from those listed below with a grade standing of 50 per cent in each course and a general average of at least 65 per cent is a necessary entrance qualification for those who plan to follow the programme outlined in Schedule "A".

- i. English
- ii. Mathematics
- iii. Physics
- iv. Chemistry
- v. One from history, geology, geography, ancient and modern languages.

Schedule "A"

First Year

Engineering 106.1
Engineering 107.2
Engineering 108.1 or 113.1
Engineering 212.2
Mathematics 210.1/211.2
Physics 221.0
Chemistry 203.0
English 201.0

Second Year

Engineering 203.1 (203.2)
Engineering 204.1 (204.2)
Mathematics 311.0
Chemistry Elective
Modern Physics 320.1
Physics 322.2
Geology 201.0 or elective
Elective

Third Year

Engineering 302.0
Engineering 314.1
Engineering 304.2
Engineering 303.1
Engineering 306.2
Engineering 308.0
Mathematics 425.0
Elective

DIPLOMA IN ENGINEERING

Students entering with Junior Matriculation or equivalent, as defined in this Calendar, will follow the curriculum given below and designated as Schedule "B". On successful completion of this programme the students will be awarded the Diploma in Engineering:

Schedule "B"

First Year

Engineering 106.1
Engineering 107.2
Engineering 108.1 or 113.1
Mathematics 116.2
Mathematics 110.1/111.2
Physics 111.0
Chemistry 101.0
English 130.0 or 201.0

Second Year

Engineering 203.1 (203.2)
Engineering 204.1 (204.2)
Mathematics 210.1/211.2
Chemistry 201.0
Physics 221.0
Geology 201.0 or Elective
Elective (one semester)
Engineering 212.2

Third Year

Engineering 302.0
Engineering 314.1
Engineering 304.2
Engineering 303.1
Engineering 306.2
Engineering 308.0
Mathematics 311.0
Elective

Note:

1. Students who plan to enter civil, mining, metallurgical or geological engineering at the Nova Scotia Technical College must substitute Geology 201.0 for the second year elective.
2. Engineering 113.1 (Surveying) is required only of students proceeding to the Nova Scotia Technical College in civil, mining or geological engineering.
3. The selection of courses from the humanities, where not specifically designated, is subject to the approval of the registration advisor.
4. Students with above average results in Grade XII may be permitted to complete the Diploma in Engineering in a 2-year period.
5. Where it is deemed advisable, students with partial Grade XII certificates may be given credits in certain subjects depending on the mark in the course and the general average. Such a decision will be at the discretion of the Dean of Engineering.

BACHELOR OF SCIENCE IN ENGINEERING MANAGEMENT

The purpose of this Degree is to provide students with sufficient engineering background and managerial skills to enable them to be employed in positions in management now held in many instances by people whose background has been purely in engineering.

The intention of the programme is to give students a balanced selection of courses in business administration, physical sciences and the humanities in addition to a thorough grounding in engineering studies. The first year of courses is selected in such a way that on completion of the year a student is able to transfer to Commerce or any other faculty with minimum dislocation and loss of credit.

The course of studies is designed principally for admission from Grade XII, but provision is made to enable a student to enter from Grade XI and complete the programme in the normal time.

Students entering from Grade XI would take Mathematics 110.1/111.2 in the first year followed by Physics 111.0 and Mathematics 210.1/211.2 during the following summer, at the end of which they would have the same status as students who entered from Grade XII. The last three years of both streams would be identical.

The programme conforms closely with the requirements for the Diploma in Engineering and is structured to permit the student to complete the requirements for the Diploma in Engineering by replacing the election in the fourth year with Engineering 303.1 (Fluid Mechanics) and Engineering 304.2 (Mechanics of Deformable Bodies) and adding Chemistry 203.0.

Year One

Mathematics 210.1/211.2
Chemistry 101.0
Engineering 106.1
Engineering 107.2
Social Science—Humanity
English 130.0 or 201.0

Year Two

Mathematics 311.0
Physics 221.0
Engineering 108.1 or 113.1
Engineering 212.2
Business Administration 240.0
Business Administration 280.0

Year Three

Mathematics 314.0
Engineering 203.1 (203.2)
Engineering 204.1 (204.2)
Engineering 302.0
Economics 202.0
Bus. Adm. 370.1 (370.2)
Bus. Adm. 317.1 (317.2)

Year Four

Elective
Engineering 308.0
Engineering 314.1
Engineering 306.2
Business Administration 489.2
Bus. Adm. 360.1
Bus. Adm. 385.1 (385.2)
Bus. Adm. 361.2

ENGINEERING AND SCIENCE

Students who have obtained the Diploma of Engineering under Schedule "B" may proceed to the degree of Bachelor of Science by enrolling in the Science Faculty and fulfilling the requirements as outlined under the Science section of this Calendar.

HONOURS DEGREES

The general requirements for honours degrees are as follows:

1. Students of above-average ability are urged to make application to follow an honours programme before the end of their sophomore year. Formal application for admission to an honours programme must be made on a form available in the Registrar's Office. The form must be submitted by the student to the Chairman of the Department concerned, and must receive the approval of the appropriate Dean of Faculty.
2. All honours programmes must consist of twenty full courses or equivalents beyond the freshman year, and must satisfy the requirements for the General Bachelor's degree, or for the degree of Bachelor of Science with major. A student must have the approval of the Committee on Academic Standing to transfer from an honours programme to the general programme.

ARTS AND SCIENCE

Honours Programmes

Arts: English, history, mathematics, modern languages, philosophy, political science, psychology, sociology.

Science: chemistry, physics.

1. A student must obtain a grade of not less than C in every Honours course as described in item 2 or 3 below, with an average of not less than B in the same courses. A student receiving a mark of less than C in any Honours course in item 4 or 5 will be permitted to continue in an Honours programme only with the approval of the Committee on Academic Standing.
2. In an Honours programme with a major, the twenty full courses or equivalents taken beyond the freshman level must include ten to twelve full courses or equivalents beyond the freshman level in the major subject. Supporting courses and electives will be decided in consultation with, and must be approved by the department of the major.

3. In an Honours programme with a combined major, the twenty full courses or equivalents taken beyond the freshman level must include twelve to sixteen full courses or equivalents beyond the freshman level in two allied subjects. Not more than nine, nor less than six, full courses or equivalents shall be taken in either of them. Supporting courses and electives will be decided in consultation with, and must be approved by the departments of the combined major.

COMMERCE

The Faculty of Commerce offers Honours Programmes in business administration and economics. Students who wish to enter one of these programmes must make application for admission on a form available in the Registrar's office. Applicants must meet the admission requirements of the particular programme (business administration or economics) and all applications must receive the approval of the department concerned and the Dean of Commerce.

The student is required to complete twenty full courses, or equivalent, beyond the freshman year, and meet the requirements of the particular programme.

A student must have the approval of the Committee on Academic Standing to transfer from an honours programme to a general programme.

Honours Programme in Business Administration

1. Admission requirements
An overall cumulative average of 2.6 at the end of the junior year. Students are advised to apply before the junior year so that academic counselling may be given; conditional admission may be granted at this time.
2. Requirements for Honours Degree:
 - a) completion of 20 full courses (or equivalent) beyond the freshman year
 - b) the student must meet the requirements for a concentration in business administration in the general programme
 - c) maintenance of a 2.6 overall average
 - d) i) at least ten full courses (or equivalent) in the Business Administration Department
ii) a student may substitute a course (to be included in the ten courses) from another department with the permission of the Department of Business Administration.
 - e) completion of the following courses
 - i) Statistical Analysis for Business (Business 307.1 or .2)
 - ii) Intermediate Microeconomic Theory (Eco. 300.1 or .2)
 - iii) Intermediate Macroeconomic Theory (Eco. 301.1 or .2)
 - iv) Business Research (Business 591.1 or .2)
 - f) i) a student must complete "functional specialization" in two of the following areas: accounting, economics, finance,

- management, management science, marketing
- ii) functional specialization in an area means two and one-half courses (or equivalent) at the 300 or 400 level in that area
- iii) courses from other departments can be included (in the two and one-half courses) with the permission of the Department of Business Administration
- iv) a listing of courses which satisfy a functional specialization in each of the six areas will be prepared annually by the Department of Business Administration.

Honours Programme in Economics

1. Admission requirements
 - a) a 2.6 average in economics
 - b) junior year or higher standing
2. Requirements for Honours Degree
 - a) ten full-year courses or equivalents in economics
 - b) no grade below C (2.0) in these ten courses (a student may receive a grade lower than C, but it cannot be counted in the ten required courses)
 - c) a minimum average of 2.6 in the ten economics courses presented for Honours
 - d) the student must meet the requirements for a major in economics
 - e) eight of the ten courses must be on or above the 300.0 level
 - i) a student may substitute a course from another department which is below or above the 300.0 level with the permission of the Department of Economics
 - ii) these substitutes will normally be in the Mathematics Department
 - f) The eight courses on or above the 300.0 level (or equivalent thereof) must contain at least one of the following:
 - i) Mathematical Economics (Economics 302.0)
 - ii) Economic Statistics (Economics 303.0)
 - iii) Advanced Microeconomics (Economics 440.1)
Advanced Macroeconomics (Economics 441.2)
 - g) the student will be expected to complete university requirements for graduation
 - h) twenty full courses, or equivalents, beyond the freshman year are required.

EDUCATION

BACHELOR OF EDUCATION PROGRAMME

This programme of studies is designed to give university graduates a professional foundation for careers in teaching. It is a full-time, full-year

programme consisting of six courses which deal primarily with preparation for teaching in Junior and Senior High Schools.

There are two goals aimed at in this programme. The first is to provide students with a basic competence in the skills of teaching academic subjects. The second goal is to encourage the development of those ideas which perceive the process of education as being one which, while providing the facts and skills necessary for living, has, at the same time, the more significant aim of expanding and enriching the mind of the learner. In furtherance of this goal, students are required to undertake a considerable amount of reading and writing with the object of developing their own personal understanding and philosophy of education.

The six courses in the programme are:

Philosophy of Education; Psychology of Education; History of Education; General Methods of Teaching; Special Methods of Teaching; Practice Teaching. In the case of Special Methods, students attend the two half classes dealing with the subjects they wish to teach in school. All students, unless previously trained as teachers and having a permanent certificate, take the teaching practice.

The six courses are not intended to be six independent phases of the programme. Rather, their content is intended to be integrated in a manner that best conduces to the aims mentioned above, teaching competence and the development of a personal understanding and philosophy of education. The organization of the courses - their placement in the academic year, their combination into integrated units, and so forth - is arranged accordingly and may be changed from year to year in keeping with experience gained.

This programme meets the approval of the Department of Education of Nova Scotia, and on successful completion of their studies, students may apply to the Department of Education of the Province of Nova Scotia for a teaching certificate. Students are entirely responsible for any negotiations with the Department of Education respecting their status.

Candidates should note that the pass mark for the entire programme is a C average, while for individual subjects the pass mark is D. No supplemental examinations are provided. Failure in one subject constitutes failure of the programme.

Admission Requirements

Candidates must hold a Bachelor's degree from Saint Mary's University or from another recognized university of similar standing.

Candidates who have had professional teacher training at the Nova Scotia Teachers College and who have since acquired a Bachelor's degree at Saint Mary's University, may obtain the Bachelor of Education degree by successfully completing two courses in the programme selected in consultation with the Dean of Education or his representative. The School undertakes to offer each year at least one course that would be suitable for this purpose at a time when practising teachers can attend.

Candidates who have had professional teacher training of two or three years duration at a Teachers College in another province of Canada, a College of Education in the United Kingdom or Teacher Training College in the United States, who are licensed as teachers by the Province of Nova Scotia, and who have acquired a Bachelor's Degree, may obtain the Degree of Bachelor of Education by undertaking a programme of study approved by Senate regulation.

Financial Aid

Bachelor of Education students are eligible for loans and bursaries under the Canada student loan plan. See page (32). They may apply for a University scholarship through the Director of Financial Aid.

To Apply for Admission

1. Complete application forms and make sure that all documents required are complete and returned with the application.
2. Make sure that supporting documents - transcripts, references, and so on will be sent to the University by those concerned. The Director of Admissions does **not** undertake to send for transcripts or references.
3. Applications should be made as soon as possible, but in any case, applications received after August 15th may not be processed in time for registration in September.
4. The admission of any candidate to the programme is probationary, and the status of all candidates is reviewed in January each year.

PRE-PROFESSIONAL COURSES

Students who plan to enter the professions of theology, law, medicine, dentistry, etc., should see that their plan of studies includes courses prerequisite for entrance into the professional school of their choice. Calendars of professional schools may be consulted in the Office of the Registrar. If Saint Mary's University's programme does not meet the entrance requirements to the school of his choice, the student is responsible for making it known to the appropriate Dean at registration. Appropriate adjustments will be made at that time.

The sequence of pre-professional courses may, if necessary, replace the concentration or major requirements for the Bachelor's degree. Though not strictly required by some professional schools, Saint Mary's recommends complete matriculation in Arts, Science, or Commerce, and does not guarantee that the timetable will allow the completion of minimum pre-professional requirements in less than the full time required for the Bachelor's degree. Prerequisite requirements for courses apply to pre-professional students.

Theology

Students who may wish to enter a theological seminary are advised to do

major concentration work in philosophy and/or Latin, supported by additional courses in languages and social sciences.

Law

Students planning to enter Law School should contact the Dean of their Faculty as soon as possible. In this way an appropriate programme of study can be worked out and agreed upon by the student and the Dean of his faculty.

Medicine

Students who wish to apply for admission to medical schools in Canada or the United States are generally required to have complete matriculation in Arts or Science.

“College training in preparation for the study of medicine should provide the opportunity for a good general education including the attainment of competence in English. It should include theoretical and laboratory courses in Physics, Biology, and Inorganic and Organic Chemistry. At the present time the minimum requirement for admission to approved medical schools is three years of college training for the average student. For most students, four years is recommended in order to provide an opportunity to gain a broad educational experience.” (Statement of the American Medical Association, December, 1951.)

Pre-medical students entering with Nova Scotia Grade XI or equivalent should complete fifteen university courses.

Credits should include Biology 111.1 & 112.2, Chemistry 101.0, 201.0, 343.0; freshman English, sophomore English, Mathematics 110.1 and 111.2; Philosophy and Physics 111.0. Of the six remaining credits, two or more advanced courses should be taken in the humanities, sciences, or social sciences.

Senior matriculation biology, general chemistry and physics will not ordinarily be accepted as equivalent to these required classes.

Students wishing to complete the requirements for a Bachelor of Science or Bachelor of Arts Degree must take five additional courses to be determined by the department of concentration so as to fulfill the requirements on pages (54) and (53) respectively.

Dentistry

Students who wish to apply for admission to dental schools and who enter with Nova Scotia Grade XI or equivalent must complete minimum of fifteen university courses which should include Biology 111.1 & 112.2; freshman English, sophomore English, Mathematics 110.1 and 111.2, Physics 111.0. The remaining courses should include at least three courses chosen from the humanities and social sciences.

Senior matriculation biology, general chemistry and physics will not ordinarily be accepted as equivalent to these required classes.

Students wishing to complete the requirements for a Bachelor of Science or Bachelor of Arts Degree must take five additional courses so as to fulfill the requirements on pages (54) and (53) respectively.

Architecture

Saint Mary's University, in association with the Nova Scotia Technical College, offers the first two years of a six-year course in Architecture leading to a Bachelor of Architecture degree. Students who complete two years of satisfactory University study (the courses studied being in any faculty) and who have been recommended by their appropriate Dean are admitted without further examination to the third year at the School of Architecture, Nova Scotia Technical College, Halifax, where they complete the four year professional phase of the curriculum.

Candidates should, preferably, complete at least one university course in Mathematics. Alternatively, they may be required to take an entrance examination in this subject at Nova Scotia Technical College.

GRADUATE STUDIES

Degree of Master of Arts

GENERAL REQUIREMENTS FOR ADMISSION

1. Candidates for admission to the Master's programme must
 - a. Hold a Bachelor's degree from a university of recognized standing, and have completed an undergraduate programme in the subject area chosen from his graduate study comparable to an Honours degree from Saint Mary's University.

Note.

A Bachelor of Education degree comparable to that granted by Saint Mary's University with second class standing will be considered the equivalent of an Honours degree for candidates seeking admission to graduate study in Education.

- b. Candidates whose native tongue is other than English may be required to take a proficiency test in English.
 - c. Have the approval of the Committee on Graduate Studies, and of the department concerned.
2. Candidates who have not completed the requirements for admission

may, on recommendation of the department concerned, be admitted by the Committee on Graduate Studies to a programme of preliminary study.

3. Certain departments may have special requirements for admission in addition to the general requirements.

4. Application for admission should be made to the Director of Admissions. The application form calls for an official transcript of the student's academic record and letters of recommendation from two persons in a position to judge the applicant's capacity for graduate study. The form and all supporting documents must ordinarily be on hand by May 31st.

GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE

1. Candidates normally must spend at least one academic year in residence. This period is additional to any time needed to meet the normal admission requirements. The Faculty of Education does make provision for part-time studies for the Master's Degree.

2. Candidates must complete four full courses and submit an acceptable thesis. On the recommendation of the department concerned, a three course programme is permissible for a candidate undertaking a proportionately more demanding thesis. In departments authorized by the Committee on Graduate Studies, a five course programme, without thesis, is also acceptable for the degree. Courses in all programmes must be at the 500 or 600 level, but where advisable, courses at the 400 level may be included in a programme, provided that the requirements applying to graduate students in such courses be of a graduate standard.

3. A department may accept two advanced courses in the chosen subject area completed at other universities as part of the requirements, provided they have not been applied previously towards another degree.

4. A mark of B is required in all courses.

5. Two failures will require withdrawal from the programme. There will be no supplemental examinations.

6. A candidate must complete all degree requirements within five calendar years of being accepted for the Master's degree programme.

FEES, FINANCIAL AID

The schedule of fees found on page 35 of this calendar applies to the graduate studies programme.

A number of fellowships up to a maximum of \$2,750 for the calendar year are available to full-time students. Further information on these may be obtained from the Director of Admissions. There is the possibility of supplementing fellowships through remuneration for departmental duties.

DEPARTMENTS OF INSTRUCTION

EDUCATION

The University's general requirements for admission to Graduate Studies and for the Master of Arts degree apply to the School of Education. The particular requirements of the School are as follows:

1. The candidate for admission is normally asked to appear for a personal interview with the Dean of Education and/or a faculty member designated by him. The interview usually occurs after the candidate's application form and supporting documents are on hand.
2. The candidate is encouraged to have completed at least one year of successful teaching before embarking on the M.A. in Education programme.
3. Course offerings include the following fields: philosophy of education, psychology of education, comparative education, curriculum and educational administration/supervision. The complete listing of courses is found on page 127.
4. In conjunction with the writing of a thesis a candidate must enroll in Education 610.0 (Graduate Research Seminar). This course does not count as one of the eight half courses normally required for the degree.

HISTORY

The University's general requirements for admission to Graduate Studies and for the Master of Arts degree apply to the department of History. The particular requirements of the Department are as follows:

1. The candidate will be required to demonstrate a reading knowledge of at least one foreign language by passing a test carried out in cooperation with the language department concerned. French is specified for candidates intending to write a thesis in the history of Canada.
2. A thesis may be written in the following three fields only: Canadian History, Canadian-American Relations, and Tudor and Stuart England.
3. Before proceeding to the thesis, the student following the course-and-thesis approach must pass an oral examination in which he will be expected to demonstrate knowledge in (a) his field of study and (b) the ideas of leading historians. A similar examination will be required of candidates in the course programme.
4. Two months prior to the termination of his courses, the candidate will be invited to select from among the members of the History Department, the Chairman and committee members of his examination board. While the Department will make every effort to meet his requests, it cannot guarantee that his selection will be complied with fully.

PHILOSOPHY

The University's general requirements for admission to Graduate Studies and for the Master of Arts degree apply to the Department of Philosophy. The particular requirements of the Department are as follows:

1. Candidates are normally required to have an honours degree in philosophy with at least second class standing, or its equivalent. In some cases a candidate with a general B.A. or its equivalent may be admitted with the permission of the Department. Such candidates will have to make up for background deficiencies. Some acquaintance with modern logic and the various sections of the history of philosophy is desirable for all candidates.
2. The degree can normally be taken in one year. Candidates with certain deficiencies in philosophical knowledge and education are asked to study for two years.
3. Candidates usually take four full courses in an academic year. Those enrolling in a two-year programme may be asked to attend certain medium level courses in their first year. In addition to the regular courses listed in the Calendar on page (183), reading and tutorial classes can be arranged for those who require special or advanced instruction. (see pages (190, 192) entitled Reading Courses).
4. Every Master of Arts candidate is required to write a thesis which shows critical acumen as well as originality. Thesis research is closely supervised by one or two members of the Department. Areas from which the topic of the thesis may be chosen include: ancient, medieval, and modern philosophy, metaphysics, philosophy of mind, epistemology, logic, philosophy of science, philosophy of man, philosophical analysis, philosophy of language, existentialism, phenomenology, ethics, and aesthetics.

COURSES OF INSTRUCTION

ANTHROPOLOGY

John Loewenstein
Seymour Cott
Susan DeMille
Brian Robinson

Professor, Chairman
Lecturer
Lecturer
Lecturer

Departmental Policy

1. To obtain a major concentration in Anthropology a student is required to have *five* university course credits in anthropology beyond the 120 level.
2. At least 50 per cent of a student's elective work must be done at the 300 level or above. Suggested supporting courses for anthropology majors include: biology, geology, history, psychology, religious studies and sociology, as well as French, German and/or Spanish.
3. The programme for a major in anthropology must be approved by the Chairman of the Department.

Note: The Department will allow some other courses to be counted in a student's anthropology concentration. Students must seek the Department's permission in such cases.

Should registration prove insufficient, the University reserves the right to cancel any listed course.

Courses starred with an asterisk will not be offered in 1973-74.

110.0 PRINCIPLES OF SOCIO-CULTURAL ANTHROPOLOGY

S. Cott

Prerequisite: none.

An introduction to the study of socio-cultural systems. Non-western cultures, economic systems, political systems, religions, language and values are contrasted with those of western, industrialized societies.

Lectures: three hours a week, two semesters.

140.0 PRINCIPLES OF PHYSICAL ANTHROPOLOGY (SOMATOLOGY)

Prerequisite: none

An introduction to man's primate background, his anatomy and his distinctive characteristic to develop 'culture'.

Lectures: three hours a week, two semesters.

ANTHROPOLOGY

152.0 INTRODUCTION TO HUMAN AND PHYSICAL GEOGRAPHY B. Robinson

Prerequisite: none

The course establishes the general physical characteristics of the world's natural environments and then goes on to examine simple human relationships within these environments.

Lectures: three hours a week, two semesters.

153.0 ETHNOLOGY I S. DeMille

Prerequisite: none.

A survey of the native peoples of North America, their cultures and their life histories as groups.

Lectures: three hours a week, two semesters.

155.0 INTRODUCTION TO ARCHAEOLOGY

Prerequisite: none.

"Archaeology is a science that must be lived. Dead Archaeology is the driest dust that blows." Sir Mortimer Wheeler.

This course includes the scope of archaeology: dating the past, the layout of an excavation, digging town-sites, and digging burials.

Lectures: three hours a week, two semesters.

208.0 CULTURE CHANGE AND DEVELOPMENT S. Cott

Prerequisite: one socio-cultural anthropology course or the consent of the instructor.

An examination of anthropological and other theories of social and cultural change, with references to case studies. Development is considered as a special case of socio-cultural change.

Lectures: three hours a week, two semesters.

209.0 CULTURAL ECOLOGY B. Robinson

Prerequisite: Anthropology 152.0.

An introduction to the study of the relationship between man and his environment, ranging from hunting and gathering societies to the dawn of civilization.

Lectures: three hours a week, two semesters.

ANTHROPOLOGY

210.0 PALEOANTHROPOLOGY

J. Loewenstein

Prerequisite: Sophomore or Junior standing with a background in anthropology and/or in biology, geology or sociology.

A survey of man's biological evolution, fossil primates and fossil man. The antiquity of man is considered in the light of the latest discoveries. A comparative study is made of contemporary 'stone age people'. Early man in the New World is discussed. Not open to students who have taken Anthropology 140.0.

Lectures (illustrated by slides): two hours a week, two semesters.

***220.0 INTRODUCTION TO CULTURAL GEOGRAPHY**

B. Robinson

Prerequisite: Anthropology 152.0.

A study of the cultural imprint of man on the world's landscapes. The course ranges from primitive societies to modern urban systems and includes brief introductions to mapping techniques, map interpretation and simple statistical procedures.

Lectures: three hours a week, two semesters.

230.0 ETHNOLOGY II

S. DeMille

Prerequisite: Anthropology 110.0 or Anthropology 153.0.

Vanished and vanishing cultures in Africa, Oceania, North America, South America and Asia, viewed in relation to historical and environmental influences.

Lectures: three hours a week, two semesters.

***240.0 SOCIO-CULTURAL ANTHROPOLOGY II**

S. Cott

Prerequisite: Anthropology 110.0, 153.0, or consent of the instructor.

An advanced study of the topics discussed in Anthropology 110.0.

Lectures: three hours a week, two semesters.

245.0 PRINCIPLES OF CULTURAL ANTHROPOLOGY

Prerequisites: none.

Not open to Majors, or those who have taken Anthropology 110.0 or 153.0.

A survey of anthropology with special reference to modern life.

Lectures: three hours a week, two semesters.

ANTHROPOLOGY

***260.0 PRIMITIVE ART**

Prerequisite: Sophomore or Junior standing with a background in anthropology and/or history of art, philosophy, psychology or religious studies.

A world survey of the art forms of non-literate societies, investigation of the function of art in relation to other aspects of culture, and the consideration of psychological theories of style.

Lectures: (illustrated by slides and films), three hours a week, two semesters.

303.0 METHODOLOGY AND FIELDWORK IN SOCIO-CULTURAL ANTHROPOLOGY S. Cott

Prerequisite: anthropology majors, or by consent of the instructor.

This course applies the concepts already familiar to the student to actual fieldwork within the province of Nova Scotia, as far as circumstances permit.

Lectures and discussions: two hours a week, two semesters.

310.0 HISTORY OF ANTHROPOLOGY

Prerequisite: Anthropology 110.0, Anthropology 153.0, or consent of the instructor.

The course deals with the development of the 'study of man' from its early beginnings as a natural science to present times.

Lectures: two hours a week, two semesters.

340.0 CULTURAL GEOGRAPHY OF CHINA B. Robinson

Prerequisite: preference will be given to students who attended geography courses on lower levels.

The course will cover the following topics: physical foundations, hydraulic agriculture, the nomad frontier, origins in the loess, Chinese expansion to the south, China's marketing and administrative geography, the Communist revolution.

Lectures: three hours a week, two semesters.

345.0 ETHNOLOGY III S. DeMille

Prerequisite: Anthropology 110.0 or Anthropology 153.0.

Ethnohistory and the development of ethnohistorical research, with

ANTHROPOLOGY

particular reference to North America. This course is concerned with the anthropologist's use of archival material, and the critical evaluation of different types of oral traditions as sources of historical information. Some ethnohistorical studies are examined.

Lectures: three hours a week, two semesters.

350.0 HUMAN ETHOLOGY (BIOLOGY OF BEHAVIOUR)

Prerequisite: Anthropology 160.

The course deals with the 'evolution of human behaviour'. It covers the origin of sociability, co-operation of individuals, aggression and other human characteristics.

Lectures: three hours a week, two semesters.

351.0 THE DAWN OF CIVILISATION J. Loewenstein

Prerequisite: junior or senior standing. Background in anthropology and history.

A study of man's earliest civilisation in the light of recent archaeological research; Southeast Asia, the Far East, the Near East, the New World.

Open to history students.

Lectures (illustrated by slides): two hours a week, two semesters.

445.0 ECONOMIC ANTHROPOLOGY

Prerequisite: Anthropology 110.0 or consent of the instructor.

The interplay in pre-industrial communities among material conditions, social relations and forms of exchange. Topics include substantive and formalist approaches, resources, the organization of work, reciprocity, surplus goods, levelling devices, redistribution, and market exchange.

Lectures: three hours a week, two semesters.

446.0 POLITICAL ANTHROPOLOGY

Prerequisite: Anthropology 110.0 or consent of the instructor.

This course considers public goal-oriented behaviour in pre-industrial communities. Topics include settlement of disputes, factionalism, and differences in access to and exercise of power.

Lectures: three hours a week, two semesters.

ASIAN STUDIES

447.0 ANTHROPOLOGY OF LAW

Prerequisite: Anthropology 110.0 or consent of the instructor.

The distinction between custom and law, a general study of the rules governing conduct and the sanctions imposed upon transgressors in order to maintain order.

Lectures: three hours a week, two semesters.

ASIAN STUDIES

Dr. Mary Sun, History Chairman, Committee on Asian Studies

There is little question of the place or significance of Asian Studies in university education. Since World War II, we have witnessed the increasing importance of Asia in world politics and economics and have recognized the need for educated citizens to develop a better understanding of the forces involved. An informed acquaintance with the Asian experience in the field of politics, history, culture, philosophy, and religion has become an essential corollary to a full understanding of our own Western experience.

An academic background in Asian studies will help to prepare students for careers in the diplomatic service, in international trade and industry and, of course, in the secondary and university teaching fields.

Saint Mary's University is the only institution in the Atlantic provinces offering a comprehensive programme in Asian Studies.

REGULATIONS

Aside from the normal university requirements for the Bachelor of Arts Degree, students intending to complete a major concentration in Asian Studies are required to obtain at least five full course credits from among the following courses, which are to be taken from at least three different departments.

Courses starred with an asterisk will not be offered in 1973-74.

ANTHROPOLOGY 340.0 Cultural Geography of China

ASIAN STUDIES

HISTORY	209.0	Modern East Asia
	*323.0	Dynastic History of China
	324.0	Cultural History of Japan
	342.0	China in Revolution
	*511.0	Seminar on Modernization in East Asia
POLITICAL SCIENCE	*440.0	Politics of the Developing Areas
	*441.0	Government and Politics of East Asia
	*553.0	International Studies Seminar
RELIGIOUS STUDIES	321.0	Primitive Religions in Asia
	323.0	Religions of India
	324.0	Religions of China
	*326.0	Buddhism

ASTRONOMY

D. L. DuPuy	Assistant Professor Observatory Director
G. F. Mitchell	Assistant Professor
M. W. Burke-Gaffney, S.J.	Professor Emeritus

The Burke-Gaffney Observatory opened in early 1972 and began a programme to make its facilities available to the general public and to students and faculty at Saint Mary's University. The telescope is a reflector with a 16-inch diameter mirror and is equipped with research instrumentation. Students interested in observing with the telescope (whether or not enrolled in an astronomy course) should contact the Observatory. Public tours are held every Saturday evening, with opportunities to use the telescope.

201.0 THE ASTRONOMICAL UNIVERSE

Prerequisites: Sophomore standing or permission of the professor.

This course is designed in particular for the non-science student. The subject matter will include the solar system, the life-cycles of

ASTRONOMY

stars, the structure of our Galaxy, the nature of external galaxies, and the expanding universe. Recent discoveries and unsolved problems, such as quasars, pulsars, exploding galaxies, and "black holes" will be discussed to illustrate the open and evolving nature of scientific investigation.

Lectures: three hours per week, two semesters.

There will be evening observing sessions about twice a month by arrangement. Students will have access to the Burke-Gaffney Observatory.

202.0 INTRODUCTORY ASTRONOMY FOR SCIENCE STUDENTS

G. F. Mitchell

Prerequisites: Physics 111.0 or equivalent, Mathematics 110.1 and 111.2 or equivalent.

After a study of the celestial sphere, the motions of the earth and time measurement, the solar system will be investigated in some detail. Topics will include the moon, planets, asteroids, comets, and the sun.

Consideration of the properties of stars and stellar evolution will lead to a brief discussion of neutron stars, black holes, and pulsars. Our galaxy will be examined with respect to its size, rotation, and spiral structure. The nature and space distribution of external galaxies will be studied.

Lectures: three hours per week, two semesters.

401.1 THE SOLAR SYSTEM

D. L. DuPuy

Prerequisites: Physics 221.0, Mathematics 310.0 (or concurrently).

This course will provide an introduction to the sun, the solar magnetic field, the solar activity, as related to solar system phenomena. Also included will be topics in the origins and characteristics of comets, meteors, asteroids, the interplanetary material, and a discussion of the interiors and atmospheres of the terrestrial and Jovian planets. Recent results from the Mariner interplanetary probes and Apollo experiments will be discussed.

Lectures: three hours per week, one semester.

402.2 STARS AND THE STELLAR SYSTEMS

D. L. DuPuy

Prerequisites: Physics 221.0, Mathematics 310.0 (or concurrently).

This course is an introduction to our knowledge of observational properties of open clusters, associations, and globular clusters, including the luminosity function and galactic distributions. Topics

ASTRONOMY — BIOLOGY

include interstellar reddening, zero-age main-sequence determination, metal abundances, and spectroscopic parallaxes. A discussion of stellar populations in galaxies, and the Local Group of galaxies will be included.

Lectures: three hours per week, one semester.

BIOLOGY

B. Kapoor	Associate Professor, Chairman
H. Bohr-Tylingo	Assistant Professor
A. Rojo	Professor
E. Rojo	Associate Professor
K. Thomas	Associate Professor
M. Wiles	Associate Professor

Commencing September 1970, the Biology Department adopted courses which are either of one or two semesters duration and organized around a core programme. Each single semester unit is worth one half credit and units are normally taken in pairs to provide whole numbers of credits. Courses of two semesters duration are valued at one full credit.

The biology core programme is normally part of the scheme followed by students doing either a *concentration* or a *major* in biology. It is thus intended to provide all biology students with a balanced and comprehensive knowledge in modern biological science. Such an approach is necessary because of the very wide spectrum of knowledge which is today included in biological science. Students completing the core programme and going on to finish a concentration in biology should understand most of the disciplines of the subject, and be capable of teaching, or doing technical work in biological, paramedical or health science fields after appropriate on-job training. Students finishing a major in biology should be capable of understanding graduate level work in biology after a further year of honours work or after a qualifying year in a graduate programme.

It should also be emphasized that the biology concentration at Saint Mary's is part of a General Science degree which aims as much at educating the whole man as providing specialized training in science. Moreover, a concentration in Biology is also useful as a first qualification for students intending to enter industrial or commercial organizations requiring technical representatives, supervisors or trainees. In the major programme, on the other hand, more emphasis is placed on the scientific aspects of the students' education and training.

BIOLOGY

Following are the schemes devised and recommended by the Department for biology students doing either the General Science degree or a B.Sc. with a major. The schemes fulfil the appropriate degree requirements, provide the core programme in biology, and follow a logical progression in development of knowledge of the subject areas covered.

Scheme A: General Science Degree with a Biology Concentration

Freshman Year

1. English (130.0)
2. Math (110.0³ & 111.2³)
3. History (100.0)
4. Principles of General Biology (Science) (111.1¹ & 111.2¹)
5. Geology (111.0²) or Physics (111.0²)

Sophomore Year

1. English (200.0 level)
2. Math (210.1³ & 211.2³)
3. Chemistry (101.0² or 202.0²)
4. Botany (204.0¹) or Zoology (205.0¹)
5. Genetics (210.1¹) or Biostatistics (209.2¹)

Junior Year

1. Social Science Elective (200.0 level)
2. Humanity Elective (200.0 level) or Social Science Elective (200.0 level)
3. Chemistry (343.0²)
4. Zoology (205.0¹) or Botany (204.0¹)
5. One course from either A or B
 - A. Cytology (302.0¹) or Physiology (305.0¹)
 - B. Ecology (310.0¹) or Evolution (317.0¹)

Senior Year

1. Philosophy (121.0/129.0)
2. Humanity elective (300.0 level) or Social Science Elective (300.0 level)
3. Social Science Elective (200.0 or 300.0 level)
4. One course from either A or B:
 - A. Cytology (302.0¹) or Physiology (305.0¹)
 - B. Evolution (310.0¹) or Ecology (317.0¹)
5. One elective from the following:
 - (a) Microbiology (406.0)
 - (b) Comparative Chordate Anatomy (420.0)
 - (c) Biology of fishes (405.0)
 - (d) Morphology of Vascular Plants (401.1) or Plant Taxonomy (403.1) and Vertebrate Embryology (408.2) or Human Genetics (412.2)

BIOLOGY

Scheme B: Science Degree with a major in Biology

Freshman Year

1. English (130.0)
2. Math (110.1³ & 111.2³)
3. History (100.0)
4. Principles of General Biology (Science) (111.1¹ & 111.2¹)
5. Chemistry (101.0² or 202.0¹)

* *Sophomore Year*

1. English (200.0 level)
2. Math (210.1³ & 211.2³)
3. Chemistry (343.0²)
4. Botany (204.0¹) or Zoology (205.0¹)
5. Genetics (210.1¹) & Biostatistics (209.2¹)

Junior Year

1. Humanity elective (200.0 level)
2. A related Science elective not in the major field (Junior or Senior Level)
3. Physics (111.0²) or Geology (111.0²)
4. Cytology (302.0¹) or General Physiology (305.0¹) or Ecology (310.0¹) or Evolution (317.0¹)
5. One course from the following: Botany (204.0¹) or Zoology (205.0¹) or Genetics (210.1¹) and Biostatistics (209.2¹)

Senior Year

1. Philosophy (121.0/129.0)
2. A non-biology science elective beyond sophomore level
3. Ecology (310.0¹) or Evolution (317.0¹) or Cytology (302.0¹) or Physiology (305.0¹)
4. Geology (200.0 or 301.0 or 302.0 etc.) or a Biology elective from the following: Microbiology (406.0) or Human Genetics (412.2) and Vertebrate Embryology (408.2)
5. One elective from the following:
 - (a) Comparative Chordate Anatomy (420.0)
 - (b) Biology of Fishes (405.0)

In Schemes A and B superscribed numerals ¹, ², and ³ indicate following:

1. course in core programme
2. required supporting science course
3. required mathematics course

NOTE: In any biology course, the instructor may decide to substitute a one hour seminar or discussion period for one of the lectures.

Courses starred with an asterisk will not be offered in 1973-74.

BIOLOGY

***103.0 BIOLOGY, ENVIRONMENT AND MAN (FOR NON-SCIENCE STUDENTS) M. Wiles**

An introduction to the scope and principles of modern biological science. Wherever possible examples explaining these principles will be drawn from familiar, everyday events. The importance of biology in today's world will be discussed with particular emphasis on the problems associated with degradation of the environment and human ecology. This course will not include laboratory work, but rather two lecture hours per week, and discussion sessions averaging two hours per week where demonstrations will sometimes be presented.

Note: Normally this course is restricted to non-science students for whom it constitutes a science elective. However, should a student wish to change to a science degree after taking the course, credit would still be granted for the course, either as an arts elective, or in the case of a mark of A as a regular science course equivalent to the introductory biology courses: Biology 111.1 and 112.2

Instruction: lectures and discussion periods four hours per week, two semesters.

111.1 PRINCIPLES OF GENERAL BIOLOGY 1 (SCIENCE) K. K. Thomas

Prerequisites: none.

Class designed for science students. A study of the physical, chemical and biological bases of the activities of living organisms. Emphasis will be on the modern approaches to biological sciences through a consideration of the following disciplines of biology: ecology, physiology, cytology, genetics, molecular biology, evolution and behaviour.

Instruction: lectures and/or seminars-discussion periods, three hours per week, one semester.

Laboratory: three hours per week, one semester.

112.2 PRINCIPLES OF GENERAL BIOLOGY 2 (SCIENCE) B. M. Kapoor

Prerequisite: Biology 111.1.

As for Biology 111.1. This unit is a continuation of studies undertaken in Biology 111.1

Instruction: as for Biology 111.1

For the following courses (‡) indicates a course within the core programme.

BIOLOGY

204.0‡ BOTANY

H. Bobr-Tylingo

Prerequisites: Biology 111.1 and 112.2.

A study of different plant groups: viruses, bacteria, fungi, algae, bryophytes, ferns, gymnosperms and angiosperms. Introduction to physiological processes in plants, including photosynthesis, transpiration, absorption, nutrition, enzymes and hormonal action and growth.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

205.0‡ ZOOLOGY.

E. Rojo

Prerequisites: Biology 111.1 and 112.2

A systematic survey of the animal kingdom with emphasis on gross morphology and its relation to function. Phylogenetic relationships, the influence of physiological adaptation through the mechanisms of heredity, and the involvement of evolutionary processes in the diversity of modern animal life.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

*209.2‡ BIOSTATISTICS

M. Wiles

Prerequisites: Biology 111.1 and 112.2; 204.0 or 205.0 concurrently; Math 110.0 and 111.2.

Introduction to the principles and methods of analyzing and using quantitative data in the biological sciences. The emphasis will be on practical applications of statistics in biology rather than on statistical theory. Material covered includes graphical presentation of data, transformation of data, handling of data. Descriptive statistics, distributions, regressions, correlation, probability theory, comparisons of sets of data and sampling methods will be studied. Calculator usage and computer programming will be undertaken, the latter if time permits.

Text: W. Scheffler, *Statistics for the Biological Sciences*, (Addison-Wesley), 1969.

Lectures: three hours per week, one semester.

Calculator or computer time, three hours per week, one semester.

210.1‡ GENETICS.

E. Rojo

Prerequisites: Biology 111.1 and 112.2, 204.0 and 205.0, or one concurrently; Chemistry 101.0 or 202.0.

A study of the principles of inheritance in plants and animals, by

BIOLOGY

consideration of the genetic code, protein synthesis, mutations, polyploidy and Mendel's Laws.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

249.1 INTRODUCTION TO MARINE BIOLOGY

Prerequisite: freshman level university biology or its equivalent (Biology 111.1 & 112.2).

A three week summer course sponsored by the Atlantic Universities Inter-University Committee on the Sciences and offered at the Huntsman Marine Laboratory, St. Andrews, New Brunswick, during July. The course is an introduction to the principles and methods of marine biology with an emphasis on field studies. Admission is by application. Students are expected to defray their own travel costs to and from the Laboratory. This course is worth one half-credit.

Instruction: lectures and seminars, eighteen days of instruction.

Laboratory or field work: eighteen days of instruction.

302.0‡ CYTOLOGY

B. M. Kapoor

Prerequisites: Biology 204.0 and 205.0 or permission of the Department.

Structure and function of the cell organelles, cell reproduction, meiosis, reproductive cytology, architecture of the chromosome, function of the chromosomes, chromosomal rearrangements, polyploidy, sex-chromosomes, karyotype evolution, cytology in relation to taxonomy.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

305.0‡ GENERAL PHYSIOLOGY

K. K. Thomas

Prerequisites: Biology 204.0, 205.0; Chemistry 202.0 or 343.0 or permission of the Department.

An introduction to the essential aspects of biochemistry and cellular physiology, discussion of how they underlie the basic processes carried on by organisms.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

***310.0‡ ECOLOGY**

M. Wiles

Prerequisites: Biology 204.0 and 205.0, or concurrently.

BIOLOGY

A study of the fundamental concepts and principles of modern ecology, consideration of physiological ecology, population ecology, and community ecology. A brief treatment of speciation, applied ecology, conservation and management. Renewable and non-renewable natural resources; the earth's biosphere as a dynamic, balanced system.

Text: E. P. Odum, *Ecology*, 3rd edition, Saunders, 1971.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters, or field work.

317.0‡ EVOLUTION

A. Rojo

Prerequisites: Biology 204.0, 205.0; 210.1 and 209.2.

A study of the history of the concept of evolution, the process whereby present species came into being, the mechanisms operating in nature, the factors affecting evolution and the final result as we witness it. Main areas of study are population genetics, history of the earth, fossil records and the evolution of man.

Text: L. E. Mettler and T. G. Gregg, *Population Genetics and Evolution*, Prentice-Hall, 1969.

Lectures and Seminars: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

*401.1 MORPHOLOGY OF VASCULAR PLANTS

B. M. Kapoor

Prerequisites: Biology 204.0 and 205.0, or permission of the Department.

Structure, development and evolution of major taxa of vascular plants — pteridophytes, gymnosperms and flowering plants, both extinct and extant.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

403.1 PLANT TAXONOMY

B. M. Kapoor

Prerequisites: Biology 204.0 and 205.0 or permission of the Department.

An introduction to the principles of plant variation, origin, distribution, evolution and classification; major emphasis will be to identify and classify vascular plants of Nova Scotia.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester, or field work.

BIOLOGY

405.0 BIOLOGY OF FISHES

A. Rojo

Prerequisites: Biology 205.0 and 209.2.

A study of the embryology, anatomy, physiology and classification of fishes. In classification and geographical distribution, emphasis will be placed on the marine northwest Atlantic fishes and the fresh-water fishes of Nova Scotia.

Text: K. F. Lagler, J. E. Bardach and R. R. Miller, *Ichthyology* (Wiley, 1962).

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters, or field work.

406.0 MICROBIOLOGY

H. Bobr-Tylingo

Prerequisites: Biology 302.0, 305.0; Chemistry 101.0 or 202.0.

Morphology, biochemical activity and classification of microorganisms: viruses, bacteria, molds, yeasts, and other microscopic life forms.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

408.2 VERTEBRATE EMBRYOLOGY

K. K. Thomas

Prerequisites: Biology 204.0, 205.0 or permission of the Department.

Early developmental processes involved in the transformation of the fertilized egg into a new individual.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

412.2 HUMAN GENETICS

E. Rojo

Prerequisites: Biology 209.2 and 210.1

The chemical and physical nature of genes. The study of population genetics in both plants and animals using a statistical approach. Emphasis will be on human mutations through study of chromosomes and analysis of pedigrees.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

420.0 COMPARATIVE CHORDATE ANATOMY

(Offered as a summer course)

A. Rojo

Prerequisites: Biology 205 or permission of the Department.

BIOLOGY — BUSINESS ADMINISTRATION

A comprehensive study of gross anatomy of the various systems of animal representatives of major classes, beginning with Amphioxus and culminating with the mammals.

Text: A. J. Romer, *The Vertebrate Body*, (4th edition), W. B. Saunders, 1970. Laboratory Manual: S. Wischnitzer, *Atlas and Dissection Guide for Comparative Anatomy*, Freeman, 1967.

Lectures: three hours per week, one Summer Session.

Laboratory: three hours per week, one Summer Session.

BUSINESS ADMINISTRATION

D. A. Hope	Assistant Professor, Chairman
G. A. Badawi	Assistant Professor
V. Baydar	Assistant Professor
H. G. Beazley	Professor
R. D. Connell	Associate Professor
D. Connelly	Associate Professor
O. P. Cormier	Professor
R. Gee	Lecturer
H. C. Knight	Assistant Professor
R. L. O'Rourke	Lecturer
S. Pendse	Assistant Professor
Z. H. Qureshi	Assistant Professor
J. H. Radford	Lecturer
V. V. Raghavan	Lecturer
H. J. Schroeder	Assistant Professor

Programmes Offered in the Department of Business Administration

Outlines of the three undergraduate programmes offered by the department are displayed below. For full details, of these programmes, see Bachelor of Commerce — General (page 58) and Bachelor of Commerce — Honours (page 67).

Course prefixes used in the outlines are as follows:

Bus
Cml
Eco
Egl
Mat
Phi

BUSINESS ADMINISTRATION

Credit value of each course is indicated in parenthesis after the course number.

Business Administration
Commercial Law
Economics
English
Mathematics
Philosophy

1. General Programme in Business Administration

First Year
(Freshman)
Egl 130.0 or 201.0 (1)

Mat 113.0 (1) Mathematics for Commerce Students
Elective (1)
Elective (1)
Elective (1)

Second Year
(Sophomore)
Bus 203.1 or 203.2 (½) Introductory Quantitative Methods for
Commerce
Bus 204.1 or 204.2 (½) Introductory Statistics for Commerce
Bus 240.0 (1) Principles of Financial and Managerial Accounting
Bus 280.0 (1) Principles of Management
Eco 202.0 (1) Principles of Economics
Egl 201.0 or 300.0/310.0 (1)

(1) In lieu of a 300 level English a student may elect a non-commerce course approved by the Department.

Third Year
(Junior)
Bus 370.1 or 370.2 (½) Introduction to Marketing
Bus 360.1 (½) Business Finance — Part I
Bus 361.2 (½) Business Finance — Part II
Bus 317.1 or 317.2 (½) Introduction to Production
Bus 321.1 or 321.2 (½) Introduction to Computers
Bus 382.0 (1) Organizational Behavior
Cml 301.1 (½) Legal Aspects of Business, Part I
A non-Commerce elective in one of Philosophy, Political Science, or Sociology approved by the Department.

Fourth Year
(Senior)
Bus 489.2 (½) Business Policy

BUSINESS ADMINISTRATION

Elective (½)
Elective (1)
Elective (1)
Elective (1)
Elective (1)

2. General Program in Accounting

First Year

(Freshman)

Egl 130.0 or 201.0 (1)

Mat 113.0 (1) Mathematics for Commerce Students

Elective (1)

Elective (1)

Elective (1)

Second Year

(Sophomore)

Bus 203.1 or 203.2 (½) Introductory Quantitative Methods
for Commerce

Bus 204.1 or 204.2 (½) Introductory Statistics for Commerce

Bus 240.0 (1) Principles of Financial and Managerial Accounting

Bus 280.0 (1) Principles of Management

Eco 202.0 (1) Principles of Economics

Egl 201.0 or 300.0/310.0 (1)

(1) In lieu of a 300 level English a student may elect a
non-commerce course approved by the Department.

Third Year and Fourth Year

Bus 321.1 or 321.2 (½) Introduction to Computers

Bus 341.1 (½) Intermediate Financial Accounting — Part I

Bus 342.2 (½) Intermediate Financial Accounting — Part II

Bus 346.1 or 346.2 (½) Introductory Cost Accounting

Bus 348.1 or 348.2 (½) Planning and Control

Bus 360.1 (½) Business Finance - Part I

Bus 361.2 (½) Business Finance - Part II

Cml 301.1 (½) Legal Aspects of Business, Part I

Cml 302.2 (½) Legal Aspects of Business, Part II

A non-commerce elective in one of Philosophy, Psychology,
Political Science or Sociology approved by the Department.

Elective (½)

Elective (1)

Elective (1)

Elective (1)

Elective (1)

(Electives must include the equivalent of one full course from
Bus 323, 324, 325, 443, 444, 450, 453, 455.)

A Commerce graduate who has followed the accounting concentra-

BUSINESS ADMINISTRATION

tion and obtained the required grades is normally in a position to sit for the uniform final examinations of the Institutes of Chartered Accountants of Canada two years after receiving the Commerce degree.

Commerce graduates may receive exemption from many of the courses and examinations conducted by the Atlantic Provinces Association of Chartered Accountants. The exemptions are based upon specific courses taken and the grades obtained in the undergraduate programme. Details of these exemptions may be obtained from the Department of Business Administration.

Arrangements for exemption from courses and examinations also exist with the Institutes of Chartered Accountants in other provinces.

Exemptions from courses and examinations are also granted by the Society of Industrial Accountants to Commerce graduates who register in the industrial accounting course sponsored by the Society.

Honours Programme in Business Administration

This program requires 20 full course credits beyond the first (freshman) year. After the Commerce freshman year, the program outline is as follows:

Sophomore

Bus 203.1 or 203.2 (½) Introductory Quantitative Methods for Commerce

Bus 204.1 or 204.2 (½) Introductory Statistics for Commerce

Bus 240.0 (1) Principles of Financial and Managerial Accounting

Bus 280.0 (1) Principles of Management

Eco 202.0 Principles of Economics

Egl 201.0 or 300.0/310.0 (1)

(1) In lieu of a 300 level English a student may elect a non-commerce course approved by the Department.

Junior

Bus 370.1 or 370.2 (½) Introduction to Marketing

Bus 360.1 (½) Business Finance — Part I

Bus 361.2 (½) Business Finance — Part II

Bus 317.1 or 317.2 (½) Introduction to Production

Bus 321.1 or 321.2 (½) Introduction to Computers

Bus 382.0 (1) Organizational Behavior

Cml 301.1 (½) Legal Aspects of Business

A non-Commerce elective in one of Philosophy, Psychology, Political Science or Sociology approved by the Department.

BUSINESS ADMINISTRATION

Senior

- Bus 307.2 (½) Statistical Analysis for Business
- Eco 300.1 (½) Intermediate Microeconomic Theory
- Eco 301.2 (½) Intermediate Macroeconomic Theory
- Elective (½)
- Elective (1)
- Elective (1)
- Elective (1) (non-business)

Honours

- Bus 489.2 (½) Business Policy
- Bus 591.1 or 591.2 (½) Business Research
- Elective (1)
- Elective (1)
- Elective (1)
- Elective (1) (non-business)

Note: Electives must be chosen so as to complete functional specialization in *two* of the following areas: accounting, economics, finance, general management, management science, marketing. Functional specialization in an area means two and one-half (2½) courses (or equivalent) at the 300 or 400 level in that area. A listing of courses which will satisfy the specialization requirements in each of the six areas is prepared annually by the Department of Business Administration.

Note: courses offered by the Department are grouped under the following subject areas:

- Quantitative Methods (00 - 09)
- Production (10 - 19)
- Computers (20 - 29)
- Accounting (40 - 59)
- Finance (60 - 69)
- Marketing (70 - 79)
- Management (80 - 89)
- Other (90 - 99)

QUANTITATIVE METHODS (00-09)

203.1 and 203.2 INTRODUCTORY QUANTITATIVE METHODS FOR COMMERCE

Prerequisite: Mathematics 113.0 or Grade XII Mathematics.

The purpose of this course is to provide an overview of calculus with an emphasis on application, an upgrading of algebraic techniques and an introduction to various other quantitative techniques for Commerce.

Lectures: three hours a week, one semester, half course.

BUSINESS ADMINISTRATION

204.1 and 204.2 INTRODUCTORY STATISTICS FOR COMMERCE

Prerequisite: Mathematics 113.0 or Grade XII Mathematics.

An introduction to probability and statistics with emphasis on business and economic applications.

Lectures: three hours a week, one semester, half course.

Note: This is the same course as Economics 204.2.

302.1 PRINCIPLES OF LINEAR, INTEGER, AND PARA- METRIC PROGRAMMING

Prerequisite: Business Administration 203.1 or 203.2.

Linear programming, integer programming, certain features of parametric programming, input-output analysis, and game theory; applications to such areas as production planning, product mixing, material transportation, job and salary evaluation, advertising expenditures, and assignment of salesmen; the role of these techniques in planning and organizing an efficient and profitable business system is stressed.

Lectures: three hours a week, one semester, half course.

307.2 STATISTICAL ANALYSIS FOR BUSINESS

Prerequisite: Business Administration 204.1 or 204.2.

A further study of statistics and its application to the solution of business problems; analysis of variance, sampling, correlation, index numbers, time service analysis, seasonal index forecasting, and Bayesian statistics will form the foundation of the course.

Lectures: three hours a week, one semester, half course.

PRODUCTION (10-19)

317.1 and 317.2 INTRODUCTION TO PRODUCTION MANAGEMENT

Prerequisite: Business Administration 280.0, Mathematics 113.0 or equivalent.

An introduction to the production function and process, including coverage of the systems concept and the basic techniques for decision making in the areas of planning and control.

Lectures: three hours a week, one semester, half course.

318.2 TECHNIQUES OF PRODUCTION MANAGEMENT

Prerequisite: Business Administration 203.1 or 203.2, 317.1 and 321.1 or 321.2.

BUSINESS ADMINISTRATION

A more advanced course in the study of the production function, making extensive use of case analysis. The course covers the production system, planning models and process models.

Lectures: three hours a week, one semester, half course.

COMPUTERS (20-29)

321.1 and 321.2 INTRODUCTION TO COMPUTERS

Prerequisite: Business Administration 240.0, Mathematics 113.0 or equivalent.

Introduction to computer concepts; computer programming, using FORTRAN IV; study of computer systems, information systems and data processing functions, systems analysis and flowcharting.

Lectures: three hours a week, one semester, half course.

322.2 COMPUTER APPLICATIONS FOR MANAGEMENT

Prerequisite: Business Administration 204.1 or 204.2 and 321.1 or 321.2.

Further study of computer-based management information systems, models and stimulation, selected topics from computer-dependent management techniques.

Lectures: three hours a week, one semester, half course.

323.2 INFORMATION SYSTEMS I

Prerequisite: Business Administration 321.1 or 321.2

The study of computer-based data processing and information systems, management problems of computers in business such as organization, control and feasibility.

Lectures: three hours a week, one semester, half course.

324.2 THE USE OF COBOL IN DATA PROCESSING

Prerequisites: Business Administration 321.1 or 321.2.

COBOL programme organization, file organization description and accessing, edit, sort, file maintenance and report writing programmes, arrayed data, integration concepts, multi-programming concepts.

Lectures: three hours a week, one semester, half course.

425.1 INFORMATION SYSTEMS II

Prerequisite: Business Administration 323.2.

Systems theory, data-based integrated data processing, manage-

BUSINESS ADMINISTRATION

ment information systems in the various functional areas of business including accounting, credit, marketing, sales, inventory, production. The control, privacy and audit of information.

Lectures: three hours a week, one semester, half course.

ACCOUNTING (40-59)

240.0 PRINCIPLES OF FINANCIAL AND MANAGERIAL ACCOUNTING

A study of basic accounting concepts, and their application to business transactions and financial statements. An introductory consideration of asset and liability accounts, and the managerial uses of accounting data.

Lectures: four hours a week, two semesters, full course.

341.1 INTERMEDIATE FINANCIAL ACCOUNTING — PART I

Prerequisite: Business Administration 240.0.

Part I of a two course series which provides a comprehensive study of financial accounting and financial reporting to shareholders. This course is to be followed by Intermediate Financial Accounting — Part II.

Lectures: three hours a week, one semester, half course.

342.2 INTERMEDIATE FINANCIAL ACCOUNTING — PART II

Prerequisite: Business Administration 341.1.

Part II of a two course series which provides a comprehensive study of financial accounting and financial reporting to shareholders.

Lectures: three hours a week, one semester, half course.

443.1 ADVANCED FINANCIAL ACCOUNTING I — CORPORATE ACCOUNTING

Prerequisite: Business Administration 342.2.

An advanced study of mergers and acquisitions, consolidated financial statements, branch accounting for foreign operations, and other selected corporate accounting topics.

Lectures: three hours a week, one semester, half course.

BUSINESS ADMINISTRATION

444.2 ADVANCED FINANCIAL ACCOUNTING II — SPECIAL TOPICS

Prerequisite: Business Administration 342.2.

An advanced study of special topics including partnerships, fiduciary accounting, fund accounting, price level changes and receivership and liquidations.

Lectures: three hours a week, one semester, half course.

346.1 INTRODUCTORY COST ACCOUNTING

Prerequisite: Business Administration 240.0.

This is a basic course in cost accounting principles, techniques and procedures. Product costing, non-manufacturing costs with emphasis on managerial uses of cost accounting techniques.

Lectures: three hours a week, one semester, half course.

348.2 PLANNING AND CONTROL

Prerequisites: Business Administration 240.0 and 280.0.

Covers concepts and techniques of planning and control such as profit planning, financial forecasting, budgets, performance measurements, management control systems, analysis of performance.

Lectures: three hours a week, one semester, half course.

450.0 AUDITING

Prerequisite: Business Administration 342.2.

An introduction to the function of the auditor in the financial community. A study of accounting systems, their design and evolution within the framework of auditing concepts and procedures provides the advanced accounting student with an opportunity to combine his previous theoretical knowledge with the practical aspects of evaluating financial statements.

Lectures: three hours a week, two semesters, full course.

453.1 TAXATION

Prerequisite: Business Administration 342.2.

An introductory study of the theory and procedures of taxation at all levels of government.

Lectures: three hours a week, one semester, half course.

BUSINESS ADMINISTRATION

455.2 ACCOUNTING SEMINAR

Prerequisite: Business Administration 342.2.

An intensive study of the problems of income determination, asset valuation and liability and equity measurement, a study of the accounting theory that is proposed as a framework for the resolution of these problems; investigation of the relationship of financial accounting to such areas as finance, motivation system of the firm, operations research, management information system.

Lectures: three or four hours a week, one semester, half course.

FINANCE (60-69)

360.1 BUSINESS FINANCE — PART I

Prerequisite: Business Administration 240.0, 280.0, 203.1 or 203.2 and 204.1 or 204.2.

A basic course in business finance introducing the student to the Canadian financial environment, instruments of finance, external financing, capital budgeting. This course is to be followed by Business Finance — Part II.

Lectures: three hours a week, one semester, half course.

361.2 BUSINESS FINANCE — PART II

Prerequisite: Business Administration 360.1.

The second course of a two course series in business finance. The course covers financial analysis, cost of capital, sources of capital, dividend policy, lease financing, management of assets.

Lectures: three hours a week, one semester, half course.

463.1 FINANCIAL MANAGEMENT

Prerequisite: Business Administration 361.2.

Managerial in emphasis, the course covers problems of capital structure and valuation of a firm, the cost of capital in relation to financing problems, dividend policies and their relation to retained earnings, mergers and reorganizations.

Lectures: three hours a week, one semester, half course.

464.2 CORPORATION FINANCE

Prerequisite: Business Administration 463.1.

A study of current literature in corporation finance emphasizing empirical findings and application of theory to practice with the help of case studies.

Lectures: three hours a week, one semester, half course.

BUSINESS ADMINISTRATION

466.1 INVESTMENTS

Prerequisite: Business Administration 361.2.

The analysis of investment values, study of stock and bond markets, evaluation of investment techniques, investment analysis by industries, management of personal finance and portfolio.

Lectures: three hours a week, one semester, half course.

467.2 PORTFOLIO MANAGEMENT

Prerequisite: Business Administration 466.1.

A comprehensive analysis of the decision-making process of portfolio management. Major subject areas include the definition of objectives to accord with the preferences, plans, and obligations of major classes of investors, analysis of the likely risks and gains of investments, individually and by class of security, the selection of portfolios which appear most likely to satisfy stated investment objectives.

Lectures: three hours a week, one semester, half course.

MARKETING (70-79)

370.1 and 370.2 INTRODUCTION TO MARKETING

Prerequisite: Business Administration 280.0 and Economics 202.0.

A study of principles and fundamental concepts of marketing and marketing management: pricing, promotion, merchandising, distribution structure and marketing research.

Lectures: three hours a week, one semester, half course.

371.2 MARKETING MANAGEMENT

Prerequisite: Business Administration 370.1 or 370.2.

Managerial in focus, this course is devoted to analyzing opportunities, studying marketing activity and its organization, planning the marketing programme and controlling the marketing effort.

Lectures: three hours a week, one semester, half course.

372.2 MARKETING COMMUNICATION AND ADVERTISING

Prerequisite: Business Administration 370.1 and 370.2.

An introduction to the study of advertising principles and practices, including advertising strategies, media presentation and evaluation of effectiveness.

Lectures: three hours a week, one semester, half course.

BUSINESS ADMINISTRATION

373.1 MANAGEMENT OF MARKETING CHANNELS

Prerequisite: Business Administration 370.1 or 370.2.

A study of the marketing distribution system, retailing and wholesaling, merchandising, and relevant legislation.

Lectures: three hours a week, one semester, half course.

374.2 SALES MANAGEMENT

Prerequisite: Business Administration 370.1 or 370.2.

A study of the managerial problems involved in sales management, including the recruitment, training, compensation and motivation of sales personnel and the control and integration of the individual selling effort.

Lectures: three hours a week, one semester, half course.

375.1 INTERNATIONAL MARKETING

Prerequisite: Business Administration 370.1 or 370.2.

An introduction to the nature and environment of international marketing including the study of the international consumer, product policy, distribution promotion, research and management.

Lectures: three hours a week, one semester, half course.

376.1 or 376.2 CONSUMER BEHAVIOR

Prerequisite: Business Administration 370.1 or 370.2.

A study of the nature of consumer behavior, the foundation of consumer research, consumer market segments, consumer attitudes.

Lectures: three hours a week, one semester, half course.

377.1 or 377.2 INDUSTRIAL MARKETING

Prerequisite: Business Administration 370.1 or 370.2.

A study of the marketing functions of industrial producers whose products are employed in the manufacture of other products or become parts of other goods and services, behavior of industrial, governmental and institutional buyers.

Lectures: three hours a week, one semester, half course.

378.1 MARKETING RESEARCH

Prerequisite: Business Administration 204.1 or 204.2 and 370.1 or 370.2.

BUSINESS ADMINISTRATION

An introductory course in the nature, methods, procedures and application of marketing research.

Lectures: three hours a week, one semester, half course.

MANAGEMENT (80-89)

280.0 PRINCIPLES OF MANAGEMENT

A study of fundamental concepts of management, decision making, management planning, organizing, motivating and controlling. A prime objective of this course is to introduce the systems concept as a foundation for further study in the programme.

Lectures: three hours a week, two semesters, full course.

382.0 ORGANIZATIONAL BEHAVIOR

Prerequisite: Business Administration 280.0.

An introductory study of human behavior in formal organizations, with emphasis on patterns and theories of behavior in industry. The course exposes the student to behavioral science concepts through readings, a text, classroom sessions, and application of course concepts to the analysis of cases.

Lectures: three hours a week, two semesters, full course.

483.1 or 483.2 INTERPERSONAL BEHAVIOR

Prerequisite: Business Administration 382.0.

This course studies and attempts to improve the kinds of interpersonal competence that can contribute to the effectiveness of an administrator. By focussing on the causes of misunderstandings between persons and reducing the causes of such misunderstandings, the course attempts to improve an individual's interpersonal skills as a member of an organization.

Lectures: three hours a week, one semester, half course.

385.1 and 385.2 PERSONNEL MANAGEMENT

Prerequisite: Business Administration 280.0.

Organization and management of personnel, manpower planning, improvement of performance, motivation, communication, supervision, the work group, remuneration.

Lectures: three hours a week, one semester, half course.

386.1 and 386.2 INDUSTRIAL RELATIONS

Prerequisite: Business Administration 280.0.

BUSINESS ADMINISTRATION

An introduction to the field of industrial relations, a study of union structure and operation, collective bargaining and allied material.

Lectures: three hours a week, one semester, half course.

487.1 or 487.2 SMALL BUSINESS MANAGEMENT

Prerequisite: Business Administration 361.2 and 370.1 or 370.2.

The objective of the course is to stimulate informed interest in creating and managing a small business; the course includes the investigation of new business opportunities, capital requirements and sources, information systems, marketing and tax considerations.

Lectures: three hours a week, one semester, half course.

388.1 BUSINESS AND ITS ENVIRONMENT

Prerequisite: Business Administration 280.0 and Economics 202.0.

Business and its economic and political environment, the social responsibilities of business.

Lectures: three hours a week, one semester, half course.

489.2 BUSINESS POLICY

Prerequisite: Business Administration 361.2, 370.1 or 370.2 and one additional full credit in Business Administration at the 300 level or above.

The perspective of top management, sizing up situations, formulating policies, discovering opportunities and planning programmes of action; organizing administrative personnel and putting plans into action, control, follow up and appraisal, day to day administrative problems, the business leader and public responsibility.

Lectures: three hours a week, one semester, half course.

OTHER (90-99)

591.1 and 591.2 BUSINESS RESEARCH

Prerequisite: permission of the Department.

The student will undertake an original investigation of a business problem and submit a report on his findings and recommendations.

Lectures, seminars and independent study — half course.

CHEMISTRY

E. R. Hayes	Associate Professor, Chairman
D. H. Davies	Associate Professor
J. Elhanan	Associate Professor
J. Ginsburg	Assistant Professor
J.W. Murphy, S.J.	Professor
A. T. Sabean	Professor
K. Vaughan	Assistant Professor
J.C. O'C. Young	Associate Professor

The programme of the Chemistry Department is designed to satisfy two functions:

(1) to fulfill the requirements for the general degree of Bachelor of Science, the degree of Bachelor of Science with major and the Honours Bachelor of Science degree.

These degrees will permit graduates to enter the work force or graduate school with a background at least equal to that provided by other universities in Canada and the United States.

(2) to introduce students in other disciplines to the idea of Chemistry and provide them with the chemical skills necessary for their professional development.

All members of staff are engaged in active research projects, and senior undergraduates are expected and encouraged to contribute to these projects. Some jobs, both during the term and in the summer, are available for senior undergraduates.

NOTE: Students failing to complete a laboratory course prior to the date of examination will not be eligible to write the examination.

101.0 INTRODUCTION TO CHEMISTRY

Prerequisite: none.

The fundamental laws and principles of chemistry are explored and applied in the study of selected nonmetals, metals and their compounds.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

201.0 GENERAL CHEMISTRY FOR PHYSICAL SCIENCES

Prerequisites: Chemistry 101.0 or equivalent, Mathematics 210.1 and 211.2 to be taken concurrently.

CHEMISTRY

An introduction to the chemistry of gases, liquids, solids and solutions.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

CHEMISTRY 202.0 GENERAL CHEMISTRY FOR LIFE SCIENCES

Prerequisite: Chemistry 101.0 or equivalent, Mathematics 210.1 and 211.2 to be taken concurrently.

A practical introduction for students in life sciences to the chemical behaviour of gases, liquids, solids and solutions.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

203.0 GENERAL CHEMISTRY FOR ENGINEERS

Prerequisites: Chemistry 101.0 or equivalent, Mathematics 210.1 and 211.2 to be taken concurrently.

A practical introduction for engineering students to the chemical behaviour of gases, liquids, solids and solutions.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

209.0 THE CHEMISTRY OF LIFE: THE HUMAN ELEMENT

J. Ginsburg K. Vaughan

Prerequisite: Sophomore standing or permission of the professor.

A course designed for non-science students. Chemical concepts fundamental to understanding the nature of molecules occurring in living systems will be presented. To gain insight into the process of scientific inquiry and how the scientist as a human being affects the course of scientific development, critical stages in the development of atomic and molecular theory and events leading to the formulation of the structure of DNA will be discussed. The unifying theme is that science is not the advance of a monolithic juggernaut but the gradual accomplishment of human endeavour.

This course will not normally be used as credit towards a science degree.

Lectures/Seminars: three hours per week, two semesters.

311.0 INTRODUCTORY PHYSICAL CHEMISTRY

D. H. Davies

Prerequisites: Chemistry 201.0, Mathematics 310.0 (this course may be taken concurrently).

CHEMISTRY

Fundamental thermodynamics, electrochemistry, kinetic theory of matter, surface chemistry and catalysis.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

331.0 ANALYTICAL CHEMISTRY FOR CHEMISTS AND GEOLOGISTS (GEOLOGY 355.0)

Prerequisite: Chemistry 201.0, Geology 201.0 for Geology students. It is recommended that other students have Geology 111.0.

An integrated lecture-laboratory course with emphasis on analytical methods of importance to geologists and chemists, e.g., gravimetric analysis, colorimetry, fluorimetry, flame photometry and atomic absorption.

Lectures and Laboratories: Junior, two semesters, 6 hours per week.

341.0 CHEMISTRY OF THE ELEMENTS E. R. Hayes

Prerequisites: Chemistry 201.0.

An integrated course in inorganic and organic chemistry emphasizing structure and bonding. Fundamental concepts of organic chemistry are presented in the second semester.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

343.0 ELEMENTARY ORGANIC CHEMISTRY A. T. Sabeau

Prerequisites: Chemistry 202.0 or equivalent.

A comprehensive treatment of organic chemistry for non-chemistry majors. The principal functional classes, reaction mechanisms, stereo-chemistry and physical methods are discussed in the lectures and illustrated in the laboratory.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

371.0 INTRODUCTION TO ENVIRONMENTAL CHEMISTRY J.C. O'C. Young

Prerequisite: Chemistry 101.0 or equivalent.

Chemical and energy cycles in nature, the energetics of environmental change, the significance and measurement of environmental quality parameters, selected pollution topics and research studies.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

CHEMISTRY

411.0 PHYSICAL CHEMISTRY

D. H. Davies, J. W. Murphy, S.J. J. Ginsburg

Prerequisites: Chemistry 311.0, Mathematics 310.0.

Basic quantum theory, statistical thermodynamics, chemical kinetics and reaction mechanisms.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

431.0 ANALYTICAL CHEMISTRY

Prerequisites: Chemistry 201.0 and one of Chemistry 311.0, 341.0 or 343.0.

Electrochemical and spectroscopic methods of instrumental analysis and an introduction to the techniques of separation chemistry.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

441.0 INTERMEDIATE ORGANIC CHEMISTRY

K. Vaughan

Prerequisites: Chemistry 341.0 (or Chemistry 343.0 with permission of the Chemistry Department).

A study of aliphatic, aromatic and heterocyclic compounds with emphasis on modern methods and concepts in stereochemistry, reaction mechanisms and physical properties.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

500.0 RESEARCH THESIS

Prerequisites: restricted to fourth year students in the Honour's Programme.

The student will carry out a research project under the direction of one of the members of the Department and will prepare a thesis on his work. The thesis is presented orally.

Laboratory: a minimum of six hours per week, two semesters.

511.0 ADVANCED TOPICS IN PHYSICAL CHEMISTRY

Prerequisites: Chemistry 411.0.

A course on special topics selected from advanced areas of physical chemistry.

CHEMISTRY — CLASSICS

Lectures: three hours a week, two semesters.

Laboratory: none.

513.0 QUANTUM CHEMISTRY

Prerequisites: Chemistry 411.0, Physics 210.0, 211.1 and Mathematics 310.0.

Techniques for generating approximate solutions of atomic and molecular wave equations (Hartree-Fock method, perturbation theory, configuration interaction). Interpretation and properties of probability distributions. The use of symmetry in quantum chemistry. Theoretical basis of spectroscopy.

Lectures: three hours a week, two semesters.

Laboratory: none.

531.0 SELECTED CHAPTERS IN INSTRUMENTAL ANALYSIS

Prerequisites: Chemistry 431.0.

A lecture-seminar-laboratory course designed to present topics in electronic circuits, radio-chemistry, spectroscopy and electrochemistry.

Lectures and Laboratory: five hours per week, two semesters.

541.0 ADVANCED ORGANIC CHEMISTRY

Prerequisites: Chemistry 441.0 and Chemistry 411.0 (the latter may be taken concurrently).

Selected topics in stereochemistry, heterocyclic compounds, natural products and polymers. In the laboratory the student will perform selected synthesis and characterize structure by spectroscopic methods.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

CLASSICS

Rev. M. J. O'Donnell, S.J.

Geraldine T. Thomas

Vincent McB. Tobin

Associate Professor

Assistant Professor

Assistant Professor

Courses starred with an asterisk will not be offered in 1973-74.

CLASSICS

LATIN

LATIN 100.0

G. T. Thomas

A course in the essentials of Latin for students who have not completed Matriculation Latin.

Text: DeWitt, *College Latin*.

Lectures: four hours a week, two semesters.

*LATIN 101.0 FIRST YEAR COLLEGE LATIN

Prerequisite: Matriculation Latin.

A thorough study of Latin syntax with selections from various authors, exemplifying the syntax explained in the given chapter.

Texts: Cicero, *Pro Archia*. Wilding, *Latin Course for Schools*, Part II, Ch. 27 to end and Part III.

Lectures: three hours a week, two semesters.

LATIN 201.0 INTRODUCTION TO LATIN EPIC POETRY

Staff

Emphasis is placed on the exact rendering of the thought content of certain selections into idiomatic English. Prose composition stresses the exact rendering of English into idiomatic Latin.

Texts: Vincent and Mountford, *Outline of Latin Prose Composition*. Vergil, *Aeneid* (Books II and IV will be studied from the Latin text; the remainder of the *Aeneid* will be considered in English).

Lectures: three hours a week, two semesters.

*LATIN 301.0 THE POETRY OF HORACE

A critical analysis and appreciation of Horace's art and ideals. Prose composition.

Texts: Horace, *Odes*, *Satires*, *Ars Poetica*.

*LATIN 401.0

A tutorial course in the writings of Tacitus, Livy and Juvenal. Roman history from Augustus to the beginning of the middle ages.

*LATIN 402.0 CICERO'S RHETORIC

An intensive study of Cicero's Rhetoric.

Prose composition.

Texts: *Pro lege Manilia*, *Pro Marcello*, *Pro Ligario*.

***LATIN 403.0**

A tutorial course on Cicero (*De Amicitia. De Senectute*) and Lucretius (*De Rerum Natura*).

LATIN 404.0

A tutorial course, the content of which may be varied according to the needs and interests of the student. Directed readings and research.

GREEK**GREEK 101.0 INTRODUCTORY GREEK** V. Tobin

An introductory course covering the major grammatical points of the Greek language.

Lectures: three hours per week.

This course will be followed in succeeding years by more advanced courses in the reading and interpretation of Classical authors.

GREEK 201.0 SECOND YEAR GREEK V. Tobin

Prerequisite: Greek 101.0.

An application of the major grammatical points of the Greek language through the reading of the selected of Classical authors:

- i. Homer (*Iliad*)
- ii. Xenophon (*Anabasis*)
- iii. the dramatists
- iv. lyric poetry

Lectures: three hours a week, two semesters.

CLASSICAL LITERATURE**CLASSICS 301.0 CLASSICS IN TRANSLATION** V. Tobin

The Classical literature of Greece and Rome in translation. This course is especially recommended to all Arts students who are not taking Latin in their programme, and also to students of ancient history.

Texts: Various selections from the Classical writers of Greece and Rome.

Lectures: three hours a week (or equivalent).

CLASSICS

CLASSICS 250.0 GREEK PHILOSOPHY

See Philosophy 250.0.

CLASSICAL HISTORY

CLASSICS 120.0 THE CLASSICAL CIVILIZATIONS OF GREECE AND ROME

G. T. Thomas

A general introduction to the civilizations of ancient Greece and Rome with particular regard to political organization and cultural contribution to modern western society.

Lectures: three hours a week.

CLASSICS 303.0 HISTORY OF GREECE

G. T. Thomas

A concentrated study of selected topics dealing with the main features of Greek history, stressing both the greatness and the weakness of ancient Greek society. This course is designed as a companion and parallel to Classics 304.0, which deals in the same manner with the history of Rome. This course may also be used as a history credit.

Lectures: three hours a week (or equivalent).

CLASSICS 304.0 HISTORY OF ROME

G. T. Thomas

A concentrated study of selected topics dealing with the main features of the Roman history, stressing both the greatness and weakness of the Roman world. This course is designed as a companion and parallel to Classics 303.0, which deals in the same manner with the history of Greece. This course may also be used as a history credit.

Lectures: three hours a week (or equivalent).

***CLASSICS 305.0 HELLENISTIC HISTORY**

G. T. Thomas

Prerequisite: one course in Classics or history. Other students may be admitted at the discretion of the instructor.

This course considers the characteristics of the Hellenistic world from Alexander the Great until the arrival of Pompey in the east (334 B.C. to 63 B.C.). This is the period of the expansion of Greek culture over the eastern world (Hellenism), giving the rise to a highly complex historical era, one containing many of the problems and features of 20th century life.

This course may also be used as a history credit.

Lectures: three hours a week or equivalent.

CLASSICS — COMMERCIAL LAW

CLASSICS 310.0 HISTORY OF ISRAEL

V. Tobin

A study of the history of the ancient Hebrew kingdoms of Israel and Judah from the earliest settlements in Palestine to the fall of Jerusalem in 70 A.D.

Lectures: three hours per week or equivalent.

***CLASSICS 334.0 ROMAN HISTORY THROUGH READING OF PRIMARY SOURCE MATERIAL**

G. T. Thomas

Prerequisite: Classics 120.0, or Classics 304.0, or permission of instructor.

A study of selected topics in Roman history based on readings from various authors and dependent upon some knowledge of the chronological development of Rome.

Lectures: three hours per week or equivalent.

COMMERCIAL LAW

301.1 LEGAL ASPECTS OF BUSINESS, PART I

An introduction to the essential legal aspects of commerce, contracts, some special contracts, corporations, and special areas, such as anti-combines, tax and tariff legislation.

Lectures: three hours a week, one semester, half course.

302.2 LEGAL ASPECTS OF BUSINESS, PART II

Prerequisite: Legal Aspects of Business, Part I, 301.1.

A further examination of some of the legal aspects of commerce: areas included are impeachment of contract, the requirement of writing, discharge of contracts, assignment of contracts, bailment, insurance, guarantee, and landlord and tenancy.

Lectures: three hours a week, one semester, half course.

ECONOMICS

E. J. Doak
B. Ebel

Assistant Professor, Chairman
Lecturer

ECONOMICS

R. D. Foster
I. Mirza
R. Narayanan
R. L. Ruth
S. Swianiewicz
J. J. Vorstermans

Associate Professor
Special Lecturer
Assistant Professor
Associate Professor
Professor
Professor

Recommended courses leading to a B. Comm. with a major in Economics.

First Year

English 130.0 or 201.0
Mathematics 113.0•
Economics 101.0 or 102.0
Elective
Elective

Second Year

Business Administration 204.0•
Business Administration 280.0•
Economics 202.0•
Economics 203.1• – 204.2•
English 201.0 or
300.1/310.1†

Third Year

Legal Aspects of Business
Part I, 301.1 or 301.2•
Economics Elective(s)•†
Economics 300.1• – 301.2•
Philosophy 201.0/209.0
Elective(s)

Fourth Year

Economics Elective(s)•‡
Elective(s)
Elective(s)
Elective(s)
Elective(s)

- Denotes required course.

† A student may elect to take another non-commerce course in lieu of 300-level English course upon receiving the approval of the department chairman.

‡. Students intending to pursue graduate studies are advised to take both Economics 302.0 and Economics 303.0.

Recommended courses leading to a B.A. with a Major in Economics.

First Year

Economics 101.0 or 102.0
English 130.0 or 201.0
Mathematics 113.0
Elective
Elective

Second Year

Economics 202.0•
Economics 203.1• – 204.2•
English 201.0 or
300.1/310.1†
History 111 (120) or 202
Philosophy 201.0/209.0

ECONOMICS

Third Year

Economics 300.1• – 301.2•
Economics Elective(s)•‡
Elective(s)
Elective(s)
Elective(s)

Fourth Year

Economics Elective(s)•‡
Elective(s)
Elective(s)
Elective(s)
Elective(s)

• Denotes required course.

† A student may elect to take another non-commerce course in lieu of 300-level English course upon receiving the approval of the department chairman.

‡ Students intending to pursue graduate studies are advised to take both Economics 302.0 and Economics 303.0.

NOTE: Requests for waiving a course prerequisite should be made to the Department.

Courses starred with an asterisk will not be offered in 1973-74.

101.0 ECONOMIC HISTORY OF EUROPE J. Vorstermans

The economic history of Europe from Aegean civilizations to the establishment of the Common Market. Stages of economic growth, birth of European civilization, medieval economic society, mercantilism, the first Industrial Revolution, laissez-faire and industrial capitalism, Europe since 1914.

Lectures: three hours a week, two semesters, full course.

102.0 ECONOMIC THEORY IN HISTORICAL PERSPECTIVE E.J. Doak

A course in the development of modern economic society with particular emphasis on the Canadian and U.S. economies. The presentation of microeconomic and macroeconomic theory, problems and policies is designed for students not planning to major in economics.

Lectures: three hours a week, two semesters, full course.

202.0 PRINCIPLES OF ECONOMICS

An introduction to economic analysis covering macroeconomic theory, national income determination, national accounting, business fluctuations, money and banking, international economics, economic growth, economic policy, general price theory, theory of the firm, market structures, production, cost, revenue and profit maximization, theory of distribution.

Lectures: three hours a week, two semesters, full course.

ECONOMICS

203.1 INTRODUCTORY MATHEMATICS FOR ECONOMISTS

R. Narayanan

Prerequisite: Mathematics 113.0 or Grade XII Mathematics.

An introduction to certain basic mathematical tools of interest to economists. The course is designed especially for potential economics majors.

Lectures: three hours a week, one semester, half course.

204.2 INTRODUCTORY STATISTICS FOR COMMERCE

R. Narayanan

Prerequisite: Mathematics 113.0 or Grade XII Mathematics.

An introduction to probability and statistics with emphasis on business and economic applications.

Lectures: three hours a week, one semester; laboratory one hour a week, half course.

NOTE: This is the same course as Business Administration 204.1 or 204.2.

300.1 and 300.2 INTERMEDIATE MICROECONOMIC THEORY

Prerequisite: Economics 202.0 and 203.1 — 1973-74 Academic Year.

Theory of consumer behaviour and demand; theory of production and cost, behaviour of the firm under different market structures, theory of income distribution, general equilibrium, welfare economics.

Lectures: three hours a week, one semester, half course.

301.1 and 301.2 INTERMEDIATE MACROECONOMIC THEORY

Prerequisite: Economics 202.0 and 203.1 — 1973-74 Academic Year.

National income accounting, models of aggregate demand and income determination, theory of prices, wages and employment; models of economic growth, international aspects.

Lectures: three hours a week, one semester, half course.

302.0 MATHEMATICAL ECONOMICS

Prerequisites: Mathematics 113.0, Economics 202.0 (Also, Economics 203.1 - 204.2, 1973-74 Academic Year).

An introduction to the mathematical approach to economic

ECONOMICS

analysis. Approximately half of the course will be devoted to topics from microeconomics. The other half will deal with macroeconomic models of short-run and long-run problems.

Lectures: three hours a week, two semesters, full course.

***303.0 ECONOMIC STATISTICS**

R. Narayanan

Prerequisite: Economics 202.0 and 203.1 – 204.2 – 1973-74 Academic Year.

Functions of statistical methods, collection, analysis and interpretation of statistical data, frequency distribution, measures of central tendency and dispersion, binomial, normal, and sampling distributions, testing hypotheses and estimations of parameters, index numbers, time series, regression and correlation analysis.

Lectures: three hours a week, two semesters. One hour laboratory per week, full course.

***304.1 ECONOMIC HISTORY OF NORTH AMERICA**

Prerequisites: Economics 202.0.

This course acquaints students with the leading events and processes in the economic history of North America in general, and of Canada in particular. Among the topics to be discussed are the development of agriculture, industry and trade, the economic conditions which shaped banking developments, the colonial links and incentives, industrial and financial capitalism, twentieth century developments of industry, labour organizations, investments and trade patterns.

Lectures: three hours a week, one semester, half course.

***305.0 THE DEVELOPMENT OF THE MODERN EUROPEAN ECONOMY**

Prerequisite: Economics 202.0 or permission of the instructor.

A study of the economic history of the rise of Europe from the Middle Ages to the present, with special emphasis on the rise of capitalism and the industrial revolution in Great Britain, France and Germany.

Lectures: three hours a week, two semesters, full course.

307.0 MONEY AND BANKING

J. Vorstermans

Prerequisite: Economics 202.0.

Money, its standards, supply and value, inflation and foreign exchange, Canadian Banking System and other banking systems and

ECONOMICS

public finance, international monetary problems and their solutions, developments in international trade.

Lectures: three hours a week, two semesters, full course.

310.0 DEVELOPMENT ECONOMICS

Prerequisite: Economics 202.0.

Alternative theories of growth and development, economic structures of developing and developed countries, economic and non-economic determinants of growth, development policy, role of government, monetary policy, foreign trade and foreign aid, some lessons of experience in growth and change.

Lectures: three hours a week, two semesters, full course.

***311.0 DEVELOPMENT OF ECONOMIC IDEAS**

Prerequisite: Economics 202.0.

The course traces the development of economic ideas from the Middle Ages to the present. Students will be introduced to the theories of the main economic schools, especially in the light of their contribution to contemporary economic thinking.

Lectures: three hours a week, two semesters, full course.

313.1 or (313.2) INTERNATIONAL FINANCE

Prerequisite: Economics 202.0.

An introduction to the theory, institutions, and history of international finance: balance of payments, foreign exchange rates, instruments, and markets, international banking, adjustment mechanisms, stabilization policy.

Lectures: three hours a week, one semester, half course.

314.1 or (314.2) INTERNATIONAL TRADE

Prerequisite: Economics 202.0.

An introduction to the theory of international trade: comparative advantage, modern refinements, gains from trade, empirical relevance of trade models, tariffs and protection, economic integration, trade and growth.

Lectures: three hours a week, one semester, half course.

***315.0 COMPARATIVE ECONOMIC SYSTEMS**

Prerequisite: Economics 202.0.

ECONOMICS

Analysis of the differences in decision-making and in the institutional framework of the three basic types of contemporary economies: (1) those produced by the North Atlantic civilization, (2) those built up in consequence of the imposition of Communist doctrine, (3) those marked by the underdevelopment prevailing in Asia, the Middle East and the subtropical areas of the world.

Lectures: three hours a week, two semesters, full course.

316.0 INDUSTRIAL ORGANIZATION

Prerequisite: Economics 202.0 and 300.1 or 300.2.

The concept of industry, institutional forms of economic units, market structure, policies for promotion of competition, the methods of governmental control of key industries, international aspects of industrial organization.

Lectures: three hours a week, two semesters, full course.

318.1 or (318.2) INTRODUCTION TO PUBLIC FINANCE

R. D. Foster

Prerequisite: Economics 202.0.

An introduction to the theory of public finance; emphasis is placed on the classical approach of governmental spending and taxing powers affecting the distribution of income, the allocation of resources and the stabilization of national income.

Lectures: three hours a week, one semester, half course.

319.0 LABOUR ECONOMICS

Prerequisite: Economics 202.0 or permission of the instructor.

Factors affecting wages, working conditions and employment in industrial societies, the role of market forces and collective bargaining in wage determination, the development of labour unions and collective bargaining in Canada, the United States and Europe, the effect of labour unions on the economy, our changing labour force and manpower policies for the future.

Lectures: three hours a week, two semesters, full course.

320.1 or (320.2) THE CANADIAN FINANCIAL SYSTEM

E. J. Doak

Prerequisite: Economics 202.

General nature of the financial system, historical trends in financial institutions and ideas, elements of financial theory, private financial institutions, government financial institutions.

Lectures: three hours a week, one semester, half course.

ECONOMICS

321.1 or (321.2) THE CANADIAN ECONOMY SEMINAR

E. J. Doak

Prerequisite: Economics 202.0.

A course on current economic issues in Canada: population and labour force, unemployment, inflation, international trade, balance of payments and foreign exchange rates, regional economic disparities, poverty, the business cycle, monetary and fiscal policy, government lending institutions, income security programmes, pollution, housing and urban problems.

Lectures: three hours a week, one semester, half course.

323.0 SOVIET-TYPE ECONOMIES

Prerequisite: Economics 202.0.

This course will cover such topics as the following: development of Soviet Economics — historical background, institutional framework, the rate of growth, the problems of saving, investment and central planning; the origin of the Soviet Bloc — Communist international economics, the problems of economic integration in Eastern and Western Europe, East-West trade, economic reforms in Eastern Europe; Soviet-type economies in Asia.

Philosophy 209 Marxist Philosophy is an appropriate supporting humanities elective for this course.

Lectures: three hours a week, two semesters, full course.

324.1 and 324.2 ECONOMICS OF TRANSPORTATION I & II

Prerequisite: Economics 202.0, 203.1 or 203.2, and 204.1 or 204.2.

An introduction to the general principles of transportation economics with emphasis on the interface between business transportation and government; the application of economic principles to the analysis of transportation problems and the application of management decisions and physical distribution and transportation systems.

Lectures: three hours a week, two semesters, two half courses.

330.0 REGIONAL ECONOMICS

B. Ebel

Prerequisite: Economics 202.0.

An introduction to regional economics. Topics covered will include location theory, the economics of natural resources and urban areas, and problems associated with the development and application of public policies in a regional economy. The course attempts to impart to the student some knowledge of the complexity and breadth of the problems which a regional economy faces.

Lectures: three hours a week, two semesters, full course.

ECONOMICS

*331.2 ECONOMIC DEVELOPMENT OF LATIN AMERICA

Prerequisite: Economics 202.0.

An introduction to the study of social-economic profile of the region of Latin America from Colonial times to the Urban Revolution. Topics discussed include geography, agriculture, industrialization, international trade, intra-regional relations, and economic planning.

Lectures: three hours a week, one semester, half course.

419.1 or (419.2) ISSUES IN PUBLIC FINANCE

R. D. Foster

Prerequisite: Economics 318.1 or 318.2. Introduction to Public Finance or Economics 300 and Economics 301.

Selected topics relating to the economic effects of fiscal policy. The process of governmental decision-making is investigated through the use of economic analysis. This course is also an introduction to modern welfare economics.

Lectures: three hours a week, one semester, half course.

440.1 ADVANCED MICROECONOMICS

Prerequisite: Economics 300.1 or 300.2.

Treatment of the major topics in microeconomic theory at an advanced level. Topics covered will include the theory of the firm, consumer behaviour and distribution theory. Other topics which could be covered at the discretion of the instructor may include: welfare economics, theories of capital and interest, game theory and decision-making models.

Lectures: three hours a week, one semester, half course.

441.2 ADVANCED MACROECONOMIC THEORY

Prerequisite: Economics 301.1 or 301.2.

Treatment of some major topics in macroeconomic theory at an advanced level. Topics may include welfare economics, static macroeconomic models, demand for and supply of money, theories of interest, inflation, economic growth and business cycles.

Lectures: three hours a week, one semester, half course.

*444.2 APPLICATIONS OF CONTEMPORARY ECONOMIC HISTORICAL ANALYSIS

Prerequisites: Economics 300.1 or 300.2 and 301.1 or 301.2 or permission.

ECONOMICS — EDUCATION

Emphasis is given to those issues which relate to the growth of the economy of North America. Economic theory is applied in the investigation of these historical problems. The objective of this course is to introduce the student to the methodology and problems of modern economic history, and to develop facility in applying economic theory to the resolution of these problems.

Lectures: three hours a week, one semester, half course.

447.0 ADVANCED STUDY IN A SPECIAL SUBJECT

Prerequisite: Economics 202.0 and permission.

This course is intended to provide members of the department the opportunity of presenting to students the results of research studies the professor has quite recently undertaken.

Lectures: three hours a week, two semesters, full course.

EDUCATION

D. Weeren
Bernard E. Davis
M. MacMillan
F. Phillips
L. Scobbie
F. Dockrill
S. Robinson
B. Hanrahan

Associate Professor, Dean
Assistant Professor
Assistant Professor
Associate Professor
Associate Professor
Associate Professor
Assistant Professor
Assistant Professor

Courses starred with an asterisk will not be offered in 1973-74.

COURSES FOR THE BACHELOR OF EDUCATION DEGREE

501.0 PHILOSOPHY OF EDUCATION

B. Davis B. Hanrahan

A study of fundamental questions about the nature and aims of education.

Lectures and Seminars: three hours a week, two semesters.

502.0 PSYCHOLOGY OF EDUCATION

F. Dockrill L. Scobbie

A study of the nature, equipment, growth, development, evaluation,

EDUCATION

and adjustment of the learner. Psychology 201.0 or equivalent is the normal prerequisite or concurrent requirement but may be waived for students who have completed readings prescribed by the School of Education.

Lectures and Seminars: three hours a week, two semesters.

503.0 GENERAL METHODS OF TEACHING

The application of basic principles derived from the philosophy, psychology and history of Education to classroom teaching, and an examination of teaching strategies in the light of classroom experience and of research on teaching.

Lectures and Seminars: three hours a week, two semesters.

504.0 HISTORY OF EDUCATION F. Phillips D. Weeren

A study of facets of our educational heritage aimed at assisting in the formation of sound educational principles and practices.

Lectures and Seminars: three hours a week, two semesters.

505.0 PRACTICE TEACHING

Practice teaching sessions will consist of observation and practice teaching in the public school system. The extent and dates of these sessions will be arranged by the Education staff.

506.0 CONTENTS AND METHODS OF SPECIFIC HIGH SCHOOL SUBJECTS

The seminars comprising this course discuss the concepts and competencies which the junior and senior high school teacher of a given subject should be concerned with developing in his students, and the methods most conducive to that development.

Lectures and Seminars: three hours a week, two semesters.

COURSES FOR THE MASTER OF ARTS DEGREE

EDUCATION 610.0 RESEARCH TECHNIQUES AND DESIGN OF EXPERIMENTS

An introduction to methodology, interpretation and use of educational research. Subjects covered will include general methods of research, hypotheses and hypothesis testing, design of experiments, surveys and case studies, questionnaires, historical research,

EDUCATION

elementary statistics, evaluation of theses in progress. Credit for this course will be given on completion of a thesis.

Lectures and Seminars: one and one-half hours a week, two semesters.

EDUCATION 620.1 or (620.2) CURRICULUM STUDIES

This course examines the basic assumptions underlying the design of curricula generally and for individual subjects. It is normally taken in conjunction with (632.1). Conceptualisations of Psychological Development.

Lectures and Seminars: three hours a week, one semester.

EDUCATION 621.1 or (621.2) PROBLEMS IN CURRICULUM

Prerequisite: Education 620.1 or (620.2). Curriculum studies or equivalent or the permission of the professor.

This course will deal with such questions as the suitability of tests for grade levels, the applicability of curriculum material to grade levels and the aims of the community.

PSYCHOLOGY 630.1 or (630.2) PRINCIPLES OF LEARNING

F. Dockrill

Prerequisites: Psychology 301.0, Psychology of Learning, Education 502.0, Educational Psychology, or permission of the professor.

A seminar course which discusses the basic tenets of modern learning theory as developed through the findings of experimental psychology. The following topics are dealt with: development of learning theory, conditioning, reinforcement, stimulus control of behaviour, punishment and memory.

Lectures and Seminars: three hours a week, one semester.

PSYCHOLOGY 631.1 or (631.2) SPECIAL ASPECTS OF LEARNING

F. Dockrill

Prerequisite: Psychology 630.1, or (630.2) Principles of Learning or equivalent, or permission of the professor.

A seminar course discussing topics dealt with by current learning studies which have particular relevance to school learning. The following are examples of areas dealt with: concept learning, creativity, intelligence, perceptual learning and transfer of training.

Lectures and Seminars: three hours a week, one semester.

EDUCATION

PSYCHOLOGY 632.1 (or 632.2) CONCEPTUALIZATIONS OF PSYCHOLOGICAL DEVELOPMENT L. Scobbie

Prerequisite: minimally, Education 502.0, Psychology of Education or equivalent, or permission of the professor.

A lecture-seminar course dealing with the main theoretical orientations in the fields of intellectual, emotional, social and moral development. The application of these conceptualizations in school and community situations will be examined; particular attention will be paid to Piaget's ideas on intellectual development and their relevance to curriculum studies.

This course is designed to be taken conjointly with Ed. 620.1, Curriculum Studies and Ed. 621.1, Problems in Curriculum.

Lectures and Seminars: three hours a week, one semester.

PSYCHOLOGY 633.1 or (633.2) PSYCHOPATHOLOGY OF DEVELOPMENT AND EDUCATION L. Scobbie

Prerequisite: Education 502.0, Psychology of Education, desirably Psychology 630.1 and 631.2, Principles of Learning and Special Aspects of Learning, and Psychology 632.1, Conceptualizations of Psychological Development, or their equivalent, or permission of the professor.

A lecture-seminar course studying the causation of anomalies in personal organization, character and learning, and examining their effects on behaviour in school and other social situations.

Lectures and Seminars: three hours a week, one semester.

*PHILOSOPHY 640.1 or (640.2) PHILOSOPHY OF EDUCATION; PHILOSOPHICAL CRITIQUE OF MOTIVATION (I) B. Hanrahan

A lecture and seminar course on the cultural significance of the metaphysics of motivation. As a study of social exigencies in the learning situation, the course involves the reading and discussion of such philosophical sources as Plato, Aristotle, Buber, Fromm, Johann, Marcel, on the nature of love, and more precisely, a consideration of the nature of the affective relation between student and teacher.

Lectures and Seminars: three hours a week, one semester.

*PHILOSOPHY 641.1 or (641.2) PHILOSOPHY OF EDUCATION; PHILOSOPHICAL CRITIQUE MOTIVATION (II) B. Hanrahan

The course is a problematic approach to the affective features of

EDUCATION

concrete learning situations. Some of the works used are *Education and Ecstasy*, *Freedom to Learn*, and *Existential Encounters for Teachers*.

Lectures and Seminars: three hours a week, one semester.

***PHILOSOPHY 642.1 or (642.2) PROBLEMS OF
EDUCATIONAL PHILOSOPHY** B. Davis

A graduate level introduction to philosophical thought about education.

Lectures and Seminars: three hours a week, one semester.

***PHILOSOPHY 643.1 or (643.2) PHILOSOPHY OF
EDUCATIONAL PROBLEMS** B. Davis

A philosophic investigation of problematic issues in contemporary education.

Lectures and Seminars: three hours a week, one semester.

**PHILOSOPHY 644.1 or (644.2) DEVELOPMENTS IN THE
SCIENCE AND PHILOSOPHY OF
LANGUAGE** B. Davis

An introduction to transformational grammar, logic, and logical structures in English, semantics, and some of the results of descriptive linguistics. Developments in philosophy relevant to the scientific investigation of language are stressed.

Lectures and Seminars: three hours a week, one semester.

**PHILOSOPHY 645.1 or (645.2) PROBLEMS IN THE
PHILOSOPHY OF LANGUAGE** B. Davis

Investigation of selected issues in the philosophic study of language.

Lectures and Seminars: three hours a week, one semester.

**PHILOSOPHY 646.1 or (646.2) APPLICATIONS OF THE
SCIENCE AND PHILOSOPHY OF LANGUAGE
TO THE TEACHING OF ENGLISH** B. Davis

Prerequisite: Philosophy 644.1 or (644.2) Developments in the Science and Philosophy of Language, or equivalent, or permission of the professor.

A consideration of the results of scientific and philosophical investigations of language and their application toward improvement of the English curriculum.

Lectures and Seminars: three hours a week, one semester.

EDUCATION

PHILOSOPHY 647.1 (647.2) THEORY OF KNOWLEDGE (I)

B. Hanrahan

A lecture and seminar course based on Lonergan's *Insight* and directed towards developing an epistemology inherent in the learning process. The course sets out from the point of view of a personal self-appropriation of one's own dynamic cognitive structure.

Sources: Lonergan, *Insight*; Buford, *Toward a Philosophy of Education*; Vandenberg, *Being and Education*; *Essays in Existential Phenomenology*.

Lectures and Seminars: three hours a week, one semester.

PHILOSOPHY 648.1 or (648.2) THEORY OF KNOWLEDGE (II)

B. Hanrahan

The course considers the question, "What kind of student activity do I look for and recognize as the result of teaching?" In addition to personal cases discussed, some references involving such a question will be Plato, *Meno*; Holt, *How Children Fail*; Hutchins, *The Learning Society*; Postman and Weingartner, *Teaching as a Subversive Activity*.

Lectures and Seminars: three hours a week, one semester.

EDUCATION 650.1 or (650.2) INTRODUCTION TO COMPARATIVE EDUCATION

F. Phillips D. Weeren

This course examines the principal characteristics of education in a number of countries and areas outside Nova Scotia, the methodology and bibliographical tools of comparative education, and the utility of comparative education for the practising teacher and administrator.

Lectures and Seminars: three hours a week, one semester.

*EDUCATION 651.1 or (651.2) PROBLEMS IN COMPARATIVE EDUCATION

F. Phillips D. Weeren

Prerequisite: Education 650.1 or (650.2) Introduction to Comparative Education, or equivalent, or permission of the professor.

The course will pursue selected educational problems with the aid of the discipline of comparative education.

Lectures and Seminars: three hours a week, one semester.

*EDUCATION 652.1 or (652.2) ADVANCED COMPARATIVE EDUCATION

F. Phillips D. Weeren

Prerequisite: Education 650.1 or (650.2) Introduction to Comparative Education, or equivalent, or permission of the professor.

EDUCATION

An intensive study of the history, methodology and current status of comparative educations.

Lectures and Seminars: three hours a week, one semester.

EDUCATION 653.1 or (653.2) COMPARATIVE

EDUCATION: ANGLO-AMERICAN

F. Phillips

Prerequisite: Education 650.1 or (650.2) Introduction to Comparative Education, or equivalent, or permission of the professor.

A comparative study of the education systems in selected English-speaking countries.

Lectures and Seminars: three hours a week, one semester.

***EDUCATION 654.1 or (654.2) COMPARATIVE**

EDUCATION: CONTINENTAL

D. Weeren

Prerequisite: Education 650.1 or (650.2) Introduction to Comparative Education, or equivalent, or permission of the professor.

A comparative study of the education systems in selected European countries, including France, and selected societies with related educational roots, including French-Canada.

Lectures and Seminars: three hours a week, one semester.

***EDUCATION 660.1 or (660.2) INTRODUCTION TO EDUCATIONAL ADMINISTRATION**

This course will deal with the general theory of administration, covering such topics as decision making, planning, role of authority, attempting to develop in students techniques and procedures of analyzing and meeting administrative problems.

***EDUCATION 661.1 or (661.2) PROBLEMS IN ADMINISTRATION**

This course will consist of the practical application of the principles examined in 660.1 or (660.2), particular consideration being given to administrative problems relating to personnel, pupils, buildings, instructional materials and financing.

Lectures and Seminars: three hours a week, one semester.

EDUCATION 662.1 or (662.2) INTRODUCTION TO SUPERVISION

This course will examine the part played by supervisors in building up an efficient administrative organization, together with such topics as leadership, changing concepts of supervision, teacher expectations of supervisors, and problems relating to teachers.

Lectures and Seminars: three hours a week, one semester.

EDUCATION — ENGINEERING

EDUCATION 633.1 or (633.2) PROBLEMS IN SUPERVISION

This course will examine and analyze problems arising in the field of supervision, including such topics as visits to classrooms, analysis of pupils' needs, individual and group conferences and development of instructional materials.

Lectures and Seminars: three hours a week, one semester.

EDUCATION 690.1 or (690.2) INDIVIDUAL STUDY

Prerequisite: registration is only by permission of the professor and the Dean of Education.

The course provides an opportunity for a student directed by a professor to undertake special study in a disciplinary area or topic relevant to his programme, especially in the event a course in the subject is not offered during the current session at Saint Mary's University or at a sister institution in the metropolitan area. This individual study course may be taken more than once, if the syllabus is different.

Engineering

Warner, D. B.	Associate Professor, Acting Dean of Engineering
Ryan, J. L.	Professor, Dean Emeritus
Grantham, D. A.	Assistant Professor
Mulrooney, D. L.	Assistant Professor
Reddy, V. R. K.	Assistant Professor
Bowes, H. G.	Instructor
Ryan, P. C.	Instructor
Roy, D. A.	Adjunct Professor

103.2 SURVEYING FIELD COURSE

Prerequisite: Engineering 113.1

Practical surveying problems, the orderly compilation and recording of survey data, transit and tape surveys, stadia surveys, curve layouts, differential levelling, profile plots and contour mapping, application of surveying in construction projects.

This is a full time field course which takes place at the end of the second semester and runs for a three week period.

106.1 ENGINEERING DESIGN GRAPHICS

Engineering drawing and sketching with emphasis on sketching,

ENGINEERING

analysis and synthesis of problems by using graphical methods as part of the design process, reading drawings, simple design projects.

Text: James H. Earle, *Engineering Design Graphics* (Addison Wesley); Earle, Cleland, Stark, Mason, Bardell, Vogel and Guerard, *Engineering Graphics and Design Problems* (Addison Wesley).

Lectures: two hours a week, one semester.

Laboratory: three hours a week, one semester.

107.2 DESIGN AND DESCRIPTIVE GEOMETRY

Prerequisite: Engineering 106.1

Basic descriptive geometry, plotting graphs and nomographs, graphical analysis and curve fitting, team design projects with emphasis on creativity.

Text: *Engineering Design Graphics* as for Engineering 106.1; Earle, Cleland, Stark, Mason, Bardell, Vogel and Guerard, *Design and Descriptive Geometry Problems* (Addison Wesley).

Lectures: two hours a week, one semester.

Laboratory: three hours a week, one semester.

108.1 PRINCIPLES OF ENGINEERING

D. B. Warner

Prerequisite: None.

A course for freshmen which discusses the philosophy of design and introduces concepts of energy, economics and human factors and how these concepts are used by engineers in the solution of problems. Solution techniques indicated include an introduction to computer programming.

Text: Gibson, *Introduction to Engineering Design* (Holt, Rinehard & Winston).

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

113.1 SURVEYING

Prerequisite: none.

A course covering the theory and practices involved in surveying for engineering projects. The topics included are: surveying instruments, measurement of distance, difference in elevation, direction angles, area and earthwork calculations, circular curves, photogrammetry and mapping.

Text: Smirnoff, *Measurements for Engineering and Other Surveys* (Prentice-Hall).

ENGINEERING

120.0 TECHNOLOGY AND SOCIETY D. L. Mulrooney

Prerequisite: none. This course is designed for the non-engineering student.

The complaint against technology, history of technological change, response to technological change, predictions of disaster, the question of adequate precautions, the interrelations of technology with science, industry, and government.

Text: N. deNevers, ed., *Technology and Society* (Addison-Wesley).

Lectures: three hours a week, two semesters.

203.1 (203.2) ENGINEERING MECHANICS (STATICS) D. L. Mulrooney

Prerequisites: Engineering 106.1-107.2; Mathematics 210.1-211.2 concurrently.

Fundamental concepts and principles of mechanics, statics of particles, equivalent force systems, equilibrium of rigid bodies, analysis of structures, friction, distributed forces, centroids, center of gravity, moments of inertia.

Text: Beer and Johnson, *Vector Mechanics for Engineers* (McGraw-Hill).

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

204.1 (204.2) COMPUTER SCIENCE P. C. Ryan

Prerequisites: Mathematics 110.1-111.2.

An introduction to computer methods and the analysis of engineering problems using the computer, including introduction, history, philosophy, number systems, computer logic, logic circuits, physical computer components, machine language and Fortran IV language.

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

212.2 ENGINEERING MEASUREMENTS

Prerequisite: Mathematics 210.1 - 211.2 (concurrently).

This course presents the theory of measurements and applications of probability and statistics to measurements. Analysis of experimental data is included. The generalized measurement system is discussed and examples are presented. Lab work emphasizes ingenious use of measurement systems involving creativity, synthesis and analysis.

Text: Holman, *Experimental Methods for Engineers* (McGraw-Hill); Crandall and Seabloom, *Engineering Fundamentals in*

ENGINEERING

Measurements, Probability, Statistics and Dimensions, (McGraw-Hill).

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

220.0 POLLUTION CONTROL

Prerequisite: second year standing. This course is open to students of all faculties.

An introduction to the fundamental concepts of pollution control. Problems of water, air, soil and noise pollution are presented from various points of view. Pollutant characteristics, their effects on the environment and on public health, the technology of waste treatment and pollution control, legal controls, resource management, sociological considerations. Pollution control experience in Nova Scotia will be used to illustrate course material where applicable.

Lectures: two hours a week; seminar, one hour: two semesters.

302.0 ENGINEERING MECHANICS (DYNAMICS)

Prerequisites: Mathematics 210.1 and 211.2; Mathematics 311.0 (concurrently) Engineering 203.1 (203.2).

Equations of motion in rectangular and polar coordinates, relative motion, rectilinear, curvilinear and rotational motion of particles and rigid bodies, oscillating motion, moments of inertia, work, energy and power, impulse and momentum.

Text: Beer & Johnson, *Vector Mechanics for Engineers* (McGraw-Hill).

Lectures: three hours a week, two semesters.

303.1 FLUID MECHANICS

Prerequisites: Mathematics 210.1 and 211.2

Fluid properties, fluid statics, conservation of mass and energy, Euler's equation of motion and Bernoulli's equation, linear momentum equation and applications, dimensional analysis and similitude, viscous effects on fluid flow, fluid measurement.

Text: Victor L. Streeter, *Fluid Mechanics, 4th Edition* (McGraw-Hill).

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

ENGINEERING

304.2 MECHANICS OF DEFORMABLE BODIES

D. L. Mulrooney

Prerequisite: Engineering 203.1 (203.2), Mathematics 210.1 - 211.2.

Stress and strain — concepts and definitions, fundamentals of elasticity, torsional loading, flexural loading, statically indeterminate structures.

Text: Higdon, Olsen, Stiles and Weese, *Mechanics of Materials, second edition* (John Wiley).

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

306.2 ENGINEERING THERMODYNAMICS D. B. Warner

Prerequisites: Physics 221.0, Mathematics 210.1-211.2.

Energy and the first law, properties and state, energy analysis of thermodynamic systems, entropy and the second law, consequences of second law, thermodynamic systems.

Text: Reynolds, *Thermodynamics*, second edition (McGraw-Hill).

Laboratory: three hours a week, one semester.

308.0 SYSTEM DYNAMICS

D. A. Roy

Prerequisites: Physics 221.0, Mathematics 311.0 (concurrently).

The analysis of linear systems is dealt with in some detail and considerable emphasis is placed upon their practical applications. Topics include fundamental laws of electrical engineering circuit parameters, network theorems, impedance, solution of DC and AC network problems, magnetic circuits, transformers, introduction to electromechanical energy conversion, semiconductor electronics.

Text: Vincent Del Toro, *Electrical Engineering Fundamentals* (Prentice-Hall, 1972).

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

314.1 ENGINEERING MATERIALS

D. L. Mulrooney

Prerequisites: Chemistry 203.0, Physics 221.0, Mathematics 210.1-211.2.

Electrons and bonding, atomic packing, crystal structure, imperfections in crystals, non-crystalline solids, the shapes and distributions of phases in solids, equilibrium diagrams, non-equilibrium diagrams, non-equilibrium phase transformations, macroscopic properties of materials.

ENGINEERING — ENGLISH

Text: Moffatt, Pearsall and Wulff, *The Structure and Properties of Materials Volume I* (John Wiley); J. E. Gordon, *The New Science of Strong Materials* (Penguin Books).

Lectures: three hours a week, one semester.

ENGLISH

David H. Parkin	Assistant Professor, Chairman
Cyril J. Byrne	Assistant Professor
Roger H. Crowther	Associate Professor
Lilian Falk	Assistant Professor
Thomas Edward Flynn	Associate Professor
John Geoffrey Harrison	Professor
Denis P. Healy	Assistant Professor
Michael Larsen	Lecturer
Roger A. MacDonald	Assistant Professor
Kenneth MacKinnon	Associate Professor
Richard Perkyns	Associate Professor
David Pigot	Assistant Professor
John Power	Associate Professor
Andrew T. Seaman	Assistant Professor
John K. Snyder	Assistant Professor
Christopher J. Terry	Assistant Professor
Kathleen R. Tudor	Assistant Professor
Terrance A. Whalen	Assistant Professor

Requirements for Majors

1. To obtain a major in English a student is required to have *five* university credits above the 130.0 level. English 130.0 does not count towards the major.
2. A grade of at least *C* in English 201.0, or special recommendation from English 130.0, is the normal prerequisite for all English courses numbered 350.0 and above.
3. Only one course at the level 250.0 through 308.0 may be included in the minimum requirement for a major.
4. In choosing the four electives above English 201.0, majors must do *two* of the following three "core" courses:

ENGLISH

1. English 352.0 (Chaucer)
 2. English 354.0 (Shakespeare)
 3. English 356.0 (Seventeenth Century Poetry)
5. All majors are requested to arrange their programme in consultation with a member of the department, and to make use of the advance reading lists for courses above the 300 level. Reading lists are available from the department secretary.

Honours Students

Prospective Honours students should note the general calendar regulations on Honours Degrees and obtain further details from the department chairman.

Courses starred with an asterisk will not be offered in 1973-74.

110.0

Students eligible for advance standing in English will be given this number for a course credit.

130.0 CRITICAL READING AND WRITING

Staff

Prerequisite: admission to this course is based on the result of the Department's introductory English allocation test.

This course will aim to refine standards of comprehension and expression, and encourage independent evaluation of a wide range of written material.

Lectures: three hours a week, two semesters.

201.0 THE EVALUATION OF LITERATURE

Staff

Prerequisite: admission to this course is based on the result of the Department's introductory English allocation test or upon successful completion of English 130.0.

An introduction to the methods of practical criticism. These methods will be applied to texts from various periods so that the student should acquire not only some experience of independent judgement but also a basic sense of the development of literature.

Lectures: three hours a week, two semesters.

250.0 LITERATURE SEMINAR FOR MAJORS

T. A. Whalen

Prerequisite: a B average in English 130.0 or equivalent.

ENGLISH

This course requires that (a) the student intend to major in English and (b) that the student has completed or is concurrently enrolled in English 201.0

This course is primarily designed as a practical criticism seminar. Although novels and plays will be referred to, the major emphasis will be on the study of poetry. Attention will be given to the development of various poetic traditions.

Texts: *The Norton Anthology of English Literature* (Major Authors Edition). M. Thrall, *Handbook to Literature*.

Lectures: three hours a week, two semesters.

*300.0 COMPARATIVE LITERATURE: EUROPE

Prerequisite: English 201.0 or equivalent.

A seminar course examining some of the characteristics of West European Literature and a consideration of whether or not it is worth reading. Details of texts will be posted.

Lectures: three hours a week, two semesters.

301.0 THE MODERN NOVELLA

T. Flynn

Prerequisite: English 201.0 or equivalent.

A course designed to introduce the student to a wide range of short novels which illustrate both the rich diversity and the fundamental unity of concern which characterise the modern imagination and cultural consciousness.

Texts: Hamalian and Volpe, *Ten Modern Short Novels*. Paulson, R., *The Modern Novelette*.

Lectures: three hours a week, two semesters.

*302.0 CONTEMPORARY CANADIAN LITERATURE

Prerequisite: English 201.0 or equivalent.

Though the whole purpose of this course is to create an exploratory and experimental atmosphere, this purpose would also include an effort to study works which illustrate both regional differences in Canada today and the wide variety of forms in which our literature is now being expressed. Writers studied might include: Callaghan, MacLennan, Ross, Ringuet, Buckler, Garner, Richler, Moore, M. Atwood, Margaret Laurence, Nowlan, Purdy, Layton, and others.

Lectures: three hours a week, two semesters.

***303.0 SHAKESPEARE**

Prerequisite: English 201.0 or equivalent.

Provisionally, intensive study will be required of the following texts: *Love's Labours Lost*; *The Merchant of Venice*; *Twelfth Night*; *As You Like It*; *Hamlet*; *Othello*; *Anthony and Cleopatra*; *The Winter's Tale*. Reference will be made to other Shakespearian plays, and to such literary background material of the Elizabethan period as will enrich the study of the major texts.

Lectures: three hours a week, two semesters.

304.0 THE DEVELOPMENT OF DRAMA IN THE THEATRE**R. Perkyns**

Prerequisite: English 201.0 or equivalent.

This course will trace in outline the history of drama in relation to the living theatre from its inception to contemporary styles, with particular reference to the Greek and Roman classical theatre; the religious origins and secularization of English drama; the Elizabethan Playhouse; the development of the private theatre and proscenium stage; the clash of Puritanism with the Restoration and 18th century theatre; pioneers of the new stage craft in the later 19th and 20th centuries.

Lectures: three hours a week, two semesters.

305.0 INTRODUCTION TO LINGUISTICS**L. Falk**

Prerequisite: English 201.0 or equivalent.

The course surveys past and present approaches to linguistic science with reference to phonetics, phonemics, morphology, syntax, semantics, and classification of languages.

Lectures: three hours a week, two semesters.

306.0 RELIGION AND DRAMA (See Religious Studies 305.0)

Prerequisite: English 201.0 or equivalent.

***307.0 RELIGION IN 20th CENTURY POETRY**

(See Religious Studies 336.0)

Prerequisite: English 201.0 or equivalent.

308.0 LITERATURE IN ATLANTIC CANADA K. MacKinnon

Prerequisite: English 201.0 or equivalent.

This course will examine the literature and literary background of Atlantic Canada. Emphasis in the first semester will be on the

ENGLISH

nineteenth and early twentieth centuries; in the second semester on contemporary writing. Writers to be examined will include C. G. D. Roberts, B. Carman, R. Norwood, E. J. Pratt, K. Leslie, C. Bruce, F. Cogswell, A. Nowlan, M. Acorn, T. McCulloch, T. C. Haliburton, G. M. Grant, A. MacPhail, L. M. Montgomery, M. MacPhail, T. Randall, H. MacLennan, E. Buckler, H. Horwood, S. Gray, R. Smith, and A. R. Scammell.

Lectures: two lectures, one seminar per week.

*350.0 HISTORY OF THE ENGLISH LANGUAGE

Prerequisite: English 201.0 or equivalent.

A course designed to acquaint the student with the nature of language and its growth. The student will be instructed in the basic techniques of linguistic analysis.

Lectures: three hours a week, two semesters.

*351.0 MIDDLE ENGLISH 1100 to 1400

Prerequisite: English 201.0 or equivalent.

The groundwork of medieval literary conventions, both English and European, through a study of texts such as *Sir Gawain and The Green Knight*, Malory's *Morte d'Arthur*. The social, political, and religious temper of the period through a study of Langland's *Piers Plowman*, the miracle and morality plays, and the religious and secular lyrics of the period. Students should consult with the professor before registering about a possible co-requisite.

Lectures: three hours a week, two semesters.

352.0 CHAUCER AND THE 14th CENTURY

D. Pigot

Prerequisite: English 201.0 or equivalent.

This course will deal primarily with the poetry of Chaucer which will be studied in the original Middle English. Students will be required to do outside reading on literary influences and on life in 14th-Century England.

Texts: F. N. Robinson, ed., *The Works of Chaucer, The Age of Chaucer*. Pelican Guide to English Lit., Vol. 1.

Lectures: three hours a week; two semesters.

*353.0 TUDOR POETRY AND PROSE

Prerequisite: English 201.0 or equivalent.

A study of the poetry and prose mainly of the Tudor era. Major

ENGLISH

emphasis will be given to the works of Wyatt, Surrey, Sidney, and Spenser.

Lectures: three hours a week, two semesters.

354.0 SHAKESPEARE: POEMS AND PLAYS Section A: T. A. Whalen Section B: T.B.A.

Prerequisite: English 201.0 or equivalent.

An extensive study of Shakespeare's comedies, histories, romances, tragedies and sonnets. This course also involves attention to the background of Elizabethan society and theatre.

Lectures: three hours a week, two semesters.

355.0 ELIZABETHAN AND JACOBEAN DRAMA R. MacDonald

Prerequisite: English 201.0 or equivalent.

This course excludes attention to Shakespeare and concentrates mainly on the dramatic works of Marlowe, Jonson, Beaumont, Fletcher, and Webster.

Lectures: three hours a week, two semesters.

356.0 17th CENTURY POETRY AND PROSE: 1600-1660 C. Terry

Prerequisite: English 201.0 or equivalent.

An enquiry into the change of civilization in England during the seventeenth century, with comparative reference to some European sources. The inquiry will include the questions: Is the poetry and prose of this period worth reading? What is worth reading in it? Why (or why not) is it worth reading?

Lectures: three hours per week, two semesters.

400.0 RESTORATION AND EIGHTEENTH-CENTURY POETRY AND PROSE 1666-1780 M. Larsen

Prerequisite: English 201.0 or equivalent.

A study of the central works in the Neo-Classic era. Major attention is given to Dryden, Swift, Pope, and Johnson.

Lectures: three hours a week, two semesters.

401.0 THE NOVEL: DEFOE TO AUSTEN K. Tudor

Prerequisite: English 201.0 or equivalent.

The study of major novelists of the Eighteenth Century. Special

ENGLISH

emphasis will be placed on Defoe, Richardson, Fielding, Goldsmith and Austen. Sterne, Burney and the Gothic novelists may also be studied.

Lectures: three hours a week, two semesters.

402.0 THE NINETEENTH CENTURY NOVEL

R. Crowther

Prerequisite: English 201.0 or equivalent.

Is it true, and does it matter to us now, that the nineteenth century novelists 'held up the mirror to life' and created a fresh form of expression which employed the strength and scope of English dramatic poetry? The course will pursue these questions by examining in detail two novels by each of the following: J. Austen, G. Eliot, C. Bronte, C. Dickens, T. Hardy, and H. James.

Lectures: three hours a week, two semesters.

403.0 ROMANTIC POETRY

A. Seaman

Prerequisite: English 201.0 or equivalent.

A study of the origins and development of the English Romantic movement. Major emphasis will be placed on the works of Blake, Wordsworth, Coleridge, Shelley, Keats and Byron.

Lectures: three hours a week, two semesters.

404.0 VICTORIAN POETRY AND PROSE

J. Harrison

Prerequisite: English 201.0 or equivalent.

The course is designed to acquaint students with the attitudes and ideas of the writers in the Victorian period. Arnold, Browning, and Tennyson are studied in depth.

Lectures: three hours a week, two semesters.

405.0 NINETEENTH-CENTURY NORTH AMERICAN LITERATURE

J. K. Snyder

Prerequisite: English 201.0 or equivalent.

Major writers of the 19th century. Critical readings of works by Cooper, Hawthorne, Melville, Emerson, Thoreau, Whitman, Emily Dickinson, James.

Lectures: three hours a week, two semesters.

*406.0 TWENTIETH-CENTURY NORTH AMERICAN LITERATURE

Prerequisite: English 201.0 or equivalent.

Representative figures in the modernist tradition. A consideration of the work and place of such writers as Dreiser, Hemingway, Faulkner, Fitzgerald, Mailer, Pynchon; in poetry that of T. S. Eliot, Robert Frost, Hart Crane, and others.

Lectures: three hours a week, two semesters.

407.0 MODERN ENGLISH POETRY

D. Parkin

Prerequisite: English 201.0 or equivalent.

A study of the major poets of the modern era. Authors will include Hardy, Hopkins, Eliot, Pound, Yeats, and Auden. The course will also include reference to English poetry of the fifties and sixties.

Lectures: three hours a week, two semesters.

***408.0 TWENTIETH CENTURY DRAMA**

Prerequisite: English 201.0 or equivalent.

A study of the major dramatists from the late 19th century to contemporary movements. Dramatists studied include Ibsen, Chekhov, Strindberg, Shaw, Synge, O'Casey, O'Neill, Pirandello, Brecht, Wilder, Williams, Miller, Beckett, Ionesco, Pinter, Osborne, and Albee.

Lectures: three hours a week, two semesters.

***409.0 LITERATURE, THOUGHT, AND ART — 1880-1930**

Prerequisite: English 201.0 or equivalent.

This is not a course in the history of ideas. It is an exploration of the relationship between the cultural background of the period and its effect on imaginative works.

Lectures: three hours a week, two semesters.

410.0 THE MODERN NOVEL

T. Flynn

Prerequisite: English 201.0 or equivalent, and one course at the 300 level or above.

An examination of the early twentieth-century novel in terms of a close critical analysis of representative works and in the light of certain cultural, philosophic and socio-political tendencies which have played a decisive part in determining the response of the modern imagination to emotional, moral and social experience.

Texts: James's *The Wings of the Dove*, Conrad's *Nostromo*, Lawrence's *Women in Love*, Ford's *The Good Soldier*, Joyce's *A Portrait of the Artist as a Young Man* and *Ulysses* (Selections), Forster's *A Passage to India*, Virginia Woolf's *To the Lighthouse*, Faulkner's *Light in August*, Golding's *The Spire*.

Lecture/Seminar: three hours a week, two semesters.

ENGLISH

***411.0 THEORY AND PRACTICE OF CRITICISM**

Prerequisite: English 201.0 or equivalent and two 300 level courses.

A course offering practice in individual judgement of various literary forms, with introduction to the principles of criticism.

Prospective Honours students are recommended to take this course after (at least) two courses at the 300 level. Students may select the course only if they have the approval of the Department.

Lectures: three hours a week, two semesters.

***412.0 THE DEVELOPMENT OF ENGLISH CANADIAN LITERATURE**

Prerequisite: English 201.0 or equivalent.

Some background reading in Canadian intellectual and cultural history is required. The main literary and historical themes are imperialism, sectarianism, and regionalism. Besides poets like Roberts, Lampman, Pratt, F. R. Scott, Birney, and Layton, other writers to be studied include McCulloch, Haliburton, Susanna Moodie, Sara Duncan, Leacock, Callaghan, MacLennan, Innis, G. P. Scott.

413.0 MODERN ANGLO-IRISH LITERATURE C. Byrne

Prerequisite: one course beyond the 201.0 level in some aspect of modern literature, preferably the modern novel.

A study of the contradictions and fissures in modern Ireland as these are seen through the imagination of her writers. An attempt will be made to relate this study to the social and intellectual background of the Atlantic area which is beset by many of the same problems as Ireland and blessed with similar advantages as well. The writers studied will include: W. B. Yeats, J. M. Synge, G. B. Shaw, Sean O'Casey, Maurice O'Sullivan, Liam O'Flaherty, James Joyce, Paddy Kavanaugh, Padric Colum, Sean O'Faolain, James Stephens, J. B. Kane, and Brian Freele.

Lectures: three hours a week, two semesters.

414.0 DRAMA & SOCIETY — RESTORATION TO LATE 19th CENTURY R. Perkyns

Prerequisite: English 201.0 or equivalent.

A course which traces the fortunes of drama over two centuries in relation to the society of the age. The Comedy of Manners is studied with special attention to Congreve, Wycherley, Sheridan and Wilde. The decline of tragedy is traced from the heroic tragedy of Dryden to the rise of the nineteenth-century melodrama. The

theatrical revival in the nineteenth-century centres on social drama, particularly by Ibsen, Strindberg, Pinero, and Shaw.

Lecture/Seminar: three hours per week.

450.0 SPECIAL AUTHOR

Prerequisite: English 201.0 and at least three 300.0 level courses.

A tutorial course open to students who wish to study a particular author largely through independent reading. Students are invited to discuss their special interest with a member of the department during the preceding academic year. In any case, a list of current offerings will be available at registration.

Tutorials: by arrangement with supervisor.

451.0 SPECIAL SUBJECT

Prerequisite: English 201.0 and at least three 300.0 level courses.

A tutorial course open to students who wish to study a particular subject largely through independent reading. Students are invited to discuss their special interest with a member of the department during the preceding academic year. In any case, a list of current offerings will be available at registration.

Tutorials: by arrangement with supervisor.

550.0 SPECIAL AUTHOR

Prerequisite: enrollment in the English Honours Programme, or special recommendation of the department.

This course will provide the opportunity to study a particular author in considerable depth and detail, and will require some measure of independence and initiative in the student.

Tutorials: by arrangement with supervisor, two semesters.

551.0 SPECIAL SUBJECT

Prerequisite: enrollment in the English Honours Programme, or special recommendation of the department.

This course will provide the opportunity to study a particular subject or period in considerable depth and detail, and will require some measure of independence and initiative in the student.

Tutorials: by arrangement with supervisor, two semesters.

552.0 LITERATURE AND CRITICISM SEMINAR

J. K. Snyder

Prerequisite: enrollment in the English Honours Programme, or special recommendation of the department.

GEOLOGY

A seminar course aimed towards an understanding of the general foundations of literature and criticism, and an appreciation of the links between literature and other disciplines. The course will use material from a wide variety of periods and sources.

Seminars: two hours per week, two semesters.

GEOLOGY

C. A. R. de Albuquerque
D. Hope-Simpson
Q. A. Siddiqui

Assistant Professor, Chairman
Professor
Associate Professor

The Department of Geology offers programmes of study for students enrolled in the degree of Bachelor of Science with concentration in Geology and for those registered in the degree of Bachelor of Science with major.

The core courses in both programmes are the five Geology courses numbered 311.0, 322.0, 324.0, 411.0 and 413.0.

Registration in other 400-level Geology courses is open, as an elective, to students enrolled for the Science degree.

Students enrolled in the Geology major programme will normally take courses numbered 450 to 499, with a choice of specialization in the fields of "hard rock" or "soft rock" geology.

Registration in courses numbered 310 and above is with consent of the Department. Normally 400-level courses will follow 300-level courses, although some prerequisites may be waived with the consent of the Department.

Students should seek advice from the Department as to their electives and supporting courses. For example, students wishing to specialize in "soft rock" geology should choose supporting courses in biology while those in "hard rock" should give their preference to chemistry.

Senior students are encouraged to participate in research projects being carried out in the Department.

Courses starred with an asterisk will not be offered in 1973-74.

GEOLOGY

111.0 INTRODUCTION TO GEOLOGY D. Hope-Simpson Q.A. Siddiqui

The Earth as a planet; minerals and rocks, surface and deep-seated processes. Structural evolution of North America with special reference to the Maritime area. Historical Geology. Economic Geology.

Lectures: three hours a week, two semesters.

Laboratory/Seminar: two hours, every second week.

Field work as specified.

201.0 PRINCIPLES OF GEOLOGY C.A.R. Albuquerque

Prerequisites: Physics 111.0 and/or Chemistry 101.0 or equivalent.

Earth materials, geological cycles, geologic time. External processes: deformation, the earth's interior, volcanoes, plutonism, metamorphism. Evolution of the lithosphere.

Field work: maps and mapping.

Text: J. Verhoogen and others — *The Earth*.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

304.0 THE FACE OF THE EARTH D. Hope-Simpson

Prerequisite: Geology 111.0.

The earth's upper mantle and crust. The development of continents and ocean basins. Plate tectonics. The evolution of North America. Special topics including regional studies will be presented by students in seminars.

Lectures: three hours per week.

Laboratory/Seminar: one hour every two weeks.

311.0 CRYSTALLOGRAPHY AND MINERALOGY Staff

Morphological classification and atomic structure of crystals; chemical mineralogy and determinative mineralogy, optical mineralogy.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

322.0 PALEONTOLOGY Q. A. Siddiqui

Fossils, their nature and mode of preservation. The morphology, classification and stratigraphic ranges of the main groups of invertebrate fossils. Elementary vertebrate paleontology.

GEOLOGY

Text: R. Moore -- *Invertebrate Fossils*

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

324.0 STRATIGRAPHY AND HISTORICAL GEOLOGY

Staff

Principles of stratigraphy. Historical geology and tectonic evolution of North America. Principles of stratigraphic paleontology; paleoecology; facies; faunal and floral assemblages.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

355.0 ANALYTICAL CHEMISTRY FOR CHEMISTS AND GEOLOGISTS (Chemistry 331.0)

Staff

An integrated lecture-laboratory course at the intermediate level with emphasis on analytical methods of importance to chemists and geochemists.

Lecture/Laboratory: six hours per week, two semesters.

***411.0 PETROLOGY**

C.A.R. Albuquerque

The optical properties of minerals. The description and interpretation of igneous, sedimentary and metamorphic rocks.

Text: F.J. Turner & J. Verhoogen — *Igneous and Metamorphic Petrology*

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

413.0 STRUCTURAL AND FIELD GEOLOGY

Staff

Primary and secondary structures of rocks. Field mapping. Map interpretation. The graphical analysis of structural field observations. Tectonics.

Students are strongly recommended to attend the Maritime Universities Geological Field School early in May preceding or following this course.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

453.0 IGNEOUS AND METAMORPHIC PETROLOGY

Staff

Modern concepts and theories of petrogenesis. Study of selected

suites of igneous rocks and metamorphic complexes. Igneous rocks, lunar rocks and meteorites.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

455.0 GEOCHEMISTRY

C.A.R. Albuquerque

Principles of distribution of elements. Geochemical features of geological processes. Chemistry of igneous rocks, lunar rocks and meteorites.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

*457.0 ECONOMIC GEOLOGY

Staff

The occurrence and classification of ore-deposits. Theories of origin. Field and laboratory investigations. Surface and underground mapping problems.

Text: to be announced. Reference to Journals.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

*462.0 MICROPALAEONTOLOGY

Q.A. Siddiqui

Principles of Micropaleontology: major groups of micro-fossils and their use in the petroleum industry. Paleocology and correlation. Techniques of collection, preparation and identification.

Text: F.P.C.M. Van Morkhoven — *Post Palaeozoic Ostracoda*
J.A. Cushman — *Foraminifera*

Lectures: two hours a week, two semesters.

Laboratory: three hours a week, two semesters.

Field work as required.

*464.0 SEDIMENTOLOGY

Staff

Minerology, petrography and petrogenesis of the main groups of sedimentary rocks.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

*466.0 PETROLEUM GEOLOGY

Staff

The origin, migration and accumulation of oil and natural gas. Types of oil bearing structures, basic principles in oil exploration,

HISTORY

geological and geographical distribution of oilfields.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

HISTORY

Elizabeth Haigh	Assistant Professor, Chairman
Stanislaw Bobr-Tylingo	Professor
Robert Bollini	Associate Professor
R. H. Cameron	Assistant Professor
Colin Howell	Assistant Professor
Burkhard Kieseckamp	Assistant Professor
John R. MacCormack	Professor
Wallace Mills	Assistant Professor
Mary Sun	Assistant Professor
George F. W. Young	Assistant Professor

DEPARTMENTAL POLICY

- (1) To obtain a major concentration in History a student is required to have five university credits in History beyond 120.0. A History credit from high school will satisfy the Bachelor of Arts requirement of a compulsory History credit but will not count towards the History concentration. A History major must have six university History credits in his/her B.A. degree programme.
- (2) The History Department strongly advises that students without university experience begin their studies in the History Department with the 120.0 level courses. Please note: Students with junior matriculation must begin their studies in the Department on the 120.0 level.
- (3) At least 50 per cent of a student's elective work should be done at the 300.0 level or above. Suggested supporting courses for History majors include: Political Science, Economics, Anthropology, Sociology, and Religious Studies.
- (4) The Honours Programme in History follows the regulations as stated in this calendar.
- (5) All students majoring in History are strongly advised to have

HISTORY

two university credits in a foreign language. In the case of students majoring in Canadian History, French is specified as the language.

PLEASE NOTE: This language requirement, however, is no longer compulsory for a History major.

- (6) The programme for a major in History must be approved by the Department.

COURSE DESCRIPTIONS (GENERAL)

- (a) All History courses are full credit and are year-length courses.
- (b) History 121.0, 122.0, 123.0 & 124.0 are survey courses which fulfill the University requirement of one History credit for the B.A. degree. These courses normally combine lectures with small tutorial group meetings. Three hours per week is the time allotment. These courses can also be counted toward a major in History.
- (c) History courses on the 200.0 level and 300.0 level are frequently structured to consist of both lectures and seminars. Two hundred level courses normally meet for 3 hours per week; three hundred level courses for at least 2 hours per week.
- (d) History courses on the 500.0 level are seminar courses designed for advanced work by History majors and Honours students in their junior and senior years and for Master's candidates. These classes meet for at least 2 hours per week.
- (e) History courses on the 600.0 level are graduate courses. Certain courses at other levels may be taken for graduate credit and will be designated as follows: for example, 340.0 (600.0 level).

The following courses will be offered by the Department of History during the 1973-74 academic year.

121.0	203.0	306.0	328.0	500.0
122.0	204.0	311.0	329.0	501.0
123.0	209.0	313.0	333.0	510.0
124.0	210.0	314.0	334.0	
	211.0	318.0	337.0	
	220.0	321.0	338.0	
		322.0	340.0	
		324.0	341.0	
		325.0	342.0	

HISTORY

The courses below marked with an asterisk () will not be offered during the 1973-74 academic term.*

Students are urged to check with the Department prior to registration to confirm the Department's offerings.

110.0

Students eligible for advanced standing in History will be given this number for a credit.

121.0 CIVILIZATION IN THE WEST

R. Bollini

A course designed to explore the origins and development of the characteristic political, legal, and cultural institutions of western civilizations and their impact on other cultures.

122.0 SURVEY OF THE HISTORY OF CANADA

B. Kieseckamp

A survey course from the earliest times to the present with emphasis on the French regime, their rivalry with Great Britain for control of the continent, British colonial rule, Confederation, and the development of Dominion status.

123.0 SURVEY OF THE HISTORY OF THE UNITED STATES

C. Howell

A survey of U.S. history from its colonial beginnings to the present. Attention will be given to central themes from the Revolution to World War II.

124.0 A HISTORY OF BRITAIN — 1066 TO THE PRESENT

H. Cameron

The course is a general survey of British civilization from the Anglo-Saxon period to the present. The emphasis falls on significant themes rather than narrative history.

203.0 THE TWENTIETH CENTURY

G.F.W. Young J. MacCormack

An historic approach to the major problems of our time. Emphasis will be placed upon the backgrounds to World Wars I and II, the emergence of the United States as a world power, the Communist Revolution and its impact, and the problems of industrial society.

HISTORY

204.0 EUROPE: 1815-1945

S. Bobr-Tylingo

An introduction to nineteenth and twentieth century Europe with particular emphasis on the diplomatic background of the First and Second World Wars.

209.0 MODERN EAST ASIA

M. Sun

China and Japan in the 19th and 20th centuries as they confront the modern west, with special emphasis on the contrast between China's response and that of Japan.

210.0 MODERN LATIN AMERICA

G.F.W. Young

A survey of the emergence and historical development of the Latin American nations since their independence from Spain and Portugal in the early 19th century. The course will focus especially on the political, economic and social evolution of the more populous nations.

211.0 THE HISTORY OF SCIENCE

E. Haigh

The course will cover the major innovations and developments in science and theory from Babylonian and Egyptian civilizations to the present century. Emphasis will be placed on the interaction between any society and the science and technology it develops.

***212.0 THE HISTORY OF RUSSIA AND THE SOVIET UNION, 882 TO THE PRESENT**

E. Haigh

An introductory survey beginning with the establishment of the Rurik dynasty, with emphasis on Russia's social situation and the way it shaped political developments.

220.0 BRITISH EMPIRE-COMMONWEALTH

W. Mills

A study of trends in 18th and 19th century Britain with special emphasis on the practice and theory of imperialism.

***303.0 TUDOR AND STUART ENGLAND**

Prerequisite: one university History course or the consent of the instructor.

A history of England with special emphasis on the development of the English parliament.

306.0 MONARCHY AND REVOLUTION

R. Bollini

Prerequisite: one university History course or the consent of the instructor.

HISTORY

Between 1648 and 1815, the West made its greatest efforts to build a consensus from the remnants of medieval polity and the strengths of the new, analytical ideal. As the culmination of these efforts, the Atlantic revolutions of the last quarter of the 18th century are at the center of this course.

311.0 MEDIEVAL ENGLAND

H. Cameron

Prerequisite: one university History credit or the consent of the instructor.

The course attempts to trace the evolution and continuity of ideas and institutions in the great formative period of English History.

***312.0 MEDIEVAL EUROPE**

The main currents of medieval European history with special emphasis on the intellectual and cultural aspects.

313.0 EUROPE, 1815-1870

S. Bobr-Tylingo

In this course particular emphasis will be placed on the history of France, on the revolutions of 1848-1849, and on the unification of Germany and Italy.

314.0 EUROPE, 1870-1945

S. Bobr-Tylingo

Emphasis will be placed upon the backgrounds of World Wars I and II and the problems of modern industrial society.

***315.0 NINETEENTH-CENTURY BRITAIN**

Prerequisite: one university History credit or the consent of the instructor.

A study of society and values in the leading world power of the age.

***316.0 FOUNDATIONS OF AMERICAN HISTORY: Colonial Period to 1789**

Prerequisite: one university History credit or the consent of the instructor.

A course which is concerned with the founding of the American nation. Attention will be given to colonization, the growth of the Thirteen Colonies, their relationship with Great Britain culminating in the Revolution, and the establishment of the United States of America.

HISTORY

*317.0 AMERICA IN THE NINETEENTH CENTURY

Prerequisite: one university History course or the consent of the instructor.

A course which discusses the growth of the United States from an agrarian, importing nation to an industrial, exporting nation. Emphasis will be on the internal problems of developing the country, the expansion into the West, the Civil War, and the triumphs of the industrialists.

318.0 AMERICA IN THE TWENTIETH CENTURY

C. Howell

Prerequisite: one university History course or the consent of the instructor.

A course concerned with the rise of financial capitalism and its relationship to the development of the United States as a world power.

319.0 CANADIAN-AMERICAN RELATIONS

C. Howell

This course will examine basic developments in Canadian-American relations. Emphasis will be on the events of the geographical region of New England and the Maritime Provinces. Political as well as social, economic, and religious trends will be analyzed. Some opportunity will be afforded students to use the vast quantity of primary source material at the Public Archives of Nova Scotia.

321.0 AFRICA IN THE 19th AND 20th CENTURIES

W. Mills

A look at some African societies and their values, with some examination of the phenomena of European intrusions, conquests and colonialism, and their impact on African societies.

322.0 SOUTH AFRICA

W. Mills

A study of the complex relationships and conflicts arising from different cultures, religions and skin colours from the 17th century to the "apartheid" state of the mid-twentieth century.

*323.0 DYNASTIC HISTORY OF CHINA, 618-1911

Prerequisite: two History credits or the consent of the instructor.

A study of society, government and intellectual development in China during the T'ang, Sung, Ming and Ch'ing dynasties, with special attention to factors affecting the rise and decline of dynasties.

HISTORY

324.0 CULTURAL HISTORY OF JAPAN, 710-1868

M. Sun

Prerequisite: two History credits or the consent of the instructor.

A study of the evolution of Japanese society and culture from the Nara period to the Tokugawa shogunate in the 19th century. Special emphasis will be placed on the transition from the period of imitation of the Chinese model to the emergence of a characteristically Japanese culture.

325.0 THE IBERIAN EMPIRES IN THE NEW WORLD, 1492-1810

G.F.W. Young

Prerequisite: one History credit or the consent of the instructor.

The history of colonial Latin America with special emphasis on the Iberian maritime expansion, conquest, and colonization of the New World; the survival and continuing influence of the Amerindian peoples in the colonial world; the impact of the African negro on colonial society; and the administration, economy and final collapse of the empire.

***326.0 THE IBERIAN PENINSULA FROM ROMAN TIMES TO THE PRESENT**

Prerequisite: one History credit or the consent of the instructor.

A study of the history of Spain and Portugal from their Roman foundations to the present, with special emphasis on the period since the reign of Ferdinand and Isabella.

***327.0 A HISTORY OF NEW FRANCE TO 1791**

Prerequisite: one university History course or the consent of the instructor.

This course will involve a study of the cultural, social, political, and economic development of the French regime in America. In addition, it will attempt to deal with the immediate consequences of the Conquest insofar as they were reflected in this development.

328.0 A HISTORY OF BRITISH NORTH AMERICA, 1763-1867

Prerequisite: one university course in History or the consent of the instructor.

This course will examine the major political, social, economic, religious, and intellectual trends evident in British North America in the period following the Treaty of Paris, 1763. Special attention will be given to the historiography of this period.

HISTORY

329.0 HISTORY OF CANADA, 1849-1920

B. Kieseckamp

Prerequisite: one university course in History or the consent of the instructor.

This course deals with the problems arising from the attempt to build a British North American nation in the age of Macdonald and Laurier.

*331.0 MODERN FRANCE, 1815-1940

Prerequisite: one university History course or the consent of the instructor.

The Atlantic revolutions to which France was a parent promised free lives within the national community. In France this has meant a continuing tension between social advance and the exigencies of state security. The course will examine this phenomenon from the time of the first Napoleon to June, 1940.

*322.0 THE SCIENTIFIC REVOLUTION

Prerequisite: one university History course or the consent of the instructor.

The aim of the course is the study of the intellectual revolt which we know as the Scientific Revolution of Western Europe. The point is to examine man's reinterpretation of the natural universe in the context of the philosophical, cultural and social milieu of the 16th, 17th, and 18th centuries.

333.0 A HISTORY OF CANADA IN THE 20TH CENTURY

B. Kieseckamp

Prerequisite: one university History course or the consent of the instructor.

A course designed to examine the emergence of Canada's social, political, and economic structures in the 20th century. Some attention will also be given to Canada's role as an emerging world power, her relationship with the United States, and her role within the British Empire and Commonwealth.

334.0 MYTH AND HISTORY: THE PROBLEM OF INTERPRETING HUMAN EXISTENCE

R. Bollini

Prerequisite: one university History course or the consent of the instructor.

Man's search for meaning. The life of man in relation to his own past and that of his communities; the question put to Marc Bloch; "Papa, what good is history?" Students in this course coregister in Religious Studies 306.0.

HISTORY

***336.0 ENVIRONMENT, INSTITUTIONS, AND VALUES IN CANADA AND THE UNITED STATES DURING THE 19TH AND 20TH CENTURIES**

Prerequisite: two university History courses, one of which must be in either Canadian or American History, or the consent of the instructor.

This course will examine the development of institutions and attitudes in Canada and the United States during the 19th and 20th Century. Unlike traditional courses in Canadian-American relations it will deal with the development of the peculiar North-American life-style. Particular emphasis will be put on the role of the frontier and of religion and ideology in the development of national institutions, national myths, and national consensus.

Students will be expected to utilize primary as well as secondary materials, including various literary, philosophical, and religious writings.

337.0 RUSSIA IN REVOLUTION E. Haigh

Prerequisite: two History credits or the consent of the instructor.

The course will begin with the Decembrist revolt of 1825 and end at the time of Lenin's death when Stalin's rise to absolute power was beginning. It will deal with the social, political and intellectual dissent in response to autocratic intransigence which swept nineteenth century Russia and finally culminated in the Bolshevik seizure of power.

Some primary sources, including a few relevant novels, will be read in addition to secondary materials.

338.0 HISTORY AND HUMAN VALUES J. MacCormack

Prerequisite: one university History course or the consent of the instructor.

The course will be comparative in structure rather than chronological. The main topics will be the effect of natural-law ideas and church-state conflict on the political and legal institutions of Western Europe in the Middle Ages; the impact of Protestant values on the revolutions of the 17th and 18th centuries; the erosion of natural law by Cartesianism and man's attempt to find new value structures on the political significance of Confucianism, the Indian value systems, and Medieval philosophy.

***339.0 RUSSIA AND THE U.S.S.R. SINCE 1917**

Prerequisite: two history credits or consent of the instructor.

HISTORY

The course will deal with Russia and the Soviet Union from the abdication of Tsar Nicholas II to the post-Khrushchev period. There will be an attempt made to examine the discrepancies between the theory of communism and its practice, and the possible reasons for that discrepancy. Some time will be spent considering the situation of religion, culture and the arts in the U.S.S.R.

The course is designed as a companion to History 337.

340.0 HISTORY OF THE ATLANTIC PROVINCES

Prerequisite: one university History course or the consent of the instructor.

Commencing with the earliest European contact with the region, this course will concentrate on the period after the beginning of permanent settlement. Special emphasis will be given to Nova Scotia as an area of severe clashes between the Indian and European cultures, of intense English-French rivalry, and later of the problems in adopting traditional British models of government, settlement, and society to a colonial region.

341.0 BRITAIN IN THE TWENTIETH CENTURY

H. Cameron

Prerequisite: One university course in History or the consent of the instructor.

The course will attempt to outline and to explain the drastic changes which occurred in the international status and social fabric of the United Kingdom in the present century.

342.0 CHINA IN REVOLUTION, 1850-1950

M. Sun

Prerequisite: one university history credit.

In general terms this course is an analysis of the causes and consequences of the various revolutions which have drastically changed the course of modern Chinese history. More specifically, the problems of reform versus revolution, leadership, economic and social injustices, subversive ideology and governmental reactions will be dealt with in detail.

**500.0 (600.0 level) READING COURSES IN HISTORY

Prerequisite: the consent of the instructor.

Each reading course will be organized by the instructor(s) involved. In general, each course will be centered round a specific theme, and the students will be expected, through their reading, to be familiar with all aspects of the chosen area. Examinations and/or papers will be required at the end of each course.

HISTORY

501.0 (600.0 level) THE PURITAN REVOLUTION AND THE CROMWELLIAN PROTECTORATE

J. MacCormack

Prerequisite: History 303.0 or consent of the instructor.

A pro-seminar with particular emphasis on political and economic changes during the Puritan revolution.

***502.0 (600.0 level) THE ERA OF THE FRENCH REVOLU- TION**

The background, course and impact of the French Revolution.

***503.0 (600.0 level) GERMAN FOREIGN POLICY, 1890-1945**

The history of Germany with special emphasis on German foreign policy.

******These courses will be offered providing there is sufficient student interest and the professor is willing to give the course.

***504.0 (600.0 level) BRITISH FOREIGN POLICY, 1890-1945**

Prerequisite: History 203.0, History 314.0, History 315.0, or the consent of the instructor.

Particular emphasis will be placed on Anglo-American relations, the Anglo-French Entente before 1914, and Anglo-German relations 1930-1945. Students will be expected to do considerable research in the diplomatic documents of the period.

***505.0 (600.0 level) UNITED STATES FOREIGN POLICY, 1890-1945**

Prerequisite: At least one university course in U.S. History or the consent of the instructor.

Emphasis will be placed on the emergence of the United States as a world power prior to World War I; the retreat into isolation after 1918 and American-Japanese relations to 1941.

***506.0 (600.0 level) THE POLITICS OF THE PEACE SETTLEMENT, 1919-1921**

A seminar in which students will be expected to work closely in the documentary sources.

HISTORY

***508.0 (600.0 level) CHURCH AND STATE THROUGH THE AGES (CROSS-LISTED IN 3 OTHER DEPTS.)**

Prerequisite: History 338.0 or consent of the instructor.

An inter-departmental seminar made possible by the cooperation of the following departments: History, Philosophy, Political Science, and Religious Studies.

***509.0 (600.0 level) THE ERA OF THE AMERICAN CIVIL WAR**

A course concerned with the causes and impact of the American Civil War.

510.0 (600.0 level) A PERIOD IN THE HISTORY OF NOVA SCOTIA

Prerequisite: at least one university course in Canadian History or the consent of the instructor.

A course designed especially for Honours History students who will be afforded an opportunity to use the original material as found in the Public Archives of Nova Scotia. The course will be conducted as a seminar with the presentation of papers on given topics as well as discussion of these papers and related topics.

***511.0 (600.0 level) MODERN EAST ASIA, SELECTED PROBLEMS IN MODERNIZATION**

Prerequisite: History 209.0 or the consent of the instructor.

The influence of the West on the modernization efforts of China and Japan during the 19th and 20th Centuries.

***512.0 (600.0 level) SPECIAL TOPICS IN PRE-CONFEDERATION CANADIAN HISTORY**

Prerequisite: at least one university course in Canadian History or the consent of the instructor.

This course will enable students to explore certain historiographical problems in Canadian History and to use primary source material more extensively than is possible in lecture courses.

***513.0 (600.0 level) SELECTED PROBLEMS IN POST-CONFEDERATION CANADIAN HISTORY**

Prerequisite: at least one university course in Canadian History or the consent of the instructor.

The course is designed to introduce the student in a detailed way to some of the major problems of the Canadian national experience.

HISTORY — MATHEMATICS

Particular emphasis will be placed on one or more of the following: the political, economic, social, intellectual, and/or religious dimensions of this experience. Students will be introduced to some of the primary documents of the period.

*514.0 (600.0 level) PRO-SEMINAR IN LATIN AMERICAN HISTORY

Prerequisite: History 210.0 or the consent of the instructor.

A reading seminar involving an in-depth study and an historiographical research and interpretive paper on a selected period and/or problem in the history of Latin America. The aim of this course is to give students interested in the area a working knowledge of the historiography and an introduction into the problems of original research of the period and/or problem under consideration. While not absolutely required, a reading knowledge of Spanish or Portuguese is strongly desirable.

Cross-Listed Courses

Courses offered in other Departments which are cross-listed in History are:

- | | |
|---------------------------------|----------------------------|
| 205.0 – Classics 205.0 | – Hellenistic History |
| 223.0 – Classics 203.0 | – History of Greece |
| 224.0 – Classics 204.0 | – History of Rome |
| 300.0 – Anthropology 351.0 | – The Dawn of Civilization |
| 309.0 – Religious Studies 308.0 | – Towards the Reformation |

The Department is prepared to allow some courses, other than those listed above, to be counted in a student's History concentration. Students must seek the Department's permission in such cases.

MATHEMATICS

K. Singh	Associate Professor, Chairman
Faith Chao	Assistant Professor
W. Finden	Lecturer
M. T. Kiang	Assistant Professor
D. Kabe	Associate Professor
P. Scobey	Lecturer
Y. P. Singh	Assistant Professor
B. White	Lecturer

MATHEMATICS

Mathematics courses listed below include courses intended for Math majors as well as so-called 'service' courses — designed to meet the needs of students majoring in other departments. Two courses falling in the latter category are Math 113.0 and Math 116.2. These courses are not suitable for Math majors. The following five courses are required of all Math majors.

- (i) Math 110-111 (or credit for grade XII Math)
- (ii) Math 210-211
- (iii) Math 310.0 or 311.0
- (iv) Math 312.0
- (v) Math 349.0

Besides these five, Math majors are expected to study at least two more Math courses selected in consultation with the department.

The department also offers an Honours programme for Math majors of above average ability. Math majors in their sophomore year with a grade point average of 2.5 or better in their Math courses should consider enrolling in the Honours programme and, if so inclined, are advised to consult with the department before making a formal application. Honours students are required to take nine full Math courses beyond the sophomore level (numbered 300 or above) including courses required for Math majors and Math 410 which is compulsory for Math Honours students.

Math 115.0 is the course designed to meet the needs of liberal Arts students who desire a Math course but do not have a strong background in Mathematics. This course is also open to Math majors.

Math 225.0 (old number 127.0) and Math 226-227, 327 are intended for students interested in computer science and numerical analysis. These are also open to Math majors.

Math 314.0, and 414.0 and 420.0 are intended for students interested in probability and statistics. These are also open to Math majors.

All courses listed below, with the exception of Math 327.0, 413.0, 414.0, 420.0, 435.0, 445.0, 449.0, 525.0 and 556.0 are intended to be offered every year. Out of the excepted list the courses to be offered during 1973-74, subject to satisfactory enrollment are Math 327.0, 420.0, 435.0 and 556.0.

Information regarding the text books and instructors for different courses will be available at the time of registration.

Courses starred with an asterisk will not be offered in 1973-74.

MATHEMATICS

110.1 (110.2) ALGEBRA AND TRIGONOMETRY I Staff

Prerequisite: Grade XI Mathematics.

Introduction to Algebra and Trigonometry.

Sets and operations, real numbers, functions, relations, graphs of elementary functions, elementary trigonometry, exponential functions, linear and quadratic inequalities, logarithm.

Lectures: three hours a week, one semester.

Tutorials: one hour a week, one semester half course.

111.1 (111.2) ALGEBRA AND TRIGONOMETRY II Staff

Prerequisite: Mathematics 110.1 (110.2).

Solution of triangles, more advanced trigonometry, polynomials; remainder theorem; sequences, mathematical induction; analytical geometry, algebra of complex numbers.

Lectures: three hours a week, one semester.

Tutorials: one hour a week, one semester half course.

113.0 MATHEMATICS FOR COMMERCE STUDENTS Staff

Prerequisite: Grade XI Mathematics.

Elementary set theory, real numbers, relations and functions, graphs, exponential and logarithmic functions, sequences and series, permutations, combinations, binomial theorem, inequalities, polynomial functions, systems of linear equations, matrices and solution of linear systems, limits.

Lectures: three hours a week, two semesters.

Tutorials: one hour a week, two semesters.

115.0 HISTORY AND DEVELOPMENT OF MATHEMATICS F. Chao

Prerequisite: none.

The development of arithmetic, including elementary classification of numbers, the concept of unity to algebraic operations, and artificial numbers. The development of Euclidean and analytic geometry with applications to optics and earth measures. The progress of a system of measures, of trigonometry and the concept of limits from the Greeks to Leibnitz and Newton, and Cauchy. Special attention will be paid to the effects of mathematics on the cultural development of the period.

Lectures: three hours a week, two semesters.

116.2 INTRODUCTION TO DIFFERENTIAL AND INTEGRAL CALCULUS TECHNIQUES K. Singh

Prerequisite: Mathematics 110.1 (110.2) or concurrently.

Functions and graphs, limits and continuity, derivatives as the rate of change, geometrical meaning of derivative, integration as summation and as the inverse process of differentiation, definite integration, geometrical meaning, techniques for differentiation and integration of elementary function.

Lectures: three hours a week, one semester.

210.1 (210.2) DIFFERENTIAL CALCULUS Staff

Prerequisite: Grade XII Mathematics or Mathematics 111.1 (111.2).

Inequalities, absolute values, functions and their graphs, limits and continuity, derivatives, implicit differentiations, application of derivatives to geometrical problems, mechanics and maxima, minima, second derivatives, Rolle's Theorem, mean value theorem, differentials and approximations.

Lectures: three hours a week, one semester half course.

Tutorials: one hour a week, one semester.

211.1 (211.2) INTEGRAL CALCULUS Staff

Prerequisite: Mathematics 210.1 (210.2).

Antiderivative, the definite integral, fundamental theorem of integral calculus, applications of definite integral, techniques of integration, parametric coordinates.

Lectures: three hours a week, one semester.

Tutorial: one hour a week, one semester half course.

225.0 ELEMENTS OF COMPUTER SCIENCE

Prerequisite: Senior Matriculation. Junior Matriculation also may be acceptable.

Algorithms and flowcharts. Input, output, storage, arithmetic, and control. Simple machine language, looping and branching. Computer representation of numbers. Implication of finite word lengths and order of operations. Overflow and round off. Data representation and storage, data manipulation, tree structures, lists, stacks. Numerical applications, functions and procedures, character strings, roots of equations, maxima and minima, areas, averages, root-mean-square. A study of FORTRAN and its application.

Lectures: two hours a week, two semesters.

Tutorials: one hour a week, two semesters.

MATHEMATICS

308.1 (308.2) NUMERICAL ANALYSIS (PART ONE)

B. White

Prerequisite: Mathematics 210.0 (210.2), 211.1 (211.2).

A study of FORTRAN languages with special emphasis on version IV. Applications to numerical solutions of certain non-linear equations, numerical integration and differentiation and evaluation of certain functions.

Lectures: three hours a week, one semester.

Laboratory: one hour per week.

309.1 (309.2) NUMERICAL ANALYSIS (PART TWO)

B. White

Prerequisite: Mathematics 308.1 (308.2).

Matrices and solutions to non-linear equations, finite differences, iterative techniques, interpolation, numerical differentiation and integration, difference and differential equations.

Lectures: three hours a week, plus laboratory periods, one semester.

310.0 CALCULUS II

B. White

Prerequisite: Mathematics 211.1 (211.2).

Coordinate systems (polar, cylindrical, spherical), indeterminate forms, l'Hopital's Rule, improper integrals, determinants and Cramer's Rule, vector algebra and three dimensional geometry, vector calculus, partial differentiation, maxima and minima of functions of two variables, multiple integration, infinite sequences and series, convergence, Taylor's Theorem in one and two dimensions.

Lectures: three hours a week, two semesters.

Tutorial: one hour a week, two semesters.

311.0 ENGINEERING MATHEMATICS

F. Chao

Prerequisite: Mathematics 211.1 (211.2)

Matrices and determinants, vector algebra, infinite sequence series, partial derivations, double integrals, line integrals, algebra of complex numbers, first order differential equations, linear differential equations with constant coefficient. Various engineering applications will be discussed. (Except for its greater emphasis on applications this course covers almost the same material as Math. 310.0 and is considered equivalent to that for all departmental purposes.)

Lectures: three hours a week, two semesters.

Tutorials: one hour a week, two semesters.

MATHEMATICS

312.0 LINEAR ALGEBRA

P. Scobey

Prerequisite: Mathematics 310.0 or 311.0 or concurrently.

Abstract systems, fundamental properties of vector spaces, linear transformations and matrices. Linear equations and determinants, Hamilton-Cayley theorem, canonical forms, metric concepts, functions of matrices.

Lectures: three hours a week, two semesters.

Tutorial: one hour a week, two semesters.

314.0 APPLIED STATISTICS

D. Kabe

Prerequisite: Mathematics 211.1 (211.2).

Elements of set theory, probability, conditional probability, Bayes-Laplace rule, binomial, hypergeometric, poisson, multinomial, uniform, exponential, gamma, beta, and normal distributions. Mathematical expectation, moments, moment generating functions, Chebychev's theorem, sums and random variables, sampling distributions, chi-square, F and T distribution, point and interval estimation, tests of hypotheses, linear regression and correlation, bivariate normal distribution, the method of least squares.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

327.0 ADVANCED NUMERICAL ANALYSIS

W. Finden

Prerequisite: Mathematics 309.1 (309.2)

Further studies in interpolation, numerical integration and differentiation, matrix inversion and solutions of systems of linear equations and numerical solutions of ordinary and partial differential equations.

Lectures: three hours a week, two semesters.

Laboratory: one period a week.

349.0 ANALYSIS I

M. T. Kiang

Prerequisites: Math 211.1 (211.2)

Sets, functions, and relations, real numbers field, upper and lower bounds, countability, sequences and subsequences, accumulation points, metric spaces, continuous function, integration.

Lectures: three hours a week, two semesters.

410.0 CALCULUS III

P. Scobey

Prerequisite: Mathematics 310.0 or 311.0.

MATHEMATICS

Uniform convergence, series and limits vector algebra and matrices, multivariate calculus, Fourier series, Green's, Stokes and divergence theorem, Jacobian and implicit functions theorem.

Lectures: three hours a week, two semesters.

***413.0 MODERN ALGEBRA**

Prerequisite: Mathematics 312.0.

A study of formal algebraic systems and integral domains, groups, rings, fields and vector spaces and the deduction of their more important properties.

Lectures: three hours a week, two semesters.

***414.0 INTRODUCTION TO MATHEMATICAL STATISTICS**

Prerequisite: Mathematics 310.1 or Mathematics 311.0.

Non-parametric methods, simple tests and estimation of hypotheses, elements of sampling theory, analysis of variance and related design of experiments.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

420.0 ACTUARIAL MATHEMATICS — MATHEMATICS OF INSURANCE

D. Kabe

Prerequisite: Math 310.0 or 311.0

Elements of probability, survival function of one or more persons, measures of mortality. Commutation functions, premiums and reserves, continuous and varying annuities, stationary population theory, basic actuarial functions, single and multiple life contingencies.

Lectures: three hours a week, two semesters.

425.0 ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS

Y. P. Singh

Prerequisite: Mathematics 310.0 or Mathematics 311.0

Classical techniques of solving first and second order equations, systems of equations, series solutions, transform methods, introductions to partial differential equations and discussion of simple types.

Lectures: three hours a week, two semesters.

MATHEMATICS

435.0 THEORY OF A COMPLEX VARIABLE

K. Singh

Prerequisite: Mathematics 310.0 or Mathematics 311.0.

A complex plane. Elementary transformations and mapping, analytic functions, branch points and cuts, infinite series and uniform convergence, conformal mapping, complex integration, Cauchy's theorem, residues, Liouville's theorem and the fundamental theorem of algebra.

Lectures: three hours a week, two semesters.

*445.0 INTRODUCTORY OPERATIONS RESEARCH

Prerequisite: Mathematics 310.0 or 311.0 and (or concurrently) Mathematics 312.0.

The first half of the course will be devoted to a thorough discussion of linear programming, including geometry of convex sets in n -dimensional space, a theoretical development of the simplex algorithm, and duality. Approximately one half of the second semester will be devoted to dynamic programming, with the remainder of the term taken up by special topics to be selected from game theory and its relation to linear programming, transportation problems, network problems, decomposition of linear programming problems, integer programming, queuing theory, classical optimization theory, calculus of variations. The selection of topics will vary from year to year, depending on the interests of the students.

Lectures: three hours a week, two semesters.

*449.0 ANALYSIS II

Prerequisites: Mathematics 349.0.

A study of sets, sequences and functions including the Bolzano-Weierstrass, Heine-Borel and Baire Category theorem, measure theory, Lebesgue integration, Fatou's, Egoroff's, Lebesgue's and Birkhoff's ergodic theorems, properties of functions of bounded variation.

Lectures: three hours a week, two semesters.

*525.0 PARTIAL DIFFERENTIAL EQUATIONS

Prerequisites: Mathematics 425.0

Derivation of standard second order equations, method of characteristics, Green's functions, separation of variables, Poisson's integral, integral transforms with emphasis on Laplace methods, Special functions.

Lectures: three hours a week, two semesters.

MATHEMATICS

Uniform convergence, series and limits vector algebra and matrices, multivariate calculus, Fourier series, Green's, Stokes and divergence theorem, Jacobian and implicit functions theorem.

Lectures: three hours a week, two semesters.

***413.0 MODERN ALGEBRA**

Prerequisite: Mathematics 312.0.

A study of formal algebraic systems and integral domains, groups, rings, fields and vector spaces and the deduction of their more important properties.

Lectures: three hours a week, two semesters.

***414.0 INTRODUCTION TO MATHEMATICAL STATISTICS**

Prerequisite: Mathematics 310.1 or Mathematics 311.0.

Non-parametric methods, simple tests and estimation of hypotheses, elements of sampling theory, analysis of variance and related design of experiments.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

420.0 ACTUARIAL MATHEMATICS — MATHEMATICS OF INSURANCE

D. Kabe

Prerequisite: Math 310.0 or 311.0

Elements of probability, survival function of one or more persons, measures of mortality. Commutation functions, premiums and reserves, continuous and varying annuities, stationary population theory, basic actuarial functions, single and multiple life contingencies.

Lectures: three hours a week, two semesters.

425.0 ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS

Y. P. Singh

Prerequisite: Mathematics 310.0 or Mathematics 311.0

Classical techniques of solving first and second order equations, systems of equations, series solutions, transform methods, introductions to partial differential equations and discussion of simple types.

Lectures: three hours a week, two semesters.

MATHEMATICS

435.0 THEORY OF A COMPLEX VARIABLE K. Singh

Prerequisite: Mathematics 310.0 or Mathematics 311.0.

A complex plane. Elementary transformations and mapping, analytic functions, branch points and cuts, infinite series and uniform convergence, conformal mapping, complex integration, Cauchy's theorem, residues, Liouville's theorem and the fundamental theorem of algebra.

Lectures: three hours a week, two semesters.

*445.0 INTRODUCTORY OPERATIONS RESEARCH

Prerequisite: Mathematics 310.0 or 311.0 and (or concurrently) Mathematics 312.0.

The first half of the course will be devoted to a thorough discussion of linear programming, including geometry of convex sets in n -dimensional space, a theoretical development of the simplex algorithm, and duality. Approximately one half of the second semester will be devoted to dynamic programming, with the remainder of the term taken up by special topics to be selected from game theory and its relation to linear programming, transportation problems, network problems, decomposition of linear programming problems, integer programming, queuing theory, classical optimization theory, calculus of variations. The selection of topics will vary from year to year, depending on the interests of the students.

Lectures: three hours a week, two semesters.

*449.0 ANALYSIS II

Prerequisites: Mathematics 349.0.

A study of sets, sequences and functions including the Bolzano-Weierstrass, Heine-Borel and Baire Category theorem, measure theory, Lebesgue integration, Fatou's, Egoroff's, Lusin's and Birkhoff's ergodic theorems, properties of functions of bounded variation.

Lectures: three hours a week, two semesters.

*525.0 PARTIAL DIFFERENTIAL EQUATIONS

Prerequisites: Mathematics 425.0

Derivation of standard second order equations, method of characteristics, Green's functions, separation of variables, Poisson's integral, integral transforms with emphasis on Laplace methods, Special functions.

Lectures: three hours a week, two semesters.

MATHEMATICS – MODERN LANGUAGES

556.0 INTRODUCTION TO APPLIED MATHS K. Singh

Prerequisites: Mathematics 425.0

This course will deal with introductory treatment of topics selected from the following. It is not intended to discuss all of them in the same year:

Linear transformations, vectors and tensors, description of ordinary and partial differential equations in terms of tensors and vectors, boundary value problems, special functions, asymptotic expansions, asymptotic techniques for solving perturbation problems, variational methods, integral equations.

Lectures: three hours a week, two semesters.

DEPARTMENT OF MODERN LANGUAGES

French - German - Spanish

French

F. Pepin	Associate Professor, Chairman
L. Batiot	Assistant Professor
G. Patterson	Assistant Professor
G. LePierres	Associate Professor
J. Mackriss	Assistant Professor
A. Murphy	Assistant Professor
D. Nevo	Part-Time

German

R. Nahrebecky	Associate Professor
C. Springer	Assistant

Spanish

A.J. Farrell	Lecturer
--------------	----------

FRENCH

DEPARTMENTAL POLICY

GENERAL

- 1) Placement Tests: Students entering Saint Mary's University from Grade 12* will be given both oral and written placement tests within one week of Registration. On the basis of the results obtained, students will be placed in either the introductory French 200 or the accelerated French 220. It should be noted however, that, although French 220 is the normal stepping stone to upper-level French, students whose work shows promise in French 200 will be strongly encouraged to continue.
- 2) Courses beyond the 102.0 level are taught in French.
- 3) French 100.0 is open *only* to students who have never taken French before or whose level is below Grade XI French.
- 4) Laboratory attendance is regarded as *obligatory* in French 100.0, 102.0, 200.0, 220.0 and 301.0.

*French 102 will still be offered to students entering Saint Mary's University with junior matriculation.

MAJOR CONCENTRATION

- 1) A student registering for a major concentration in French is required to obtain five university credits beyond the 102 level.
- 2) Two different options are open to students choosing their major concentration in French: Option A (language and civilization) and Option B (literature).

The following courses are available to the students in each of the options:

Option A: French 220 (compulsory), French 301, French 302 (compulsory), French 303, French 413, French 418.

Option B: French 220 (compulsory), French 300 (compulsory), French 414, French 415, 416, 417, 419, 420.

A student choosing Option A may, however, with the approval of the Department, take some courses included in Option B, and vice-versa.

A student is required to take at least two courses in his chosen option on the 400 level.

- 3) The courses on the fourth year level will be offered by rotation.
- 4) All students majoring in French *must* take Classics 301.0.
- 5) The students are also strongly advised to take the following courses, which are regarded as desirable electives:
 - Philosophy 203.0 or 208.0 or 209.0 (for all students)
 - History 122.0 in conjunction with French 419.0
 - English 401.0 in conjunction with French 414.0
 - Religious Studies 305.0 in conjunction with French 415.0

MODERN LANGUAGES

HONOURS

The Honours Programme in French, German or Spanish follows the regulations stated on page () of this calendar. Two of the nine courses to be taken in French are compulsory: 300, 500 (seminar in research).

Courses starred with an asterisk will not be offered in 1973-74.

100.0 INTRODUCTION TO THE FRENCH LANGUAGE

J. Mackriss

Prerequisite: none.

Introduction to the French language. A course for students beginning the study of French. The basic structures of the language will be studied, with special emphasis on the oral aspect.

Text: In collaboration. *Les Français comme ils sont*. (Marvin Melnyk Associates).

Lectures: three hours a week, two semesters.

Laboratory: three half hours a week, two semesters.

N.B.: This course is open only to students who have never taken French before or whose level is below Nova Scotia Grade XI French. Such students enrolled in the course who are not eligible for it will not be granted credit.

102.0 ORAL AND WRITTEN FRENCH

A. Murphy
G. Patterson, D. Nevo

Prerequisite: Junior Matriculation French.

An audio-lingual course based on modern principles of linguistics, whose main objective is the development of the ability to speak French. It is supplemented by a workbook for written composition and by oral practice in the language laboratory.

Text: Yvone Lenard, *Parole et Pensée* — 1st part, (Harper and Row). Workbook for *Parole et Pensée*.

Lectures: three hours a week, two semesters.

Laboratory: three half hours a week, two semesters.

200.0 INTERMEDIATE ORAL AND WRITTEN FRENCH

G. LePirrès, A. Murphy

Prerequisite: Senior Matriculation French or French 102.0

A continuation of the method adopted in French 102.0 to develop proficiency in the spoken language. The course also includes the writing of free compositions in French on topics of current interest.

Texts: Yvone Lenard, *Parole et Pensée* — 2nd part, (Harper and Row). Workbook for *Parole et Pensée*. Camus, *L'étranger* — Livre de poche université, (Gallimard).

MODERN LANGUAGES

Lectures: three hours a week, two semesters,

Laboratory: three half hours a week, two semesters.

220.0 ADVANCED INTERMEDIATE FRENCH L. Batiot G. LePierres

Prerequisite: Grade XII (French) or French 102.0.

An oral and written approach to French, including composition, conversation and a review of grammar based on contemporary texts including magazines as well as literary passages.

N.B.: Obligatory for all majors and open to those students who have a good knowledge of French.

Texts: Elaine Limbrick *Nouvelle grammaire pratique du français* (The Copp Clark Publishing Co., Toronto). Adrien Thério and James F. Burks, *Témoins du Monde français* (Appleton-Century-Crofts).

Lectures: three hours a week, two semesters.

Laboratory: three half hours a week, two semesters.

300.0 THE PRINCIPAL THEMES OF FRENCH LITERATURE L. Batiot, J. Mackriss

Prerequisite: French 220.0 or the permission of the Department.

A study of the main themes in French literature from the Chanson de Roland to modern times. Special attention will be given to the relationship between society and literature.

N.B.: This course is the prerequisite for all students who intend to take courses in French literature at either the three hundred or the four hundred levels.

Compulsory for honours and open to all others with the permission of the Department.

Texts: Nelson and Oxen-Handler, *Aspects of French Literature* (Appleton-Century-Crofts).

We recommend the grammar: *Le Nouveau Bescherelle. L'art de conjuguer*. Dictionnaire des 8000 verbes (Hatier), and the dictionary: *Harrap's French - English Dictionary*.

Lectures: three hours a week, two semesters.

301.0 ADVANCED CONVERSATION AND CULTURAL STUDIES L. Batiot, G. LePierres

Prerequisite: French 200 level or equivalent.

A thoroughly practical course intended to continue development in the student's ability to speak French. Various aspects of French cultural life will be discussed in class. Texts by French contemporary writers will help the student acquire a general idea of French civilization. Oral practice in the language laboratory.

MODERN LANGUAGES

Text: G. Mauger, *Cours de Langue et de civilisation françaises—*
Vol. 2 (Hachette).

Lectures: three hours a week, two semesters.

Laboratory: two hours a week, two semesters

302.0 FRENCH PHONETICS

G. Patterson

Prerequisite: none.

First semester: a study of the most important laws in French phonetics, sounds of language and description of French Phonemes, exercises in transcription and elocution. Seminar, second semester: a study of the history of the French language.

N.B.: This course is compulsory for all majors who have chosen option A. Exceptions could be made upon recommendation of departmental advisors.

Texts: Limbrick, Elaine, *Nouvelle grammaire pratique du français* (The Copp Clark Publishing Co.).

Valdman, Albert, Salazar, R.J., Charbonneaux, M.A., *Drillbook of French Pronunciation* (Harper and Row).

Lehmann, W.P., *Historical Linguistics, an Introduction* (Holt, Rinehart and Winston).

Ewert, Alfred, *The French Language* (Faber and Faber, London, England).

Lectures: three hours a week, two semesters.

*303.0 ACADIAN CIVILIZATION

Prerequisite: none.

A general survey of the birth and evolution of Acadian society through a study of literary genres (poetry, novels, short stories, chronicles, etc.), folklore, oral tradition, and artistic modes of expression other than literature.

Lectures: three hours a week, two semesters.

*413.0 FRENCH CIVILIZATION

An in-depth study of France and the fundamental aspects of French life and culture: history, geography, contemporary political institutions, educational system, social and artistic life. Lectures, readings, and discussions. The topic will often be illustrated with slides.

Text: Victor Duloup, *La civilisation française* (Longmans).

Lectures: three hours a week, two semesters.

*414.0 EVOLUTION OF THE FRENCH NOVEL

An examination of the principal stages in the development of the French novel.

MODERN LANGUAGES

Texts: La Fayette, *La Princesse de Clèves*
Abbé Prevost, *Manon Lescaut*
Balzac, *Eugénie Grandet*
Stendhal, *Le Rouge et le noir*
Flaubert, *Madame Bovary*
Proust, *Du côté de chez Swann*
Summer reading is strongly advised.

Lectures: three hours a week, two semesters.

*415.0 THE FRENCH THEATRE

A study of some of the major works of French dramatic literature.

Texts: Corneille, *Le Cid*
Molière, *Don Juan*
Racine, *Phèdre*
Marivaux, *Le jeu de l'amour et du hasard*
Beaumarchais, *Le Mariage de Figaro*
Musset, *On ne badine pas avec l'amour*
Sartre, *Huis Clos*
Beckett, *En attendant Godot*

Lectures: three hours a week, two semesters.

416.0 POETRY IN FRANCE

J. Mackriss

Prerequisite: 300 level or the permission of the Department.

An introduction to the various poetic forms of the 16th, 17th, and 18th centuries including a brief survey of French versification - followed by an intensive study and concentration on the *Romantic*, *Parnassian* and *Symbolist* movements in the poetry of the 19th century up to the first World War.

N.B.: This course will familiarize the students with the form and content of French poetic diction and prosody.

Text: Pierre Seghers, *Le Livre d'or de la Poésie française* (Marabout - Paris)

Lectures: three hours a week, two semesters.

417.0 FRENCH CANADIAN POETRY

F. Pepin

Prerequisite: 300 level or the permission of the Department.

Based on in-depth study of the works of contemporary poets, this course will deal with the technical means of aesthetics to determine the characteristics of poetry as a literary genre. The texts themselves and the relevant critique are used with a view toward determining the evolution of a critical theory of our poetry.

N.B.: This course will be complemented by a workshop of literary creativity and seminars.

Texts (Reference): Pierre de Grandpré, *Histoire de la Littérature française du Québec* (Beauchemin).

MODERN LANGUAGES

Texts (Analysis): M. Colin and J.V. Th  berge, *Terre de Qu  bec* (Renouveau P  dagogique.)

Lectures: three hours a week, two semesters.

418.0 THE CIVILIZATION OF FRENCH CANADA F. Pepin

Prerequisite: 300 level or the permission of the Department.

This course will provide a detailed study of various aspects of the civilization of French Canada: its language, literature, religion, and major historical events as well as an analysis of the achievements in music, art, science and education, and of the current trends in the theatre, cinema, radio and television. Excursions.

Text: L. Lamontagne, *Visages de la civilisation au Canada fran  ais* (Les Presses de l'Universit   Laval).

Lectures: three hours a week, two semesters.

*419.0 FRENCH CANADIAN NOVEL

Prerequisite: 300 level or the permission of the Department.

A study of the origins until 1930. Comparative development of the Canadian novel and popular tradition. The course is also designed to acquaint students with the ideas of writers from 1930 to the present day.

Texts (Reference): Pierre de Grandpr   *Histoire de la Litt  rature fran  aise du Qu  bec* (Beauchemin).

Texts (Analysis): Gu  vremont, *Le Survenant* (Fides)

Savard, *La dalle des Morts et la Folle* (Fides)

Gabrielle Roy, *La Montagne secr  te* (Beauchemin)

M.C. Blais, *Les voyageurs sacr  s* (HMH)

C. Martin, *Doux-Amer (Cercle du Livre de France (poche))*

Lectures: three hours a week, two semesters.

420.0 TWENTIETH CENTURY NOVEL

A. Murphy

In the twentieth century the novel has become the most prominent, if not the most significant, literary genre. What is the secret of its appeal for the modern sensitivity? The novels to be studied in this course, reflecting as they do both the depth and the diversity of the form, may provide an answer to this question.

Texts: Proust, *A la recherche du temps*

Gide, *Les Faux-Monnayeurs*

Mauriac, *Noeud de vip  res*

C  line, *Voyage au bout de la nuit*

Malraux, *La Condition humaine*

Camus, *L'Etranger*

Butor, *La Modification*

Lectures: three hours a week, two semesters.

MODERN LANGUAGES

GERMAN

Courses starred with an asterisk will not be offered in 1973-74

100.0 INTRODUCTION TO THE GERMAN LANGUAGE

R. Nahrebecky, C. Springer

An introductory language course for those beginning the study of German. Basic linguistic structures will be studied with particular emphasis on the oral aspect.

Text: Erika Meyer - *Elementary German* (Houghton Mifflin Co.) Second Edition.

Lectures: three hours a week, two semesters.

200.0 INTERMEDIATE GERMAN R. Nahrebecky, C. Springer

Prerequisite: German 100.0

This course presents an intensified study of grammar and syntax and the reading of German texts.

Texts: Emory E. Cochran - *A Practical German Review* (Prentice-Hall, Inc.) Two short biographies: C.R. Goedsche - *Thomas Mann; Mozart* (American Book Co.)

Lectures: three hours a week, two semesters.

250.0 GERMAN LITERARY PROSE

R. Nahrebecky

The aim of this course is to familiarize the student with the artistic qualities of German literary prose. Summaries, compositions and short essays will be written.

Lectures: two hours a week, two semesters.

*300.0 MODERN GERMAN LITERATURE

A study of trends in Modern German literature (Naturalism, Impressionism and Expressionism).

Lectures: two hours a week, two semesters.

301.0 THE ROMANTIC AGE

R. Nahrebecky

Prerequisite: German 250.0 or equivalent.

The purpose of this course is to provide the student with an understanding of the characteristic traits of German poetry and prose in the Romantic Age.

Texts: Poems, tales and historic tales by L. Tieck, Novalis, H. von Kleist, C. Brentano, A. von Arnim, A. von Chamisso, E.T.A. Hoffman, L. Uhland, J. von Eichendorff and H. Heine will be read and discussed.

Lectures: two hours a week, two semesters.

MODERN LANGUAGES

400.0 GERMAN CONTEMPORARY LITERATURE

R. Nahrebecky

Prerequisite: German 250 or equivalent.

A study of significant prose and dramatic works in German literature from 1945 to the present. A selection of works by Max Frisch, Heinrich Boll, Friedrich Dürrenmatt and Günter Grass will be studied and discussed.

Lectures: two hours a week, two semesters.

SPANISH

Courses starred with an asterisk will not be offered in 1973-74.

101.0 INTRODUCTION TO THE SPANISH LANGUAGE

Essentials of grammar, emphasis on idiomatic expression, conversation and elementary composition.

Text: Turner, Ronald C., *Modern Spanish*, 3rd Edition (Harcourt, Brace & Jovanovich).

Lectures: three hours a week, two semesters.

Laboratory: three half hour periods a week.

201.0 ELEMENTARY SPANISH

Prerequisite: Spanish 101.0 or Spanish matriculation.

Continuation of Spanish 101.0 with particular emphasis on conversation and reading with understanding, composition, self expression, general Spanish literature, language laboratory.

Texts: Gustave W. Andrian, *Modern Spanish Prose, an Introductory Reader* (Macmillan); Castells and Boring, *Lengua y Lectura* (Harcourt, Brace and World, Inc.).

Lectures: three hours a week, two semesters.

Laboratory: three half hour periods a week.

300.0 SPANISH CULTURE AND CIVILIZATION

Prerequisite: Spanish 201 or equivalent.

A survey of historical and social developments. Geography and history with regard to literature, fine arts, architecture, painting and music.

N.B.: This course is compulsory for majors and honours.

Lectures: three hours a week, two semesters.

MODERN LANGUAGES

302.0 PROSE AND STYLISTICS

Prerequisite: Sound knowledge of Spanish Grammar.

Aim: Students learn to "feel" the most appropriate expression in particular circumstances. Class time involves mainly the correction of exercises prepared at home, concentrating on choice of words, imagery, shades of meaning, etc . . .

Text: Candido Ayllón and Paul Smith, *Spanish Composition through Literature* (Prentice Hall). A good Spanish dictionary. No pocket editions.

Lectures: two hours a week, two semesters.

305.0 CERVANTES

Cervantès and his time, characteristics of the novels, *Lo picaresco* in his works.

Texts: Cervantès, *Novelas ejemplares* (Madrid-Espasa-Calpe. Col. "Austral"). Cervantès, *Don Quijote de la Mancha* (Madrid-Espasa-Calpe. Col. "Austral").

Lectures: three hours a week, two semesters.

*306.0 GOLDEN AGE DRAMA

Prerequisite: Spanish 201 or equivalent.

The peak of Spanish Theatre was reached in the century which was called the "Siglo de Oro" in Spain. Special emphasis on the following writers: Tirso de Molina, Lope de Vega and Calderón de la Barca.

N.B.: This course will be offered to majors and honours.

Texts: Tirso de Molina, *El Burlador de Sevilla, El Condenado por desconfiado* (Madrid, E. Nacional. Col. "Obras de Teatro español"). Lope de Vega, *El Alcalde de Zalamea, Fuenteovejuna* (Madrid, Ed. Taurus. Col. "Temas de España"). Calderón de la Barca, *El Alcalde de Zalamea, La vida es sueño* (Madrid-Espasa-Calpe. Col. "Austral").

Lectures: three hours a week, two semesters.

*310.0 THE PICARESQUE NOVEL

Prerequisite: Spanish 201 or equivalent.

An in-depth study of a literary genre that is peculiar to Spain. A look into the development of this genre and the effects of the Spanish Inquisition on it.

Texts: *Lazarillo de Tormes* (Madrid-Espasa-Calpe. Col. "Austral"). Aleman, *Guzmán de Alfarache* (Madrid-Espasa-Calpe. Vol. 5). Cervantès, *Rinconete y Cortadillo* (Madrid-Espasa-Calpe. Vol. 1, Col. "Clásicos castellanos").

Lectures: two hours a week, two semesters.

MODERN LANGUAGES

400.0 THE GENERATION OF 1898

Prerequisite: Spanish 300 or the permission of the professor.

Los Precursores: Clarín, Ganivet; *El amor y el romanticismo*. Emphasis on José Mariano de Larra, Angel Ganivet, Ortega y Gasset, Miguel de Unamuno.

Texts: Larra, *Artículos selectos* (Barcelona - Ed. Iberia. Co. "Obras Maestras"). Ganivet, *Idearium español* (Madrid-Espasa-Calpe. Col. "Austral"). Ortega y Gasset, *España invertebrada* (Madrid-Espasa-Calpe. Col. "Austral"). Unamuno, *En torno al Casticismo* (Madrid-Espasa-Calpe. Col. "Austral").

Lectures: three hours a week, two semesters.

402.0 CONTEMPORARY LATIN-AMERICAN LITERATURE

Prerequisite: 300 level or equivalent.

Chronological and regional coverage from the 19th Century to the present day.

N.B.: This course will be offered to majors and honours.

Texts: Chile: E. Bárbios, *El niño que enloqueció de amor* (Madrid-Espasa-Calpe). Perú: R. Palma, *Tradiciones peruanas* (Madrid-Espasa-Calpe. Col. "Austral"). Argentina: D. Sarmiento, *Facundo* (Madrid-Espasa-Calpe. Col. "Austral"). Venezuela: R. Gallegos, *Doña Bárbara* (Madrid-Espasa-Calpe. Col. "Austral"). Poesias: Rubén Darío, *Azul*; E. del Campo, *Fausto* (Madrid-Espasa-Calpe. Col. "Austral").

Lectures: three hours a week, two semesters.

405.0 TWENTIETH CENTURY SPANISH LITERATURE

Prerequisite: 300 level or equivalent.

Drama and novel, a special emphasis will be given to the following writers: Federico García Lorca, Carmen Laforet, and Comilo José Cela.

N.B.: This course is intended for majors and honours.

Texts: Lorca, *Bodas de sangre* (Madrid, Crédito editorial Hernando. Col. "Novelas y Cuentos"). Lorca, *La Casa de Bernarda Alba* (Barcelona - Ed. Aymá. Col. "Voz, Imagen). Laforet, *Nada* (Barcelona - Ed. Destino. Col. "ancora y delfin"). Cela, *La familia de Pascual Duarte* (Madrid-Espasa-Calpe. Col. "Austral").

Lectures: two hours a week, two semesters.

PHILOSOPHY

Richard H. Beis	Associate Professor, Chairman
Robert N. Ansell	Assistant Professor
Sheila Kindred	Lecturer
Henry Lackner	Assistant Professor
James Lowry	Lecturer
Rowland C. Marshall	Associate Professor
Arthur P. Monahan	Professor
William A. Stewart, S.J.	Professor

Preliminary Remarks

1. The courses from 201.0 to 210.1 (211.2) inclusive are introductory and *alternative*. Normally, a student selects one of them according to his or her preference. A course above 210.1 (211.2) may be counted as satisfying the requirement in Philosophy.
2. A student who chooses a major concentration in Philosophy must successfully complete at least five courses in Philosophy beyond the 211.2 level.
3. With permission of the Department courses numbered as honours courses may also be taken in the general degree programme.
4. A student may register for a major concentration in Philosophy concurrently with a major concentration in another subject approved by the Department. Examples of such subjects are Classics, Economics, English, History and Political Science.
5. Philosophy courses on the 600.0 level are graduate courses. Certain courses at other levels may be taken for graduate credit and will be designated (for example) as follows: 300.0 (600.0).

The courses below marked with an asterisk () will not be offered during the 1973-74 academic term. Students are urged to check with the Department prior to registration to confirm the Department's offerings.*

201.0 INTRODUCTION TO PHILOSOPHY W.A. Stewart

This course deals with five major philosophical problems: The problems of philosophy itself, of knowledge, of material being, of living material being, of man. The student is encouraged to seek intellectually satisfying answers for himself, and at the same time to examine critically some of the major historical and contemporary viewpoints. The course's primary aim is the development of method in philosophy and of the student's own critical intelligence and reflection.

Text: classroom notes.

Lectures: two hours a week, two semesters.

Seminar: one hour every second week.

PHILOSOPHY

202.0 INTRODUCTION TO PHILOSOPHY A.P. Monahan

Is a human being an animal, a machine? Does a human being know - like an animal, like a machine? Does a human being act freely? Are there values, norms, for human behaviour?

This course aims to develop abilities to deal rationally with such questions as they engage the attention of the contemporary mind.

Text: selected readings from ancient, modern and contemporary philosophers.

Lectures: two hours a week, two semesters.

Seminars: one hour a week, two semesters.

203.0 INTRODUCTION TO PHILOSOPHY: LOGIC, MAN AND SCIENCE R.C. Marshall

First term: An introductory study of logic, including uses of language, informal fallacies, definition, forms of deductive and inductive argument.

Second term: An examination of philosophical problems which emerge from a consideration of human capacities and behaviour and physical phenomena. Perception and the reality of material things, reasons and causes, free choice and necessity, minds and machines.

Texts: I.M. Copi - *Introduction to Logic*; text for second term to be announced.

Lectures: two hours a week, two semesters.

Seminar: one hour a week, two semesters.

204.0 INTRODUCTION TO PHILOSOPHY

An introductory examination of philosophy as an intellectual discipline and type of knowledge and of its method of treating such problems as the nature of reality, human knowledge and human values.

Lectures. two hours a week, two semesters.

Seminar: one hour every second week.

205.0 MODES OF THOUGHT R. Ansell and H. Lackner

This course is open to freshmen.

Practice in the most basic and generally useful methods of logic and semantics, and in their applications in various fields, including philosophy.

Lectures: two hours per week, two semesters.

Seminars: one hour per week, two semesters.

206.0 INTRODUCTION TO PHILOSOPHY J. Lowry

The most basic problem of any time and for any person is whether

PHILOSOPHY

the structure of thinking and the structure of physical and spiritual entities are the same or different. If they are different, nothing is knowable. If they are the same, everything is knowable. This course will demonstrate in a definite and methodical way that the structure of thinking and of material and immaterial being is the same, and that reality and intelligibility are identical.

In relation to human life as differentiated from that of inanimate beings, plants, animals, and gods, this demonstration of the identity of matter and spirit with thought will take the form of showing that society, science, art, and religion are *all* necessary and complementary forms of human activity. Within this total intellectual framework present-day principles of social action and structure, scientific truth, artistic creation, and religious belief will be studied in order to decide whether or not they are rationally adequate and defensible.

Texts: classroom notes and selected Greek philosophical texts.

Lectures and Seminars: three hours a week; two semesters.

207.0 CRITICAL THINKING H. Lackner, R. Ansell

The nature of deduction and the technique of deductive inference, the distinction between questions of fact and questions of concept, the technique of conceptual analysis, the relationship between hypothesis and fact in non-deductive inference, the nature of scientific method. Application of the above to moral, political and ideological issues.

Lectures: two hours per week, two semesters.

Seminars: one hour per week, two semesters.

208.0 INTRODUCTION TO PHILOSOPHY S. Kindred

Philosophy requires clarity of thought and expression. Accordingly, the first months will be spent in developing techniques of analysis. Ability to reason inductively and deductively, to spot fallacies and ambiguities and to construct adequate definitions will be sought through regular exercises.

The skills thus gained will then be used to study problems of freedom and determinism and moral issues concerning the individual and society. Is man a machine? Am I free to choose how to act? If I am not, may I be held morally or legally responsible for what I do? If I am free to choose, are there moral reasons why I ought or ought not to do anything? How can I judge whether an act is right or wrong? Have I a right to judge others? Can we judge what individual acts will promote or prevent social justice? What constitutes a just society?

The discussion of these and similar questions will be aimed at establishing ways of appraising ethical points of view. The course does not pretend to provide final answers but to instill techniques that students may use in the resolution of everyday problems.

Lectures and Seminars: three hours a week, two semesters.

PHILOSOPHY

210.1 (211.2) INTRODUCTION TO PHILOSOPHY R. Beis

Students will be introduced to philosophy in this course through a consideration of certain philosophical problems. The following are representative.

First Term: What is morality? Is morality relevant to modern society, or not? If it is, how can one determine concretely what is morally right and wrong?

Second Term: What is the meaning of "meaning"? How is meaning conveyed through language? What is the role of metaphor in language and in talk about God?

Lectures: three hours a week, two semesters.

Note: The sole purpose of the numbering of this course, i.e., 210.1 (211.2), is to provide a half course for Engineering students. Therefore, only Engineering students may register for a half course. All other students, who register in this course, must register in both 210.1 and 211.2.

*215.0 INTRODUCTION TO SYMBOLIC LOGIC R. Ansell

Prerequisites: normally, Philosophy 203.0, 205.0, 207.0, or 208.0, or courses in pure Mathematics or Computer Science (any of the above concurrently with this course, if desired).

A thorough grounding in the propositional and predicate calculi with emphasis on the development of facility in natural deductive and axiomatic methods, and with some attention to metalogic, applications and set theory.

Texts: E.J. Lemmon, *Beginning Logic*; R. Carnap, *Introduction to Symbolic Logic and its Applications*.

Lectures and Seminars: three hours a week, two semesters.

*220.0 MEDIAEVAL PHILOSOPHY AND POLITICS

A. Monahan

Prerequisites: none.

An examination of the mediaeval conception of society, with particular emphasis on the problem of the relation between political society and the society of the Church.

Texts: Readings in Augustine, John of Salisbury, The Canonists, Thomas Aquinas, Dante, John of Paris, William of Ockham, Marsilius of Padua.

Lectures and Seminars: three hours a week, two semesters.

*222.0 INTRODUCTION TO ETHICS R. Beis

Prerequisites: one course in philosophy or permission of the professor.

An introduction to moral philosophy designed to acquaint students

PHILOSOPHY

with historical expressions of basic ethical problems and with contemporary analytic approaches to ethics.

Lectures and Seminars: three hours a week, two semesters.

*224.0 MARXIST PHILOSOPHY

H. Lackner

Prerequisites: none (courses in philosophy, sociology and/or economics would be helpful).

Marxist philosophy has at present more followers than any other systematic philosophy. The emphasis in this course is on the scientific naturalism of the later Marx and contemporary Marxists. The early, "humanistic" Marx will also be considered, if the class so desires. Marx's theory of knowledge, which claims to replace ideology with science and supplement synchronic with diachronic analysis, will be analyzed in detail. Historical materialism is examined as a scientific theory and as an alternative to various other social and political theories. Such misunderstood Marxian concepts as 'dialectic', 'necessity', and 'contradiction' will be shown to refer to underlying, basic economic laws. Evidence for and against Marxism will be investigated.

Lectures and Seminars: three hours a week, two semesters.

*226.0 PHILOSOPHY OF MIND

H. Lackner

Prerequisites: none (an introductory course in philosophy and/or psychology would be helpful).

This course will examine what, if anything, is unique about man. Is he just an animal or a little lower than the angels? The most complex machine of all or an integrated unity of mind and body? A self-organizing system developed through a long process of evolution or a unique product of special creation? Various philosophical and psychological theories will be discussed, but special emphasis will be given to those of S. Freud and K. Dabrowski.

Lectures and Seminars: three hours a week, two semesters.

*230.0 PHILOSOPHICAL FOUNDATIONS AND METHODOLOGY

R. Ansell

Prerequisites: one course in philosophy.

Instruction in the use of methods for evaluating philosophical writings and solving philosophical problems. Basic papers and problems are selected for their value as exercises in the application of standard logical and semantical techniques, but also because familiarity with them is necessary in later courses. Controversial techniques are evaluated with the aid of uncontroversial ones.

Lectures and Seminars: three hours a week, two semesters.

250.0 GREEK PHILOSOPHY

J. Lowry

Prerequisites: none.

PHILOSOPHY

This course is designed to introduce students to Greek philosophy by considering in a general way the major figures and schools in Greek philosophy within the context of their overall historical movement, studying and discussing in detail a few basic Greek philosophical works, and by allowing students to follow their own individual interests through independent work.

Texts: works by Plato, Aristotle, and other Greek authors.

Lectures and Seminars: three hours a week, two semesters.

300.0 (600.0) HEGEL'S POLITICAL PHILOSOPHY

R. Marshall

Prerequisites: none (courses in any of the social sciences and/or philosophy would be helpful).

A lecture and seminar course examining Hegel's political writings in general and his *Philosophy of Right* in greater detail. The evolution of his political thought will be traced from his earliest writings to his mature works within the context of his philosophical system. An endeavour will be made to relate the more relevant aspects of his political philosophy to current concepts and problems.

Texts: G.W.F. Hegel, *Philosophy of Right*.

Reference: Hegel's other political writings.

Lectures and Seminars: three hours a week, two semesters.

306.0 EPISTEMOLOGY

W. Stewart

Prerequisites: none (an introductory course in philosophy would be helpful).

An investigation of the problem of knowledge through a study of the epistemological thought of Bernard Lonergan.

Text: B. Lonergan, *Insight*.

Lectures: two hours a week, two semesters.

Seminar: one hour every second week.

*308.0 (608.0) PHILOSOPHICAL LOGIC

R. Ansell

Prerequisites: normally, Philosophy 205.0 or 230.0 (concurrently with this course, if desired).

The course investigates philosophical problems surrounding, and arising out of logic: the nature of logic and mathematics, analyticity, modal properties, the a priori, logical truth, mathematical truth. The relevance of these topics to the gauging of past, present and future philosophical techniques will be brought to the fore. Subsidiary topics: identity, proper names, the verb 'to exist' and the ontological argument, Russell's theory of descriptions, conditional statements, entailment, Platonism, nominalism, logical paradoxes.

Lectures and Seminars: three hours a week, two semesters.

PHILOSOPHY

320.0 AESTHETICS: THE PHILOSOPHY OF ART

S. Kindred

Prerequisites: One course in philosophy or permission of the professor.

Man responds to objects of art; he reacts as creator, performer, spectator. He thinks about his responses. The interrelations of artist and spectator in their social and cultural context are focal points for the philosophy of art or aesthetics. What is the nature and significance of art? What is a work of art? What is aesthetic experience? What is involved in the creation of a work of art? What are the criteria for criticism in the arts, especially literature, music, painting, drama and film? Aesthetics involves finding answers to these questions and, through such inquiry, expanding critical awareness about art forms and artistic expression.

Lectures and Seminars: three hours a week, two semesters.

*350.0 (650.0) MEDIAEVAL PHILOSOPHY A. Monahan

Prerequisites: one course in philosophy or permission of the professor.

A history of the major philosophical doctrines and currents in western Europe from the period of Augustine to the fifteenth century.

Text: E. Gilson, *History of Christian Philosophy in the Middle Ages*.

Lectures: three hours a week, two semesters.

*351.0 (651.0) PHILOSOPHY OF SCIENCE H. Lackner

Prerequisites: none.

An introduction to the main problems in the philosophy of science designed to familiarize students with some contemporary analyses of scientific concepts and methods.

Lectures: three hours a week, two semesters.

352.0 (652.0) BRITISH EMPIRICISM R. Ansell

Prerequisites: normally, one course in philosophy.

A critical examination of works by Locke, Berkeley, Hume, Russell and Ayer, with attention focused mainly on their theories of knowledge, meaning and perception.

Texts: readings in Locke, Berkeley, Hume, Russell and Ayer.

Lecturers and Seminars: three hours a week, two semesters.

353.0 (653.0) CONTINENTAL IDEALISM, DESCARTES TO HEGEL R. Marshall

Prerequisites: one course in Philosophy or permission of the professor.

PHILOSOPHY

A lecture and seminar course to examine the development of rationalist and idealist thought from Descartes to Hegel.

Texts: Readings in Descartes, Malebranche, Spinoza, Leibniz, Kant, Fichte, Schelling and Hegel.

Lectures and Seminars: three hours a week, two semesters.

*354.0 (654.0) METAPHYSICS

J. Lowry

Prerequisites: one course in philosophy or permission of the professor.

The greatest claim that metaphysicians have made is that human reason is capable of totally knowing God and the universe. This course will consider such a claim to total knowledge by asking whether there can be a philosophy which, as total system uniting logic and reality, is the ultimate of science wherein is comprehended both the form and the content of the particular sciences and arts. Emphasis is placed on discussion and independent work as well as on lectures.

Texts: Aristotle, *Metaphysics*, Hegel, *Logic*

Other texts may be used in relation to papers and classwork.

Lectures and Seminars: three hours a week, two semesters.

355.0 (655.0) THE EXISTENTIALIST VIEW OF MAN

A. Monahan

Prerequisites: one course in philosophy or permission of the professor.

A lecture and seminar course to examine the origins, expressions and significance of the existentialist movement in contemporary Philosophy.

Texts: readings in Kierkegaard, Nietzsche, Jaspers, Marcel, Sartre and Camus.

Lectures and Seminars: three hours a week, two semesters.

390.0 - 395.0 READING COURSES IN PHILOSOPHY

Prerequisites: consent of the professor.

These courses are organized by the faculty member(s) involved, and are designed to supplement and/or provide an alternative to regular courses in philosophy according to the special needs and interests of students. Each course may be on a particular subject and/or author(s) and could include, if desired, philosophical texts in a language other than English.

*402.0 PHILOSOPHY OF THE SOCIAL STUDIES

Prerequisites: one course in philosophy or permission of the professor.

A philosophical examination of the purpose and character of the

PHILOSOPHY

social studies and of the major conceptual, logical and methodological problems which arise in them.

Lectures and seminars: three hours a week, two semesters.

*407.0 (607.0) PHILOSOPHY OF BEING W. Stewart

Prerequisites: none.

This course is a philosophical investigation into the foundations of metaphysics in cognitional theory, of the principles of proportionate being, of the problem of a transcendent being or God. It also investigates related problems such as the problems of human freedom and of evil and the positions of atheism, agnosticism and pantheism.

Text: B. Lonergan, *Insight*.

Lectures: two hours a week, two semesters.

Seminar: one hour every second week.

*449.0 (649.0) THE PHILOSOPHY OF WITTGENSTEIN R. Ansell

Prerequisites: normally, Philosophy 230.0 (concurrently, if desired).

A critical examination of Wittgenstein's philosophy, chiefly that of the late period.

Text: L. Wittgenstein, *Remarks on the Foundations of Mathematics, The Blue and Brown Books, Philosophical Investigations*.

Lectures, Seminars and Tutorials: approximately three hours per week, two semesters.

*450.0 (650.0) PHENOMENOLOGY

Prerequisites: one course in philosophy or permission of the professor.

The origins, developments, concepts, method and influence of the phenomenological movement in contemporary philosophy.

Texts: selections from Husserl, Heidegger, Sartre, Merleau-Ponty.

Reference: H. Spiegelberg, *The Phenomenological Movement*.

*453.0 PHILOSOPHY OF HISTORY R. Marshall

Prerequisites: one course in philosophy or permission of the professor.

A critical study of the philosophical views on the course of human history (its pattern, purpose and value), and an examination of the aim, nature and validity of historical knowledge.

PHILOSOPHY

Lectures and Seminars: three hours a week, two semesters.

***465.0 (665.0) ANALYTIC PHILOSOPHY**

Prerequisites: one course in philosophy or permission of the professor.

A lecture and seminar course that examines the origins, expressions and significance of the contemporary analytic movement in philosophy.

Texts: readings from representative members of the Analytic School.

Seminars: three hours a week, two semesters.

***466.0 (666.0) ADVANCED ETHICAL THEORY**

Prerequisites: one course in philosophy or permission of the professor.

A lecture and seminar course to examine certain fundamental problems of contemporary ethics. Attention will be concentrated on metaethical problems which arise from and are discussed in the writings of Moore, Stevenson, Hare, Nowell-Smith, Frankena, and Baier.

Texts: selected readings from the above-mentioned authors.

Seminars: three hours a week, two semesters.

467.0 (667.0) AUGUSTINE AND AQUINAS ON PHILOSOPHY A. Monahan

Prerequisites: one course in philosophy or permission of the professor.

A lecture and seminar course to explore the meaning of philosophy and its relation to theology in the writings of Augustine and Aquinas.

Texts: selected readings in Augustine and Aquinas.

Lectures and Seminars: three hours a week, two semesters.

490 - 495.0 READING COURSES IN PHILOSOPHY

Prerequisites: consent of the professor.

These courses are organized by the faculty member(s) involved, and are designed to supplement and/or provide an alternative to regular courses in philosophy according to the special needs and interests of students. Each course may be on a particular subject and/or author(s) and could include, if desired, philosophical texts in a language other than English.

690.0 - 695.0 READING COURSES IN PHILOSOPHY

Prerequisites: consent of the professor.

PHILOSOPHY — PHYSICS

These courses are organized by the faculty member(s) involved, and are designed to supplement and/or provide an alternative to regular courses in philosophy according to the special needs and interests of students. Each course may be on a particular subject and/or author(s) and could include, if desired, philosophical texts in a language other than English.

PHYSICS

U.S. Merdsoy
K. Fillmore
W. Lonc, S.J.
D.S. Murty
F.V. Tomscha

Associate Professor, Chairman
Assistant Professor
Assistant Professor
Professor
Associate Professor

Note: As society continues to struggle with environmental problems, interest is expected to grow in the fields of environmental physics, earth physics, and bio-physics.

Physicists at all degree levels may be engaged by oil and mining industries, while others may be involved in the search for mineral deposits or petroleum. They are employed in governmental research laboratories and in industry in the development of new products. Physicists are also employed in hospitals to supervise such services as high-voltage x-ray equipment and cobalt therapy. Still others study radiation and its effects on living organisms. Graduates with a Bachelor's degree in Physics or in Physics and Mathematics may fill teaching positions at the secondary school level.

Contingent on General Science Degree requirements, students may choose to follow either of the schemes outlined below.

A: Physics Concentration

Freshman Year

English
Mathematics
History
Physics
Elective

Sophomore Year

Humanities elective (preferably English)
Mathematics 210.1 & 210.2
Physics 221.0
Science elective (not Physics)
Philosophy

Junior Year

Physics 321.1, Physics 322.2
Physics 331.1, Physics 332.2
Mathematics 310.0
Humanities or Social Science elective
Social Science elective

Senior Year

Physics 431.1, Physics 432.2
Physics 438.1, Physics 439.2
Physics or Mathematics elective
Two courses elective in Humanities or Social Sciences

PHYSICS

B: Major in Physics

Freshman Year

English
Mathematics
History
Physics 111.0
Elective

Sophomore Year

English
Mathematics 210.1 and 210.2
Physics 221.0
Mathematics or Science elective
Humanities or Science elective

Junior Year

Physics 321.1, Physics 322.2
Physics 331.1, Physics 332.2
Mathematics 310.0
Beyond Sophomore level a related
science elective (not Physics or
Mathematics)
Philosophy

Senior Year

Physics 431.1, Physics 432.2
Physics 438.1, Physics 439.2
Physics 453.1, Physics 471.2
Physics or Mathematics elective
Science or Mathematics elective

Any departure from A or B schemes must receive Departmental approval.

111.0 GENERAL PHYSICS

U.S. Merdsoy

Prerequisite: algebra and trigonometry (concurrently).

Introduction to mechanics, sound, heat, electricity and light.

Lectures: three lecture hours per week, two semesters.

Laboratory: three hour period per week, two semesters.

221.0 UNIVERSITY PHYSICS D.S. Murty, F.V. Tomscha

Prerequisites: Physics 111.0 or a knowledge of Grade XII Physics is necessary. It will be essential for students to take an introductory calculus course concurrently.

Topics will include mechanics, heat, sound, light and electricity.

Text: Sears and Zemansky, *University Physics*.

Lectures: three hours per week, two semesters.

Laboratory: three hours per week, two semesters.

Tutorial: one hour per week, two semesters.

260.0 ELECTRONICS FOR SCIENCE

W. Lonc, S.J.

Prerequisites: Physics 111.0 or equivalent, Mathematics 110.1, or permission of the instructor.

Characteristics of electronic circuits and devices, especially IC's, sensors for light, temperature, sound, telemetry, microwaves, communications, solid state analog and digital circuits.

Text: Brophy, *Basic Electronics for Scientists*.

PHYSICS

Lectures: three hours per week, two semesters.

Laboratory: three hour period per week, two semesters.

Note: (1) This course cannot be a substitute for Physics 111.0 or 221.0.

(2) This course cannot be a credit course for a concentration or majoring student in Physics.

320.1 MODERN PHYSICS

D.S. Murty

Prerequisites: Physics 221.0, Mathematics 311.0 concurrently.

Electrons and ions, charge/mass ratios, photo electric effect, relativity, nuclear atom as revealed by Alpha-ray scattering, spectrum of hydrogen atom and Bohr's theory, x-rays, wave mechanics, nuclear properties.

Text: Olderberg, Rasmussen, *Modern Physics for Engineers*.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

321.1 OPTICS

K. Fillmore

Prerequisites: Physics 221.0, Mathematics 310.0 concurrently.

Geometrical Optics: image formation by spherical surfaces, thin and thick lenses, lens aberrations, telescopes, microscopes. **Physical optics:** speed of light, dispersion, interference, diffraction, resolving power of optical instruments. Polarization.

Text: Sears, *Optics*, (Addison - Wesley).

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

322.2 ELECTRICITY AND MAGNETISM

K. Fillmore

Prerequisites: Physics 221.0, Mathematics 310.0 concurrently.

Electric and magnetic fields, and their corresponding potentials, properties of conductors and insulators, Lorentz force and applications, resistance, capacitance and inductance in AC circuits. The lab will introduce the student to the use of a variety of electric and electronic measuring instruments.

Text: Kip, *Fundamentals of Electricity and Magnetism*, (McGraw-Hill).

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

331.1 CLASSICAL MECHANICS I

F.V. Tomscha

Prerequisites: Physics 221.0, Mathematics 310.0 concurrently.

Introduction to vector analysis, work, potential energy, principle of virtual work, the damped harmonic oscillator, the forced harmonic

PHYSICS

oscillator.

Text: R.A. Becker, *Introduction to Theoretical Mechanics*

Lectures: three hours per week, one semester.

332.2 CLASSICAL MECHANICS II

F.V. Tomscha

Prerequisites: Physics 331.1

Motion of a particle under the action of a central force, deduction of the law of force from Kepler's Laws, the two-body problem, motion of a system of particles, motion of a particle in an accelerated reference system, generalized coordinated, holonomic and non-holonomic constraints, degrees of freedom, Lagrange equations.

Text: R.A. Becker, *Introduction to Theoretical Mechanics*.

Lectures: three hours per week, one semester.

431.1 ELECTROMAGNETIC THEORY: PART I

W. Lonc, S.J.

Prerequisites: Physics 321.1, 322.2, and Mathematics 310.0. Mathematics 411.0 should be taken concurrently.

Development of the theory of electric and magnetic fields and Maxwell's equations in non-polarized media, leading to applications such as waveguides.

Text: Lorraine and Corson, *Electromagnetic Fields and Waves*, (Freeman).

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

432.2 ELECTROMAGNETIC THEORY: PART II

W. Lonc, S.J.

Prerequisites: Physics 431.1.

Development of the theory of electric and magnetic fields and Maxwell's equations in polarizable media, including an introduction to a relativistic formulation of the Maxwell equations.

Text: Lorrain and Corson.

Lectures: three hours a week, one semester.

Laboratory: three hours a week, one semester.

434.1 ELECTRIC CIRCUITS: I

W.Lonc, S.J.

Prerequisites: Math 222 and Physics 221.0

Circuit elements; equilibrium equations (mesh and node analysis), network theorems, complex impedance and the use of phasors, steady state analysis, basic measurements.

Lectures: three hours per week, one semester.

Laboratory: once a week, three hours, one semester.

PHYSICS

435.2 ELECTRIC CIRCUITS: II

W. Lonc, S.J.

Prerequisites: Physics 434.1 or equivalent.

Laplace Transform and Fourier Analysis methods as applied to circuit theory, analysis of circuits containing non-linear elements, analysis of circuits containing active elements.

Lectures: three hours per week, one semester.

Laboratory: once a week, three hours, one semester.

438.1 NUCLEAR PHYSICS I

D.S. Murty

Prerequisites: Physics 321.1, 322.2 and Math 310.0.

Atoms, electrons, radiations, the nuclear atom, x-rays, and atomic structure, quantum theory of radiation, special theory of relativity, group velocity and wave velocity. Mass spectrometers, atomic spectra and atomic structure, the nucleus and isotopes.

Text: Irving Kaplan, *Nuclear Physics*.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

439.2 NUCLEAR PHYSICS II

D.S. Murty

Prerequisite: Physics 438.1

Natural radioactivity and the radioactive laws, artificial nuclear disintegration, artificial radioactivity, alpha-decay, beta-decay, and gamma-decay, nuclear reactions, nuclear forces, nuclear fission, nuclear energy sources, particle accelerators.

Text: Irving Kaplan, *Nuclear Physics*.

Lectures: three hours per week, one semester.

Laboratory: three hours per week, one semester.

453.1 THERMOPHYSICS

K. Fillmore

Prerequisites: Physics 332.2 and Mathematics 310.0

Temperature, internal energy, 1st and 2nd laws of thermodynamics and their implications, entropy, systematic study of state functions and the resulting Maxwell distribution, transport phenomena.

Text: King, Freeman, *Thermophysics*.

Lectures: three hours per week, one semester.

471.2 INTRODUCTION TO QUANTUM MECHANICS

K. Fillmore

Prerequisites: Physics 438.1, Mathematics 410 concurrently.

Wave mechanical concepts, wave packets and uncertainty, linear operators, Schroedinger equation, energy eigenfunctions, harmonic oscillator, hydrogen atom, elastic scattering, co-ordinate, momentum and energy representations.

PHYSICS

Lectures: three hours per week, one semester.

NOTE: all 500 courses will be offered by consultation with the department.

550.0 TOPICS IN THEORETICAL PHYSICS

Prerequisites: Physics 332.2, Mathematics 410.0.

Fluid dynamics, elasticity, tensor calculus, the theory of relativity. The areas of greatest concentration will be decided upon in consultation with the students.

Texts: G.H.A. Cole, *Fluid Dynamics*, (Methuen).
B. Spain, *Tensor Calculus*, (Oliver and Boyd).

Lecturers: three hours per week, two semesters.

551.0 THERMODYNAMICS AND STATISTICAL MECHANICS

Prerequisites: Physics 432.2, Mathematics 410.0.

First and second law of thermodynamics and their application to simple thermodynamic systems and to chemical reactions, kinetic theory and transport phenomena. In statistical mechanics, the macro cononical and grand canonical ensembles, Bose-Einstein and Fermi-Dirac statistics are discussed and applied to gases, electrons in metals, and low temperature physics.

Text: Zemansky, *Thermodynamics and Statistical Mechanics*.

Lectures: three hours a week, two semesters.

552.0 QUANTUM MECHANICS

Prerequisites: Physics 432.2, Mathematics 410.0.

Wave mechanical concepts, wave equation of Schroedinger, energy eigen function, examples of energy eigen functions, general principles of quantum mechanics, interpretative postulates of quantum mechanics, operators with continuous spectra, uncertainty principle, matrix mechanics, the equation of motion of operator, the Dirac notation for wave functions and operators, spin, Pauli's principle, time independent perturbation theory, collision processes, elastic scattering by fixed center of force, Born approximation, inelastic scattering processes, Dirac equation for a free particle.

Text: Mandl, *Quantum Mechanics*, (Butterworth).

Lectures: three hours a week, two semesters.

553.0 UPPER ATMOSPHERE

Prerequisites: Physics 432.2, Mathematics 410.0.

Meteorological conditions in the lower stratosphere, structure and circulation of the upper stratosphere and mesosphere, the sun's radiation and the upper atmosphere, composition of the stratosphere

PHYSICS — POLITICAL SCIENCE

and mesosphere, composition and structure of the thermosphere, heat transfer and radiative processes, atmospheric tides and winds in the lower thermosphere, introduction to some other aeronomic problems, transport properties in the upper atmosphere.

Text: Craig, *The Upper Atmosphere*, (Academic Press).

Reference: Ratcliffe, *Physics of the Upper Atmosphere*, (Academic Press).

Lectures: three hours a week, two semesters.

554.1 INTRODUCTION TO SOLID STATE PHYSICS

Prerequisites: Physics 432.2.

Crystal structure; lattice vibrations; free electron Fermi gas, band structure; properties of simple metals; semiconductors and insulators; superconductivity.

Text: C. Kittel, *Introduction to Solid State Physics*, (Wiley and Sons).

Lectures: three hours per week, one semester.

Laboratory: three hours a week, one semester.

555.2 TOPICS IN ADVANCED NUCLEAR PHYSICS

Prerequisites: Physics 439.2, Mathematics 410.0

Some selected topics in Nuclear Physics will be discussed. Topics will be oriented towards research problems.

Reference: K. Siegbahn, *Alpha-Beta-Gamma Ray Spectroscopy*, Vol. 1 and 2, (North-Holland).

Lectures: three hours per week, one semester.

556.1 ASTROPHYSICS

Prerequisites: Physics 432.2, Mathematics 410.0.

An investigation of the physics of stellar structure with applications to the evolution of stars, nucleosynthesis, supernovae, and neutron stars. The relations of stellar physics to galaxy evolution and to the cosmological problem will be examined.

Reference: Cox Giuli, *Principles of Stellar Structure*, (Gordon and Breach).

Lectures: three hours per week, one semester.

POLITICAL SCIENCE

William J. Dalton
Robert G. Boyd

Professor, Acting Chairman
Associate Professor

POLITICAL SCIENCE

Guy Chauvin	Assistant Professor
Theodore B. Ciuciura	Professor
D. Higgins	Lecturer
Joseph G. Jabbra	Assistant Professor
Ronald G. Landes	Lecturer
R.C. Levesque	Assistant Professor
Edward J. McBride	Associate Professor

Students who intend to complete a major concentration in Political Science must take a minimum of five courses in Political Science. There are two required courses: Political Science 200.0 and 304.0 (With the permission of the department students might be excused from taking one of these courses). The Department also strongly recommends that a student take Political Science 301.0 and one seminar at the 500.0 level in one of the following sub-fields: Canadian Government, Comparative Government, International Relations, Political Thought.

The Honours Programme in Political Science follows the regulations as stated in this Calendar. In addition, students are required to take at least two advanced seminar courses.

Students are reminded that the requirements mentioned above constitute a minimum. If graduate work is contemplated, additional courses in Political Science and in cognate disciplines will be required. For more complete information, the student is advised to consult *Notes and Guidelines for Students in Political Science*, a pamphlet issued by the Department.

200.0 INTRODUCTORY POLITICAL SCIENCE Staff

An introduction to the scope and methods of political science. The nature of the state will be examined, as well as the various purposes advanced for its existence. The student will be introduced to various aspects of government, political parties, international relations and political philosophies.

Lectures and group discussions: three hours a week, two semesters.

301.0 SCOPE AND METHODS OF POLITICAL SCIENCE J. Jabbra

Prerequisites: Political Science 200.0

An introduction to the concerns and methodologies of modern political science. Included will be a discussion of theories and approaches developed by the empirical school of political scientists.

Lectures and group discussions: three hours a week, two semesters.

302.0 DEMOCRATIC GOVERNMENT G. Chauvin

An examination of the basic features of western democratic government. Great Britain, the United States and Canada are used as the main examples of this type of government. Considerable attention is paid to the ideological foundations of the modern

POLITICAL SCIENCE

liberal democratic state.

Lectures and group discussions: three hours a week, two semesters.

303.0 GOVERNMENT AND POLITICS IN THE USSR AND EASTERN EUROPE T. Ciuciura

A survey of the history, culture and political institutions - from the old Kievan Rus to the Russian Empire, the Russian Soviet Federal Socialist Republic, and the Union of Soviet Socialist Republics; the development of political institutions and processes from the Revolution to the present, with attention to the largest non-Russian Soviet republics in Europe (Ukraine) and Asia (Kazakhstan, Uzbekistan); contemporary political institutions and processes in Communist party-states of (or East Central) Europe; the German Democratic Republic, Poland, Czechoslovakia, Yugoslavia, and others.

Lectures and group discussions: three hours a week, two semesters.

304.0 CANADIAN GOVERNMENT AND POLITICS Staff Prerequisite: Political Science 200.0 or equivalent.

A study of Canadian constitutional democracy, encompassing an analysis of both political institutions and political behaviour.

Lectures and group discussions: three hours a week, two semesters.

305.0 INTERNATIONAL RELATIONS D. Higgins Prerequisite: Political Science 200.0 or equivalent.

A survey of international global politics since 1945, systematic analysis of contemporary international relations focussing on the processes of discord and collaboration with particular reference to war and conflict resolution, arms control, economic and political integration of groups of states, international aspects of civil strife, problems of international trade, investment and development, and international control of pollution. Comparative study of foreign policy drawing on the external policies of selected states. A brief consideration of international law and organization. Simulation games are an integral part of the course.

Lectures and group discussions: three hours a week, two semesters.

306.0 GOVERNMENT AND POLITICS IN WESTERN EUROPE

Prerequisite: Political Science 200.0 or equivalent.

A detailed comparative analysis of the institutions and functions of the national political systems, primarily of the United Kingdom, France, Western Germany, Switzerland and Austria.

Lectures and group discussions: three hours a week, two semesters.

POLITICAL SCIENCE

312.0 GOVERNMENT AND POLITICS IN THE UNITED STATES

E. McBride

Prerequisite: Political Science 200.0 or equivalent.

An analysis of the American political system in terms of the inter-relationship of characteristics salient in the political culture, the social base, the constitutional order, the governmental structure and the policy process, with special emphasis on the political party system, voting behaviour, and the Presidency.

Lectures and group discussions: three hours a week, two semesters.

407.0 GOVERNMENT AND POLITICS IN THE MIDDLE EAST

J. Jabbra

Prerequisite: Political Science 200.0

A comparative study of the governments and politics of Middle Eastern countries, with an emphasis on the analysis of the fundamental political and socioeconomic changes that are occurring the area and attempting to shape its modernizing pace.

Lectures and group discussions: two hours a week, two semesters.

418.0 INTERNATIONAL LAW ORGANIZATION

T Ciuciura

Prerequisite: Political Science 200.0 or equivalent.

The principal features of public international law as they have developed and have been invoked in diplomatic practice, international adjudication, and national courts; a study of the structures and the processes of co-operation and conflict within the United Nations, the Commonwealth and other international organizations.

Lectures and group discussions: three hours a week, two semesters.

419.0 COMPARATIVE CONSTITUTIONAL LAW

E. McBride

Prerequisite: Political Science 200.0 or equivalent.

A comparative analysis of constitutional systems. It focuses upon the theory and exercise of judicial review, in the context of either Canadian and American constitutional law, or European constitutional practice. It combines lectures, collateral readings, and the case method.

Lectures and group discussions: two hours a week, two semesters.

430.0 INTRODUCTION TO PUBLIC ADMINISTRATION

J. Jabbra

Prerequisite: Political Science 200.0 or equivalent.

A study of the structure and operation of the administrative branch of government - both in theory and practice. Included will be an examination of the evolution of the Canadian federal public

POLITICAL SCIENCE

administration and public service, with some attention for comparative purposes to related experience in other nations. The administrative responsibilities and powers of the modern state will be assessed, and a sampling of recent organization theories will be undertaken.

Lectures and group discussions: three hours a week, two semesters.

435.0 POLITICAL THOUGHT TO THE FRENCH REVOLUTION

G. Chauvin

An historical treatment of the most important political ideas from the earliest writings on politics to the immediate precursors of the French Revolution. Some attention is paid to the mutual interaction of social conditions and ideas.

Lectures and group discussions: three hours a week, two semesters.

436.0 MODERN POLITICAL THOUGHT

An examination of political ideas from the era of the French Revolutions to the present.

Lectures and group discussions: three hours a week, two semesters.

440.0 THE POLITICS OF THE DEVELOPING AREAS

An examination of problems of political development in Asian and African states, in the context of their modernization processes, with special reference to factors responsible for the emergence of authoritarian governments.

Lectures and group discussions: three hours a week, two semesters.

441.0 GOVERNMENT AND POLITICS IN EAST ASIA

A study of government structures and political dynamics in mainland China, Southeast Asia and Japan, with emphasis on current trends in the Chinese system.

Lectures and group discussions: three hours a week, two semesters.

445.0 PROBLEMS IN CANADIAN GOVERNMENT

R. Levesque

This course offers a systematic investigation of a number of problems that face all levels of government in Canada.

Lectures and group discussions: two hours a week, two semesters.

446.0 POLITICAL PARTIES AND VOTING BEHAVIOUR

An analysis of the structures and functions of individual parties and party systems, with emphasis on Canada, the United States and Western Europe.

Lectures and group discussions:

POLITICAL SCIENCE

550.0 SEMINAR IN THE HISTORY OF POLITICAL THOUGHT

R.C. Levesque

An intensive study of major trends in political thought, early and modern, with special attention to contemporary political doctrines and ideologies, their transformation and interrelation in the course of history and their interrelation with social and political conditions.

Sessions: two hours a week, two semesters.

551.0 CANADIAN GOVERNMENT SEMINAR

D. Higgins
W. Dalton

A study of selected aspects of Canadian government and politics, especially some of the dynamic forces which operate outside the formal constitutional framework.

Sessions: two hours a week, two semesters.

552.0 SEMINAR IN COMPARATIVE GOVERNMENT

T. Ciuciura

Conceived as a work-study group, this seminar is designed for students interested in the use of the comparative method in the analysis of contemporary national political systems.

Sessions: two hours a week, two semesters.

553.0 INTERNATIONAL STUDIES SEMINAR

A seminar on the contemporary interaction of the major powers, with special consideration of selected world problems, tensions, trends and developments.

Sessions: two hours a week, two semesters.

555.0 SEMINAR ON CANADIAN FOREIGN POLICY

Prerequisites: Political Science 304.0 and 305.0 or their equivalents, or consent of the instructor.

Application of recent foreign policy models to Canadian data, survey of Canadian external relations 1867-1970, detailed examination of contemporary problems in Canadian foreign policy, both geographic and functional. The latter includes defense, external trade, foreign aid and international organizations of special concern to Canada. Student presentations on selected topics are an important part of the course.

Sessions: two hours a week, two semesters.

PSYCHOLOGY

J. Darley	• Assistant Professor, Chairman
V. Catano	Assistant Professor
D. Hughes	Part-Time Instructor
R. Konopasky	Associate Professor
K. Konrad	Associate Professor
I. Lenzer	Associate Professor

Psychology is normally begun at Saint Mary's at the Sophomore level. The introductory course is a broad survey of the discipline and is a prerequisite for all other Psychology courses. The *compulsory* core programme for those concentrating in Psychology consists of the introductory course (201.0), Learning (301.0), and Experimental Design and Psychological Statistics (305.0). These courses *usually* must be taken before a student moves on to the 400 range of more specialized courses.

The department offers an Honours Programme which follows the general regulations as stated in this Calendar. A departmental regulation in addition is that fourth year honours students take 449.0, and fifth year honour students take 549.0 (which is restricted to honours students).

Courses starred with an asterisk will not be offered in 1973-74.

201.0 INTRODUCTION TO PSYCHOLOGY

201.0A T.B.A.
 201.0B K. Konrad
 201.0C I. Lenzer, J. Darley
 201.0D I. Lenzer, J. Darley

Prerequisites: Sophomore standing, or permission of the Department.

The science of behaviour, methods and measurement, psychological basis of behaviour, maturation and development, individual differences and intelligence, personality, sensory processes and perception, learning, memory and thinking, motivation and emotion, social and clinical psychology, applications of psychology.

Each person taking this course must act as a subject for psychological experiments for a certain number of hours as a prerequisite for his credit. The number of hours will be announced at the beginning of the course.

Lectures: three hours per week, two semesters.

301.0 PSYCHOLOGY OF LEARNING

V. Catano

Prerequisites: Psychology 201.0 or the permission of the Department. Psychology 301.0 is compulsory for all students majoring in Psychology. The student is recommended to take Psychology 305.0 concurrently. A grade of C is mandatory for majors.

PSYCHOLOGY

Classical conditioning and instrumental learning will be studied as examples of the learning process. Additionally, factors such as reinforcement, punishment, generalization, discrimination, transfer of training, extinction, short-term and long-term retention, interference, all-or-none versus incremental learning, and the psychological correlates of learning.

Lectures: three hours a week, two semesters.

Laboratory: two hours a week, two semesters.

305.0 PSYCHOLOGICAL STATISTICS AND EXPERIMENTAL DESIGN

R. Konopasky K. Konrad

Prerequisites: Psychology 201.0 or the permission of the Department. Mathematics 110.1 - 111.2. Psychology 305.0 is compulsory for all Psychology majors. Students are strongly advised to take Psychology 305.0 in the same year as Psychology 301.0. A grade of C is mandatory for majors.

Importance of statistics in psychology, probability and probability distributions, binomial and normal distributions, characteristics of distribution, measures of central tendency and dispersion, sampling and hypothesis testing, parametric Statistics, (t), (f) and chi-square tests, analysis of variance, correlation and regression, non-parametric statistics.

The designing of experiments in psychology in the light of the above, the variation of factors and observation of changes in responses, interpretation of results based on experimental design and application of the relevant statistics.

Lectures: three hours a week, two semesters.

Laboratory: three hours a week, two semesters.

348.1 PSYCHOLOGY OF SEX ROLES

I. Lenzer

Prerequisites: Psychology 201.0 or permission of the Department.

An examination of the psychology of sex role differences; sex role identity as determined by biological and environmental factors; discussion of sex role behaviour among animals; theories as they relate to sex role differentiation, e.g., the psychoanalytic and social learning theory.

Lectures: three hours per week, one semester (first semester).

349.2 DRUGS AND BEHAVIOUR

I. Lenzer

Prerequisites: Psychology 201.0 or permission of the Department.

Effects of psychoactive drugs on normal and abnormal behaviour and on consciousness, explanation in terms of brain functioning, discussion of methods used in the study of drug effects on animals and man.

PSYCHOLOGY

Lectures: three hours per week, one semester (second semester).

***402.0 PSYCHOLOGY OF SENSATION AND PERCEPTION**

Prerequisites: Psychology 305.0 or the permission of the Department.

A panoramic view of all the senses and their interaction. Emphasis will be placed on the perceptual rather than on the sensory aspect.

Lectures: two hours a week, two semesters.

Laboratory: two hours a week, two semesters.

***403.0 PSYCHOLOGY OF MOTIVATION**

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

A study of the impelling factors in behaviour: instincts, needs, drives and incentives; behavioural and physiological components of hunger, thirst, sex aggression and curiosity; an ethological examination of the biology of human and animal behaviour.

Lectures: three hours a week, two semesters.

Laboratory: two hours a week, two semesters.

***404.0 INTRODUCTION TO PHYSIOLOGICAL PSYCHOLOGY**

I. Lenzer

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

Physiological and neural mechanisms of behaviour, the sensory systems, altering mechanism, sleep arousal and attention. Physiological basis of learning, memory, motivation and emotion, physical control of the mind through electrical stimulation of the brain, physical control of the mind through drugs.

Lectures: three hours a week, two semesters.

Laboratory: two hours a week, two semesters.

410.0 SOCIAL PSYCHOLOGY

Prerequisites: Psychology 201.0, Psychology 305.0 or any 300 level Sociology.

Motives, attitudes, conformity, communication, group structure and leadership; aggression, person perception, methodology, social psychology in international affairs. In addition to the above any topic of interest to the students or to the teacher may be discussed in the class as part of this course. A project will be undertaken by students working individually or together.

Lectures and Laboratories: three hours a week, two semesters.

PSYCHOLOGY

411.0 INDUSTRIAL AND APPLIED PSYCHOLOGY

V. Catano

Prerequisites: Psychology 305.0 or the permission of the Department.

The application of psychological concepts to behavioural problems encountered in the work environment. Topics will include organizational structure, personnel selection, placement and training, leadership, human performance and capacity, motivation and morale, consumer psychology and how modern technology and organizations affect human behaviour.

Lectures: three hours a week, two semesters.

412.0 COGNITIVE PROCESSES

V. Catano

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

An examination of the processes by which sensory inputs are transformed, reduced, elaborated, stored, recovered and used. The course may include topics such as contemporary theories of perception and memory, psycholinguistics, computer simulation of cognitive processes, models of information processing, concept learning and formation, and decision making processes.

Lectures: two hours a week, two semesters.

413.0 ARCHITECTURAL AND ENVIRONMENTAL PSYCHOLOGY

J. Darley

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

The functions of buildings and the role of the architect in society. The criteria for building design, human performance, comfort, stimulation; curiosity and arousal in building environments. Perception of space, personal and movement space, territoriality. Lighting: apparent brightness, gloom, glare; acoustics: noise and stress, speech interference, distraction; thermal environment; temperature and arousal, behaviour under heat stress; perception of the city: cognitive maps, the sonic environment, visual complexity; the street and its social functions; Stress in the urban environment: Calhoun's rats and the rat race.

Lectures: three hours a week, two semesters.

***421.0 HISTORICAL AND CONTEMPORARY SYSTEMS OF PSYCHOLOGY**

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

Greek Psychology, Arabian and West European developments, mediaeval and renaissance approaches, early scientific influences: ideas from physics, mathematics and physiology. Nineteenth and twentieth century theories and experiments; psychology as a natural,

biological and social science.

The basic issues: classical and scientific psychology, voluntary and involuntary behaviour, respondent and operant behaviour, choice and preference, drives and values, uncertainty and information, intelligence, symbolic processes and language, problems of measurement and evaluation, organization and evaluation.

Lectures: three hours a week, two semesters.

431.0 CHILD PSYCHOLOGY AND ADOLESCENT DEVELOPMENT K. Konrad

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

Research methodology in child development, theories of behaviour and development, prenatal development, the Neonate, Maturation and Learning, nature versus nurture, the development of intelligence and personality, psychological assessment of children, problems of early life, pathological versus normal development, puberty, changes and problems of adolescence.

Lectures: three hours a week, two semesters.

432.0 CLINICAL PSYCHOLOGY

Prerequisites: Psychology 301.0 and 305.0.

Mental illness and mental health, normal and abnormal behaviour, origin, development, symptoms and cures of certain behaviour disorders, neurosis and psychosis, psychological and physiological factors as joint causes of psychological problems, counselling, psychotherapy, behaviour therapy, group therapy, mental retardation. Functions of mental hospitals, child guidance clinics, psychotherapists and psychiatrists.

Lectures: three hours a week, two semesters.

433.0 PSYCHOLOGY OF PERSONALITY

Prerequisites: Psychology 301.0 and 305.0 or the permission of the Department.

Genetic-constitutional, familial, social class and cultural factors of personality. The main approaches to personality assessment. Major personality theories such as those by Freud and Rodgers, and the trait, factor-analytic and learning theory approaches. Empirical research on such topics as the achievement motive.

Lectures: three hours a week, two semesters.

440.0 EDUCATIONAL AND PSYCHOLOGICAL TESTS AND MEASUREMENTS R. Konopasky

Prerequisites: Psychology 301.0 and 305.0.

Basic principles: statistical sampling and testing, psychological measurement and the construction of scales; test construction:

PSYCHOLOGY—RELIGIOUS STUDIES

standardisation, validity, reliability; types of tests in common use: intelligence, aptitude, ability, personality, educational, vocational; special tests: language, clerical, perceptual, speed, and vocational selection, diagnosis and follow-up.

449.0 SENIOR SEMINAR

All Staff

Prerequisites: senior standing and permission of the Department. Applications for this course should be made in March of the junior year.

An individual reading and/or research course in an area of psychology selected jointly by the student and his staff advisors. This is a required course for fourth year honours students.

Laboratory and seminar: three hours per week, two semesters.

549.0 HONOURS SEMINAR

Prerequisite: fifth year honours standing.

An individual research course in an area of psychology selected jointly by the student and his staff advisor. It is expected that the student will produce an honours thesis based on his work in this course. The course is required for fifth year honours students.

Laboratory and Seminars: six hours per week, two semesters.

RELIGIOUS STUDIES

E. Stiegman

S.A. Armstrong

D. Clarke

G.R. Hoffman, S.J.

P. Kerans, S.J.

L.F. Murphy, S.J.

M. Waida

Associate Professor, Chairman

Assistant Professor

Assistant Professor

Associate Professor

Associate Professor

Assistant Professor

Assistant Professor

The purpose of university studies in religion is to analyze the meaning of religion in human experience and to investigate its role in personal and social structures. In this pursuit it employs the perspectives afforded by numerous other disciplines, e.g., anthropology, art, history, literature, philosophy, psychology, sociology — as well as those afforded by its own — ascetics, liturgics, mythology, theology, and others.

The Department of Religious Studies offers its courses in terms of three general areas:

RELIGIOUS STUDIES

Religion in Western Civilization
History of Religions (Comparative Religion)
Religion in Contemporary Society

Complete details of the arts degree programme with a concentration in Religious Studies are available to students in the departmental office. Individual, specialized guidance and instruction are available to students of proven academic ability.

Some of the courses listed below which are taught by members of this department are marked as cross-listed in other departments. Students taking such courses are normally allowed to count the course as a credit in whichever of the departments they choose. Students who wish to count such a course towards a major in another department should double check with that department.

All courses, unless otherwise specified, are two semester courses, have no prerequisites, and provide for group discussion.

Because the largest number of students enrolled in religious studies courses at all levels are non-majors, a few notes on the department's interpretation of the numbering system may be helpful. We offer four levels of courses: 100.0, 200.0, 300.0, 400.0. The 100.0 level course provides a general introduction to the whole field of religious studies. The 200.0 level courses provide foundations for the three general areas of our programme. The 300.0 level courses provide work in particular areas of more special interest. The 400.0 level course provides independent, guide study for students of proven ability. We recognize that a non-major's interest in religious studies may be restricted to a particular area and that he may have room for only one or two courses in our department; consequently, the introductory and foundational courses are not prerequisites for the 300.0 level courses. A student may take courses at any level regardless of his year with these restrictions: freshmen will not normally be allowed in courses above the 200.0 level, and sophomores will not be allowed in the 400.0 level.

COURSES

100.0 THE RELIGIOUS DIMENSION OF HUMAN LIFE: INTRODUCTION TO RELIGIOUS STUDIES

S. Armstrong, P. Kerans

There are many common life experiences (for instance, the encounter with death, suffering, loneliness, the quest for personal identity, sexuality, wonder, good and evil) which most men and women have sought to address in the context of an organized religion. In addition to studying these experiences which point toward the religious dimension in human life and the ways in which several religions have dealt with them, we shall also look at some secular approaches to the same experiences.

RELIGIOUS STUDIES

201.0 BELIEF AND UNBELIEF E. Stiegman, D. Clarke

Does God exist? The apparent contradiction of faith and reason, the problem of intellectual responsibility in any "leap" to faith. Is a faith necessary to man? Can there be a natural theology? Can we demythologize the Bible? Consideration of the principal authors who discuss the problem of belief.

202.0 INTRODUCTION TO THE BIBLE D. Clarke

A critical approach to the Bible, involving an inquiry into the cultural and historical context of biblical literature; the meaning and relevance of the Bible for modern man.

210.0 CHRISTIANITY IN MODERN CIVILIZATION: 1521 - TODAY L.F. Murphy, S.J.

Questions arising from the history of Christianity in the reformation and modern periods. Martin Luther: reformer of medieval superstition or destroyer of European unity? John Calvin and the rise of capitalism, the radicals, Henry VIII and Elizabeth, Puritans and religious freedom. The French revolution and the attack on Christianity, science, liberalism, and marxism and the modern critique of Christianity. The de-christianization of contemporary culture.

230.0 THE MEASURE OF MAN S. Armstrong

Who am I? Who do the "experts" say I am? Who do I think, feel, wish, fear I am? Am I one or many? Am I alone?

Scientists, historians, psychoanalysts, artists, philosophers, theologians have struggled with these and related questions. We will seek the relevance of their views of what man is to our own questioning of who we are.

238.0 PROBLEMS IN CONTEMPORARY ROMAN CATHOLICISM L.F. Murphy, S.J.

The Catholic Church is undergoing perhaps the greatest crisis in its history. Can the Church survive? Has it lost its soul? Why has it changed? What does it teach today? What contribution can it make to modern man? A general introduction to the Catholic crisis after Vatican II. Problems to be treated include: atheism and belief, social justice and revolution, the new morality, change in dogma, ecumenism, birth control, priest and layman, freedom of conscience and authority, the pentecostals, war and peace.

RELIGION IN WESTERN CIVILIZATION

304.0 THE CHURCH G.R. Hoffmann, S.J.

A study of the nature of the Church, especially through a study of its emergence and place in salvation history. The course will consist of a fair amount of class discussion and will concentrate on those areas of particular interest to the students.

RELIGIOUS STUDIES

305.0 DRAMA AND RELIGION (Cross-listed as English 306.0) E. Stiegman

A close reading of great plays from world literature, emphasizing Greek tragedy, Shakespeare, and the modern stage. The course strives for an awareness of religious dimensions in the fictional universe which every play creates, and of the mythical character of the play's central action. Attention is drawn to the origin of both classical and modern drama in religious ritual, and to the dramatic essence of Judaism and Christianity as religions of event.

Lectures: three hours per week

306.0 MYTH AND HISTORY: THE PROBLEM OF INTERPRETING HUMAN EXISTENCE

S. Armstrong, R. Bollini

Prerequisite: One university history course or consent of the instructor.

Man's search for meaning. The life of man in relation to his past and that of his communities; the question put to Marc Bloch; "Papa, what good is history?" Students in this course coregister in History 334.

308.0 TOWARDS THE REFORMATION G.R. Hoffmann, S.J.

Problems — political, intellectual and religious — which originated in early mediaeval Christendom, reached their climax in the middle ages, and resulted in the reformation. Students will see that the times were ripe for a sweeping revolution. Western Christendom was torn asunder. What made this possible? And what is the significance of that split for us today, who must live with it?

313.0 JESUS OF NAZARETH

L.F. Murphy, S.J.

Jesus of Nazareth: God, man and/or superstar? Did Jesus really exist? What did he teach? Was he a radical revolutionary? An impractical dreamer? Why was he killed? What does the resurrection mean? Does his ethical teaching have any challenge or meaning for us today? Many answers have been given to Jesus' question, "Who do men say that I am?" An examination of the views of some representative modern scholars with an analysis of the texts on which their views rest.

HISTORY OF RELIGIONS (COMPARATIVE RELIGION)

321.0 PRIMITIVE RELIGIONS IN ASIA

M. Waida

A study of the primitive religions among (1) hunters and food-gatherers in Australia, and (2) agriculturalists in Indonesia and Melanesia. Various modern theories of myth and mythic thought will be correlated with readings and interpretations of specific myths and symbols in Asian communities. In the second semester the course will concentrate on a study of various types of cosmogonic myths, their meanings and functions in Asian societies.

RELIGIOUS STUDIES

323.0 THE RELIGIONS OF INDIA M. Waida

The Indus civilization: religion and philosophy of the Vedas, Brahmanas, and the Upanishads, Yoga mysticism and its influence on Buddhism, the Bhagavad-Gita, bhakti motifs, myths, and symbols of Hinduism and Buddhism as they are expressed in written documents, visual arts, and other cultural creations. Some methodological problems relating to the study of Indian religions will also be discussed.

324.0 THE RELIGIONS OF CHINA M. Waida

A study of Chinese religious traditions from the Shang period to the present, i.e., Confucianism, Taoism, and Buddhism. Special emphasis will be placed on Taoism, its history and structure as expressed in the Lao Tzu and the Chuang Tzu, and its close connections with other religious complexes such as Chinese mythology, shamanism, folk religions, and alchemical techniques for attaining immortality as exemplified, for example, in the *Pao-P'u Tzu* and the *Secret of the Golden Flower*.

RELIGION IN CONTEMPORARY SOCIETY

315.0 THE CHRISTIAN IN SOCIETY P. Kerans

What sense does it make to speak of a Christian response to social and political problems in present-day Canada? An examination of the impact of earlier Christian groups on Canadian life, e.g., the Winnipeg General Strike of 1919, the Antigonish Movement, and the theology that led them to act. An analysis of at least one contemporary national problem and one local problem with respect to a possible Christian response.

340.0 SOCIAL ETHICS: MAN AND FREEDOM IN A TECHNOLOGICAL SOCIETY P. Kerans

Is technological man a myth or a reality? Is the technological society a threat to freedom or the context for a new participatory society? How can the world be made free for man and man free for the world? What is the place of fantasy and festivity in technocracy? What religious and ethical resources are important for the creation of a humanized society? How ought we to live? Can we survive?

345.0 THEOLOGY OF LOVE AND SEXUALITY D. Clarke

This course will explore man's self-understanding in the areas of love and sexuality from a theological perspective, but one which is broadened and deepened through recourse to the insights offered by philosophy, sociology, psychology, art, and history. The scriptures of various religions will be the focus for an exploration of how man has responded to the comedy and sublimity of his embodied being. Topics to be discussed are: the cultural history of love, sexual ethics and the new morality, the myth of sexual roles,

RELIGIOUS STUDIES—SOCIOLOGY

psychological insights on sexuality, alternative styles of marriage, and the family.

347.1 THEOLOGY OF WORLDLY REALITIES E. Stiegman

The other-worldliness of religion creates a difficulty for the man or woman who feels that life must be lived in this world. The course asks how religion in general, and Christianity in particular, views man's relation to the world. How should man learn to think about himself and about nature, so as to satisfy more fully the most basic needs of his body, mind, and spirit? The student is helped to become aware of the new possibilities implicit in man's scientific knowledge and of the new responsibilities that come with his technological power.

Lectures: three hours per week, one semester (may be continued into 348.2)

348.2 GOD IN SECULAR EXPERIENCE E. Stiegman

Is Christian life altogether different from human life? Or can one discern the action of God in the sheer process of human maturing? The student is led to inquire whether ordinary human life is ordinary at all, or whether it is the field of a dramatic conflict between forces of self destruction and powers of creativity and new life.

Lectures: three hours per week, one semester

400.0 SPECIAL TOPIC Staff

Prerequisite: permission of the Chairman is required.

Students will choose a theme or movement in collaboration with a member of the department and pursue it through specialized readings and tutorials.

SOCIOLOGY

Ronald Cospér	Assistant Professor, Chairman
M. Patricia Connelly	Lecturer
Walter Friedman	Assistant Professor
Sandor Halebsky	Associate Professor
Brian Joseph	Lecturer
Daniel MacInnes	Lecturer
Judith Park	Lecturer
David Perrier	Lecturer
Jannie Poushinsky	Lecturer
Helen Ralston	Assistant Professor
Linda Ruffman	Assistant Professor
George Zollschan	Visiting Associate Professor

SOCIOLOGY

In order to graduate with a major in sociology, a student must be admitted to the programme, meet all course requirements, and maintain an average of C or more in his sociology courses.

Normally, a student is admitted to standing as a sociology major during the second semester of his introductory course. To major in sociology, a student must get credit for Introductory Sociology, usually taken in the sophomore year; Research Methods and Sociological Theory, normally taken in the junior year; and Modern Sociology, taken in the senior year. In addition, a sociology major must take a minimum of three other courses from allied fields (anthropology, economics, political science, psychology), at least one of which must be on the 300 or 400 level. There is an Honours Programme in sociology which follows general university requirements. Each Honours student's programme is supervised by the department.

Note: courses are all the equivalent of three hours per week per academic year, although specific course schedules are decided by the department.

Courses starred with an asterisk will not be offered in 1973-74.

200.0 INTRODUCTORY SOCIOLOGY Staff

Prerequisite: none. The course is open to freshmen in any faculty and to sophomores in the Arts faculty. This is the required introductory course for a major in sociology.

An introductory study of sociological perspectives, basic sociological concepts, man's interaction and organization in society, particularly in modern Canadian society, and the relationship between sociological theory and research; analysis of major social institutions and of major trends in society, e.g. familial, religious, educational, economic and political.

201.0 INTRODUCTION TO SOCIOLOGY Staff

Prerequisite: none. The course is open as an elective to students in the non-Arts faculties and to juniors and seniors in Arts.

A course designed specifically for students who will not be sociology majors. This course uses sociological analysis to examine a variety of social phenomena. It will focus on such things as social interaction, social institutions, organizational structures and social change.

300.0 RESEARCH METHODS D. Perrier, T.B.A.

Prerequisite: one sociology course.

An examination of the basic methods and techniques employed at various stages in social research. Topics to be discussed include selecting a research problem, research designs, methods of data collection, analysis and problems of measurement. Practical experience will be provided by means of a research project.

SOCIOLOGY

301.0 SOCIOLOGICAL THEORY

G. Zollschan, T.B.A.

Prerequisite: one sociology course.

A critical examination of some classical statements in sociological theory, giving particular emphasis to key concepts in the development of contemporary notions in sociological analysis. The circumstances giving rise to sociology as a special field are considered, as are the relationships of specific theorists and their ideas to modern times.

302.0 SOCIAL PROBLEMS INVOLVING DISORGANIZATION AND DEVIANCE

Prerequisite: one sociology course.

An analysis of factors generating social disorganization in contemporary society focussing on minority groups, such as blacks, women and Indians, and on the poor. The course also considers the dynamics of varieties of deviant behaviour, as in organized crime and juvenile delinquency.

303.0 CRIMINOLOGY

D. Perrier

Prerequisite: one sociology course.

An analysis of criminal deviance which examines theories of its genesis, social definition, maintenance, control, and social consequences. The course is intended to give students an opportunity to examine major theoretical and methodological issues in the study of crime and crime control.

***305.0 SOCIAL AND ECONOMIC DEVELOPMENT**

Prerequisite: one course in sociology or economics.

The application of sociological principles to problems of the third world, economic development and urbanization. Problems in the transition from agrarian to urban societies.

306.0 SOCIOLOGY OF EDUCATION (EDUCATION 507.0)

H. Ralston

Prerequisite: two or more sociology courses, or for students in Education.

The structural dynamics of educational systems in different societies, with special emphasis on Canadian society. The main focus will be upon the nature of the relationship between the educational institutions and the wider social systems and the implications of this relationship for future educational alternatives.

308.0 URBAN SOCIOLOGY

S. Halebsky

Prerequisite: one course in sociology.

An analysis of different ways in which sociologists approach the city: the historical and comparative approach, human ecology, urban and suburban interaction, informal urban social structures, community

SOCIOLOGY

and power structure. Emphasis is on theory and research and their application to selected problems in the metropolitan area.

311.0 POPULATION

Prerequisite: one sociology course.

Patterns, determinants and consequences of population size, growth, composition, distribution, fertility, mortality and migration.

313.0 SOCIOLOGY OF KINSHIP AND FAMILY

Prerequisite: one sociology course.

Cross-cultural analysis of family and changing family patterns, relationship between family and other institutions, appropriate roles and patterns of interaction at each stage of family life-cycle, presented from a sociological perspective with emphasis on theoretical and methodological issues.

***316.0 ORGANIZATION THEORY AND BUREAUCRACY**

Prerequisite: one sociology course.

An examination of the formal structure and bureaucratic organization of systems of modern society. Organizational theory in relation to occupational, professional, industrial, and work situations.

***317.0 SOCIOLOGY OF RELIGION (RELIGIOUS STUDIES 317.0)**

Prerequisite: one sociology or religious studies course.

Analysis of the nature of the sociological study of religion and of its theoretical development. The relationship between religion and society. Applications of the major theoretical concepts of the contemporary religious situation.

***318.0 SOCIAL CHANGE**

Prerequisite: one sociology course.

This course has two objectives: to present a sociological view of history and to introduce the student to the more important theories of the form, causes and processes of social change.

***319.0 SOCIALIZATION**

Prerequisite: one sociology course.

An analysis of the mechanisms by which individuals acquire the necessary attributes, values and skills for adequate functioning in society. A major concern of the course will be to analyze the processes which operate to cause both conformity and deviance within a particular culture and social system. The course will also include a sociological analysis of some of the main socializing agents in society - mass media, schools, family, reference groups, peer groups.

321.0 CANADIAN SOCIETY

Prerequisite: one sociology course.

An examination of the institutional framework and value basis of Canadian society. Topics to be discussed include ethnic composition, class structure, economic and political institutions, and industrialization. A broad spectrum of social problems confronting Canada will also be looked at.

322.0 POLITICAL SOCIOLOGY

S. Halebsky

Prerequisite: one sociology or political science course.

Prevailing theories of radical or dissident behaviour will be assessed critically and alternate emerging approaches suggested. Protest and radical movements in Europe, Latin America, and elsewhere will be considered. The latter portion of the course will be of a seminar character, based partly on student papers.

323.0 THE INDIVIDUAL AND SOCIETY

J. Poushinsky

Prerequisite: one sociology or psychology course.

The course will emphasize the development of the self in society with particular reference to role theory, symbolic interaction, reference groups, motives, influence, conformity, social performance and group structure.

*324.0 SOCIAL STRATIFICATION

Prerequisite: one sociology course.

An analysis of the main features of social inequality in modern industrial societies: the distribution of power and wealth, the existence of 'power elites' or 'governing classes', comparative community power structures, the institutionalisation of class conflict, problems of social mobility, the political expression of class and status groups. Also a critical examination of varying sociological perspectives on stratification, both classical (Marx, Weber) and contemporary (functionalist and conflict theorists).

327.0 SOCIAL POLICY

D. Clairmont

Prerequisite: one sociology course.

Focus on the various issues and areas of decision-making for policy makers in which sociological theory and research have made or could make some contribution. Also an examination of the channels and strategies through which policy is effected.

*332.0 STUDIES IN SELECTED SOCIETIES AND CULTURES

Prerequisite: one sociology course.

An in-depth study of the societal organization, institutions, customs and life styles of a particular country or area of the world. Areas

SOCIOLOGY

may vary from year to year and will be chosen according to student interest, interdisciplinary programmes, and available faculty.

***335.0 QUANTITATIVE METHODOLOGY**

Prerequisite: introductory sociology or permission of instructor.

A course designed to introduce students to basic sociological statistics and computer programming.

401.0 SELECTED STUDIES IN SOCIOLOGICAL THEORY

Prerequisite: Sociology 200.0, 300.0, and 301.0 or permission of the instructor.

A seminar course which examines selected theoretical issues in sociology.

402.0 PHILOSOPHY OF THE SOCIAL SCIENCES

G. Zollschan

Prerequisite: permission of the instructor.

A seminar course on basic assumptions and concepts used in the social sciences - particularly sociology and allied fields. Open to students in philosophy and the social sciences with permission of the instructor.

403.0 SELECTED STUDIES IN SOCIOLOGICAL ANALYSIS

R. Cospers, L. Ruffman

Prerequisite: Sociology 200.0, 300.0 and 301.0, or permission of the instructor.

A senior course which examines selected methods of analysis in sociology.

405.0 SELECTED TOPICS IN SOCIAL ORGANIZATION:

COMPARATIVE URBANIZATION S. Halebsky

Prerequisite: Sociology 200.0, 300.0, and 301.0, or permission of the instructor.

A seminar for advanced students. The course will focus on the characteristics and processes of urbanization in developing societies. Attention will be given to some of the properties of urban migration and city growth. In addition, consideration will be given to the demographic, social, cultural, and political properties of the new urban populations, the dilemmas of urban growth, and the relationship of the urban centers to the broader society. Areas of disagreement in the literature and issues in research will be noted. Major attention will be given to Latin America, though some reference to other geographic areas will be made.

430.0 MODERN SOCIOLOGY

L. Ruffman, T.B.A.

Prerequisite: open only to senior majors in sociology.

SOCIOLOGY—WEST EUROPEAN STUDIES

Issues in contemporary sociology are examined. The course emphasizes student participation and development.

***451.0 SELECTED STUDIES IN SOCIOLOGICAL THEORY**

Prerequisite: Sociology 200.0, 300.0 and 301.0, or permission of the instructor.

A seminar course which examines selected theoretical issues in sociology.

***453.0 SELECTED STUDIES IN SOCIOLOGICAL ANALYSIS**

Prerequisite: Sociology 200.0, 300.0 or 301.0, or permission of the instructor.

A senior course which examines selected methods of analysis in sociology.

***455.0 SELECTED TOPIC**

Prerequisite: Sociology 200.0, 300.0, and 301.0 or permission of the instructor.

A seminar course which examines selected topics within an area of specialization and enables a student to study a particular sociological problem in detail.

530.0 HONOURS SEMINAR

Staff

Prerequisite: enrollment in Honours Programme.

The purpose of this seminar is to help students prepare a major research paper on a topic agreeable to both the student and the department.

WEST EUROPEAN STUDIES

West European Studies offers a coherent programme in the humanities and certain social sciences with an emphasis on language skills and a specialized general knowledge of West European affairs and their relations to North America. The programme seeks to establish a modern context for a concentration in the humanities and to produce graduates suitable to the recruitment needs of public service, trade, industrial, union and commercial organizations concerned with Western Europe or associated institutions such as NATO or the EEC

Students graduating from the programme will have a thorough grounding in at least one major West European language other than English as well as a specialized acquaintance with the political and

WEST EUROPEAN STUDIES

economic affairs of the region and a particular interest in the thought, history, or literature of Western Europe. Since graduate departments in European Studies exist already in Canada and elsewhere, students interested in graduate studies need be at no disadvantage.

REQUIREMENTS

There are five basic requirements.

1. Two courses above the elementary level in one modern language other than English.
2. One course in economics and in political science to be selected from the prescribed electives.
3. Three of the courses taken within the major concentration should deal with Western Europe or with principles directly relevant to comparative studies concerning Western Europe.
4. Each student will prepare a senior paper in the final year. The subject will be set by the faculty members concerned.
5. A special, obligatory seminar will be convened four times in the initial year of the programme to hear and discuss papers presented by students enrolled in the area studies courses.

LIST OF ELECTIVES

Any students wishing to enroll in the programme are encouraged to discuss their selection of courses with the co-ordinating Chairman: Dr. C.J. Terry, of the English Department.

CLASSICS

- 120.0 The Classical Civilization of Greece and Rome
- 303.0 History of Greece
- 304.0 History of Rome
- 305.0 Hellenistic History

ENGLISH

- 300.0 Comparative Literature: Europe
- 301.0 The Modern Novella
- 304.0 The Development of Drama in the Theatre
- 413.0 Anglo-Irish Literature

MODERN LANGUAGES

FRENCH

- 100.0 Introduction to the French Language
- 102.0 Oral and Written French
- 200.0 Intermediate Oral and Written French
- 220.0 Advanced Intermediate French

WEST EUROPEAN STUDIES

	300.0 The Principal Themes of French Literature
	301.0 Advanced Conversation and Cultural Studies
GERMAN	100.0 Introduction to the German Language
	200.0 Intermediate German
	250.0 German Literary Prose
	300.0 Modern German Literature
SPANISH	101.0 Introduction to the Spanish Language
	201.0 Elementary Spanish
	300.0 Spanish Culture and Civilization
	302.0 Prose and Stylistics
HISTORY	121.0 Civilization in the West
	124.0 A History of Britain, 1066 to the Present
	203.0 The Twentieth Century
	204.0 Europe 1815 - 1945
	306.0 Monarchy and Revolution
	311.0 Medieval England
	313.0 Europe 1815 - 1870
	314.0 Europe 1870 - 1945
	341.0 Britain in the Twentieth Century
	501.0 The Puritan Revolution
RELIGIOUS STUDIES	202.0 Introduction to the Bible
	210.0 Christianity in Modern Civilization
+SOCIOLOGY	301.0 Sociological Theory
+POLITICAL SCIENCE	306.0 Comparative Systems of Government
	553.0 Seminar in International Studies
+ECONOMICS	101.0 Economic History of Europe
	313.1 International Finance
	314.2 International Trade

+Special arrangements have been made with the Sociology, Political Science and Economics Departments in the matter of prerequisites for these courses.

**BOARD OF GOVERNORS
ACADEMIC SENATE
FACULTY
ADMINISTRATION**

ST. MARY'S UNIVERSITY BOARD OF GOVERNORS

Chairman

Mr. Austin E. Hayes

Members Ex-Officio

Chancellor: Most Reverend James M. Hayes, J.C.D., D.D.
Vice Chancellor: Reverend Monsignor Colin Campbell, V.G.
President: Dr. D. Owen Carrigan
Academic Vice-President: Dr. D. Hugh Gillis
Vice-President, Finance and Development: Mr. Edmund Morris

Members Appointed by the Roman Catholic Episcopal Corporation

Mr. Robert B. Cameron, D.S.O., LL.D.	August 1, 1970 to July 31, 1973
Mr. Austin E. Hayes	August 1, 1970 to July 31, 1973
Reverend Lloyd Robertson	August 1, 1970 to July 31, 1973

Members Elected by the Alumni Association

Mr. K.P. Bendelier	August 1, 1972 to July 31, 1975
Mr. Arthur Flynn	August 1, 1972 to July 31, 1975
Mr. L.J. Hayes	August 1, 1970 to July 31, 1974
Mr. D.F. Murphy, Q.C.	August 1, 1970 to July 31, 1973
Dr. R.W. Napier	August 1, 1970 to July 31, 1973
Mr. J. Philip Vaughan	August 1, 1970 to July 31, 1974

Members Elected by the Academic Staff

Prof. R.H. Crowther	August 1, 1972 to July 31, 1975
Dr. F.J. Dockrill	August 1, 1972 to July 31, 1975
Dean G.B. Hallett	August 1, 1971 to July 31, 1974
Dr. J.R. MacCormack	August 1, 1971 to July 31, 1974
Dr. A.P. Monahan	August 1, 1970 to July 31, 1973
Reverend W.A. Stewart, S.J.	August 1, 1970 to July 31, 1973

Members Elected by the Students

Mr. Harley D'Entremont	January 1, 1972 to July 31, 1973
Mr. K.T. Langille	January 1, 1973 to July 31, 1973
Mr. Lennox Phillips	January 1, 1972 to July 31, 1973
Mr. G.B. Spinney	January 1, 1973 to July 31, 1973

Members Appointed by the Upper Canada Province of the Society of Jesus

Reverend M.J. Belair, S.J.	August 1, 1972 to July 31, 1973
----------------------------	---------------------------------

Members Elected by the Board of Governors

Mr. John Coleman, LL.D.	November 10, 1970 to July 31, 1973
Mr. Ralph T. Vaughan, LL.D.	November 10, 1970 to July 31, 1973
Mr. Joseph Zatzman	November 10, 1970 to July 31, 1973

Members Appointed by the Lieutenant-Governor in Council

Mr. R.W. Ferguson	March 1, 1972 to February 28, 1975
Mr. D.F. Jones, Q.C.	March 1, 1972 to February 28, 1975

ACADEMIC SENATE

Members Ex-Officio

Dr. D. Owen Carrigan, President, *Chairman*
Dr. D. Hugh Gillis, Academic Vice-President
Dr. Dennis E. Connelly, Dean of Commerce
Dr. William A. Bridgeo, Dean of Science
Prof. George B. Hallett, Dean of Arts
Prof. Donald Warner, Dean of Engineering
Dr. Donald J. Weeren, Dean of Education
Mrs. Ruth Hafter, Librarian
Mr. Kenneth P. Bendelier, Dean of Students
Mr. Kevin J. Cleary, Registrar

Members Elected

To June 1973

Prof. Roger H. Crowther
Dr. Frederick J. Dockrill
Dr. Arthur P. Monahan
Prof. William A. Stewart, S.J.
Prof. Harold J. Schroeder

To June 1974

Dr. J. Geoffrey Harrison
Dr. Ernest R. Hayes
Prof. David A. Hope
Dr. John R. MacCormack
Prof. Dermot L. Mulrooney

To June 1975

Dr. Elizabeth V. Haigh
Prof. Daniel W. MacInnes
Prof. Kenneth A. MacKinnon
Dr. George F. Mitchell
Prof. Arthur Murphy

Student Senators

Bryan Duffy
Don Hoyt
Ken Langille
Jim Sullivan
Margaret MacEachern

FACULTY 1972-73

PROFESSORS EMERITUS

M.W. Burke - Gaffney, S.J., Ph.D. (Georgetown)
Professor Emeritus in Astronomy

PROFESSORS

Harold G. Beazley, B.Comm. (Saint Mary's), D.Litt.
Professor of Business Administration

Stanislaw Bobr-Tylingo, D. es Lettres (Paris)
Professor of History

Theodore B. Ciuciura, Dr. Jur. (Munich)
Professor of Political Science

- O. Paul Cormier, M.B.A. (Harvard), C.A.
Professor of Business Administration
- William J. Dalton, Ph.D. (Ottawa)
Professor of Political Science
- J. Geoffrey Harrison, Ph.D. (Queens, Belfast)
Professor of English
- David Hope-Simpson, Ph.D. (McGill)
Professor of Geology
- John Loewenstein, Ph.D. (Vienna), F.R.A.I.
Professor of Anthropology
- John R. MacCormack, Ph.D. (Toronto)
Professor of History
- Arthur P. Monahan, Ph.D. (Toronto)
Professor of Philosophy
- James W. Murphy, S.J., Ph.D. (Toronto)
Professor of Chemistry
- Dangety S. Murty, D.Sc. (Andhra)
Professor of Physics
- Alfonso Rojo, D.Sc. (Madrid)
Professor of Biology
- Allan R. Sabeau, M.Sc. (McGill)
Professor of Chemistry
- William A. Stewart, S.J., Ph.L. (Immaculate Conception)
Professor of Philosophy
- Stanislas Swianiewicz, Dr. Jur. (Vilna)
Professor of Economics
- Joseph J. Vorstermans, Dr. Econ. (Tilburg)
Professor of Economics

ASSOCIATE PROFESSORS

- Richard H. Beis, Ph.D. (Notre Dame)
Associate Professor of Philosophy

- Robert J. Bollini, Ph.D. (California)
Associate Professor of History
- Robert G. Boyd, B.A. (Hons.) (Melbourne)
Associate Professor of Political Science
- Elizabeth A. Chard, M.A. (Dalhousie)
Associate Professor of History
- Ronald D. Connell, M.B.A. (Queen's), C.D.
Associate Professor of Business Administration
- Roger H. Crowther, M.A. (Cambridge)
Associate Professor of English
- Donald H. Davies, Ph.D. (Bristol)
Associate Professor of Chemistry
- Frederick J. Dockrill, Ph.D. (Dalhousie)
Associate Professor of Education
- Jacob Elhanan, Ph.D. (Hebrew)
Associate Professor of Chemistry
- T. Edward Flynn, Ph.D. (London)
Associate Professor of English
- Robert D. Foster, Ph.D. (Oregon)
Associate Professor of Economics
- Sandor Halebsky, Ph.D. (Cornell)
Associate Professor of Sociology
- Ernest R. Hayes, Ph.D. (MacMaster)
Associate Professor of Chemistry
- Dattatraya G. Kabe, Ph.D. (Wayne State)
Associate Professor of Mathematics
- B.M. Kapoor, Ph.D. (Delhi)
Associate Professor of Biology
- Karl W. Konrad, Ph.D. (Stanford)
Associate Professor of Psychology
- Guy Le Pierrès, Dip. d'Etudes Supérieures (Rennes), CAPES
Associate Professor of French
- Edward J. McBride, M.A. (Catholic U. of America)
Associate Professor of Political Science

- Kenneth A. MacKinnon, M.A. (Dalhousie)
Associate Professor of English
- Rowland C. Marshall, Ph.D. (Ottawa)
Associate Professor of Philosophy
- Urhan S. Merdsoy, M.S. (Rochester)
Associate Professor of Physics
- Roman Nahrebecky, Dr. Jur. (Prague)
Associate Professor of German
- M.J. O'Donnell, S.J., B.A. (Montreal)
Associate Professor of Latin
- Fernande Pepin, D. es Lettres (Laval)
Associate Professor of French
- Richard J.H. Perkyns, Ph.D. (London)
Associate Professor of English
- John E. Power, S.J., M.A. (Toronto)
Associate Professor of English
- Enriqueta Rojo, M.Sc. (Madrid)
Associate Professor of Biology
- Richard L. Ruth, Ph.D. (Wisconsin)
Associate Professor of Economics
- Lawrence Scobbie, M.Ed. (Edinburgh)
Associate Professor of Education
- Q.A. Siddiqui, Ph.D. (Leicester)
Associate Professor of Geology
- Kirtan P. Singh, Ph.D. (Penn. State)
Associate Professor of Mathematics
- Kurian K. Thomas, Ph.D. (Florida)
Associate Professor of Biology
- Franz V. Tomscha, M.Sc. (Johann-Wolfgang-Goethe)
Associate Professor of Physics
- Michael Wiles, Ph.D. (Leeds)
Associate Professor of Biology
- John C. O'C. Young, Ph.D. (London)
Associate Professor of Chemistry

George K. Zollschan, B.Sc. (Hons.) (London)
Visiting Associate Professor of Sociology

ASSISTANT PROFESSORS

S.M. Shahab Ahmad, Ph.D. (Glasgow)
Assistant Professor of Psychology

Carlos A. de Albuquerque, Ph.D. (Cambridge)
Assistant Professor of Geology

Robert N. Ansell, Ph.D. (Glasgow)
Assistant Professor of Philosophy

Stanley A. Armstrong, M.A. (Yale)
Assistant Professor of Religious Studies

Gamal A. Badawi, Ph.D. (Indiana)
Assistant Professor of Business Administration

Louis Batiot, M.A. (Massachusetts)
Assistant Professor of French

Vedat Baydar, D.Sc. (Istanbul)
Assistant Professor of Business Administration

Halina Bobr-Tylingo, Inzynier-rolnik (Warsaw)
Assistant Professor of Biology

Cyril J. Byrne, M.A. (Oxford)
Assistant Professor of English

Victor M. Catano, Ph.D. (Lehigh)
Assistant Professor of Psychology

Faith Chao, Ph.D. (Toronto)
Assistant Professor of Mathematics

Diana Clarke, M.A. (Catholic U. of America)
Assistant Professor of Religious Studies

Ronald Cospser, M.A. (Cornell)
Assistant Professor of Sociology

James A. Darley, Ph.D. (Western Ontario)
Assistant Professor of Psychology

Bernard E. Davis, Ph.D. (Mass. Inst. Tech.)
Assistant Professor of Education

- Ervin J. Doak, Ph.D. (Toronto)
Assistant Professor of Economics
- David L. DuPuy, Ph.D. (Toronto)
Assistant Professor of Astronomy
- Lilian Falk, Ph.D. (Harvard)
Assistant Professor of English
- Keith G. Fillmore, Ph.D. (British Columbia)
Assistant Professor of Physics
- Walter Friedman, Ph.D. (Pennsylvania)
Assistant Professor of Sociology
- Edrick H. Gift, M.Ed. (Ottawa)
Assistant Professor of Education
- Jack L. Ginsburg, Ph.D. (Rutgers)
Assistant Professor of Chemistry
- David A. Grantham, M.Eng. (N.S. Tech. C.)
Assistant Professor of Engineering
- Elizabeth V. Haigh, Ph.D. (Wisconsin)
Assistant Professor of History
- Betty L. Hanrahan, M.A. (Saint Mary's)
Assistant Professor of Education
- Denis Healy, M.Ed. (Columbia)
Assistant Professor of English
- Maryvonne Herivault, M. es Lettres (Orleans-Tours)
Assistant Professor of French
- David A. Hope, M.B.A. (Harvard)
Assistant Professor of Business Administration
- Joseph G. Jabbra, Ph.D. (Catholic U. of America)
Assistant Professor of Political Science
- Mo-Tak Kiang, Ph.D. (Dalhousie)
Assistant Professor of Mathematics
- Burkhard Kiesekamp, M.A. (Toronto)
Assistant Professor of History
- Henry C. Knight, B.A. (Bishop's) C.A.
Assistant Professor of Business Administration

- Robert J. Konopasky, Ph.D. (Windsor)
Assistant Professor of Psychology
- Henry Lackner, B.A. (Temple)
Assistant Professor of Philosophy
- Irmingard I. Lenzer, Ph.D. (Indiana)
Assistant Professor of Psychology
- Ronald C. Levesque, Ph.D. (Washington)
Assistant Professor of Political Science
- William Lonc, S.J., Ph.D. (St. Louis)
Assistant Professor of Physics
- Roger A. MacDonald, M.A. (Dalhousie)
Assistant Professor of English
- John Mackriss, M.A. (Toronto)
Assistant Professor of French
- L. Bruce Miller, S.T.M. (Union Theo. Seminary)
Assistant Professor of Religious Studies
- Wallace G. Mills, M.A. (Queen's)
Assistant Professor of History
- George F. Mitchell, Ph.D. (Toronto)
Assistant Professor of Physics
- Dermot L. Mulrooney, M.Eng. (N.S. Tech. C.)
Assistant Professor of Engineering
- Arthur Murphy, M.A. (Dalhousie)
Assistant Professor of French
- Lawrence F. Murphy, S.J., Ph.D. (Marquette)
Assistant Professor of Religious Studies
- Ranganathan Narayanan, M.Ph. (Yale)
Assistant Professor of Economics
- David H. Parkin, M.A. (Oxford)
Assistant Professor of English
- Shripad Pendse, Ph.D. (Stanford)
Assistant Professor of Business Administration
- David C. Pigot, M.A. (Dalhousie)
Assistant Professor of English

- Zahoorul H. Qureshi, M.B.A. (U.C.L.A.)
Assistant Professor of Business Administration
- Vintha R. Reddy, M.Eng. (N.S. Tech. C.)
Assistant Professor of Engineering
- Linda Ruffman, B.A. (Smith)
Assistant Professor of Sociology
- Harold J. Schroeder, M.B.A. (British Columbia)
Assistant Professor of Business Administration
- Andrew T. Seaman, M.A. (Dalhousie)
Assistant Professor of English
- Yash Pal Singh, Ph.D. (Birla Institute, India)
Assistant Professor of Mathematics
- J. Kennedy Snyder, M.A. (Brown)
Assistant Professor of English
- Emero S. Stiegman, Ph.D. (Fordham)
Assistant Professor of Religious Studies
- Mary Sun, Ph.D. (London)
Assistant Professor of History
- Christopher J. Terry, Ph.D. (Kent)
Assistant Professor of English
- Geraldine T. Thomas, M.A. (Dalhousie)
Assistant Professor of Classics
- Vincent McB. Tobin, M.A. (Dalhousie)
Assistant Professor of Classics
- Kathleen Tudor, Ph.D. (Toronto)
Assistant Professor of English
- Keith Vaughan, Ph.D. (St. Andrew's)
Assistant Professor of Chemistry
- Terrence A. Whalen, M.A. (Hons.) (Melbourne)
Assistant Professor of English
- G. Fred. W. Young, Ph.D. (Chicago)
Assistant Professor of History

LECTURERS

- Seymour M. Cott, M.A. (U.C.L.A.)
Lecturer in Anthropology
- Peter A. Dale, M.A. (McGill)
Lecturer in Political Science
- M. Susan DeMille, M.Ph. (Toronto)
Lecturer in Anthropology
- Bernd Ebel, M.A. (Alberta)
Lecturer in Economics
- Annabelle M. Edwards, B.A. (Hons.) (Birmingham)
Lecturer in Spanish
- Alejandro Estrada, M.A. (Escuela Nacional de Antropologia)
Lecturer in Anthropology
- Walter Finden, M.Sc. (Waterloo)
Lecturer in Mathematics
- Richard Chui M. Gee, M.B.A. (McGill)
Lecturer in Business Administration
- Colin D. Howell, M.A. (Dalhousie)
Lecturer in History
- Sheila E. Kindred, M.A. (Toronto)
Lecturer in Religious Studies
- Ronald G. Landes, M.A. (York)
Lecturer in Political Science
- Michael J. Larsen, M.A. (Dalhousie)
Lecturer in English
- Thomas A. Levy, M.A. (McGill)
Lecturer in Political Science
- Patricia Loiselle, M.A. (Dalhousie)
Lecturer in Sociology
- James Lowry, M.A. (Dalhousie)
Lecturer in Philosophy
- Daniel W. MacInnes, B.A. (Gonzaga)
Lecturer in Sociology

- Izhar Mirza, M.A. (Punjab)
Special Lecturer in Economics
- Robert L. O'Rourke, B.B.A. (St. Dunstan's)
Lecturer in Business Administration
- Judith A. Park, M.A. (Dalhousie)
Lecturer in Sociology
- David C. Perrier, M.A. (Dalhousie)
Lecturer in Sociology
- Jannie Poushinsky, M.A. (Guelph)
Lecturer in Sociology
- John H. Radford, B.Comm. (St. Mary's) C.A.
Lecturer in Accounting
- Vijay V. Raghavan, M.B.A. (McMaster)
Lecturer in Business Administration
- Brian S. Robinson, M.A. (Alberta)
Lecturer in Anthropology
- Porter Scobey, M.A. (Dalhousie)
Lecturer in Mathematics
- Manabu Waida, M.A. (Chicago)
Lecturer in Religious Studies
- Barry G. White, M.A. (Dalhousie)
Lecturer in Mathematics

ON LEAVE, 1972-73

- Janet Baker, M.A. (Queen's)
Assistant Professor of English
- Ronald H. Cameron, Ph.D. (London)
Assistant Professor of History
- Guy Chauvin, M.A. (Dalhousie)
Assistant Professor of Political Science
- George R. Hoffman, S.J. Ph. L. (Immaculate Conception)
Associate Professor of Theology
- Brian R.H. Joseph, M.A. (Toronto)
Lecturer in Sociology

- Patrick Kerans, S.J., S.T.L. (Innsbruck)
Assistant Professor of Theology
- Wai Ping Lam, M.B.A. (Michigan State), C.A.
Assistant Professor of Accounting
- Michael R. MacMillan, M.A. (Saint Mary's)
Assistant Professor of Education
- Michael J. Mooney, S.T.L. (Innsbruck)
Lecturer in Theology
- J. Patrick O'Neil, B.Comm. (Saint Mary's), C.A.
Assistant Professor of Accounting
- Francis R. Phillips, M.A. (London)
Associate Professor of Education
- Ingrid E. Poller, M.A. (Munster)
Lecturer in Mathematics
- Udayan P. Rege, M.A. (Pennsylvania)
Assistant Professor of Accounting
- Helen Ralston, R.S.C.J., M.A. (Boston C.)
Lecturer in Sociology
- James L. Ryan, B.Sc. (Saint Mary's)
Professor of Engineering

NEW APPOINTMENTS, 1973-74

- Elizabeth A. Chard, M.A. (Dalhousie)
Registrar
- Kevin J. Cleary, M.A. (Saint Mary's)
Assistant to the Administration
- Dennis E. Connelly, Ph.D. (Illinois)
Dean of the Faculty of Commerce
- J. Williams Cosman, M.A. (Toronto)
Director of Continuing Education
- John B. Owen, D.Phil (Oxford), F.R.H.S.
Dean of the Faculty of Arts
- Bryson R. Archibald, M.B.A. (Alberta)
Lecturer in Business Administration

William P. Boyle, Ph.D. (Queen's, Belfast)
Visiting Assistant Professor of Engineering

Donald J. Brean, M.B.A. (Toronto)
Lecturer in Business Administration

J. Ronald Collins, M.B.A. (Massachusetts)
Lecturer in Business Administration

Andre B. Corbeau, Ph.D. (Tulane)
Associate Professor of Business Administration

Ernest E.D. Day, Ph.D. (Sheffield)
Associate Professor of Geography

Stephen A. Davis, B.A. (New Brunswick)
Lecturer in Anthropology

Donald A. Fergusson, Ph.D. (Chicago)
Professor of Business Administration

Margaret R. Harry, M.A. (Manitoba)
Lecturer in English

Donald Higgins, M.A. (Wellington, N.Z.)
Lecturer in Political Science

Philip J. Kuntz, Ph.D. (Toronto)
Adjunct Associate Professor of Chemistry

Michael J.C. Martin, Ph.D. (Sheffield)
Visiting Professor of Business Administration

Ishmael O. Okraku, Ph.D. (Cornell)
Assistant Professor of Sociology

Michael A. Overington, M.A. (Wisconsin)
Assistant Professor of Sociology

George W. Patterson, Ph.D. (Alberta)
Assistant Professor of Modern Languages

Samuel D. Robinson, M.A. (Saskatchewan)
Assistant Professor of Education

Lawrence A. Schienbein, M.Sc. (Alberta)
Lecturer in Engineering

Philip A. Street, M.A. (York)
Lecturer in Psychology

Lewis R. Tucker, M.B.A. (Columbia)
Lecturer in Business Administration

FACULTY RETURNING FROM LEAVES - 1973

Ronald H. Cameron, Ph.D. (London)
Assistant Professor of History

Patrick Kerans, D. es Sc. Rel. (Strasbourg)
Associate Professor of Religious Studies

Michael R. MacMillan, M.A. (Saint Mary's)
Assistant Professor of Education

J. Patrick O'Neil, B.Comm. (Saint Mary's), C.A.
Assistant Professor of Business Administration

Francis R. Phillips, M.A. (London)
Associate Professor of Education

ADMINISTRATION

Officers:

President: D. Owen Carrigan, Ph.D.

Academic Vice-President: D. Hugh Gillis, Ph.D.

Vice-President, Finance and Development: Edmund Morris, B.A.

Academic Deans:

Faculty of Arts: G.B. Hallett, M.A.

Faculty of Commerce: *Dennis E. Connelly, Ph.D.

Faculty of Education: D.J. Weeren, Ph.D.

Faculty of Engineering: *Donald Warner, M.S. (M.E.)

Faculty of Science: W.A. Bridgeo, Ph.D.

Comptroller: R.G. Deegan, B. Comm., C.A.

Dean of Students: K.P. Bendelier, M.S.W.

Librarian: Ruth Hafter, M.S.

Registrar: K.J. Cleary, M.A.

*Acting Dean, 1972-73

ADMINISTRATIVE OFFICES

Athletics:

Robert Hayes, B.A. (Director)

Robert Boucher

Brian Heaney, B.Sc.
Allan Keith, B.Ed.

Audio-Visual Center:

A.T. Sabeau, M.Sc. (Director)
D.J. MacNeil
Paul E. Rooney

Bookstore:

William Greenwood, B. Comm. (Manager)

Business Office:

Gerald Blom (Chief Accountant)

Computer Center:

A. M. Tingley, M.E. (Director)
D. Frank Dares

Information Services:

Guy Noël, B.E. (Director)
Corinne Noonan, Public Relations

Registrar's Office:

Leo R. MacDonald, B.A. (Director of Admissions)
Michael C. Derrick, B.A.
Kenneth Snair
Murray Wilson, B.Ed.

Residences:

Richard Ratcliffe (Director)
Elizabeth Chard, M.A. (Dean of Women)
Brian O'Byrne, M.A. (Dean of Men)
John Parker, B.A.

Secretarial Services:

Margaret MacNeil (Supervisor)

Student Services:

L.W. Smith, M.A. (Head of Counselling)
Rev. J.J. Hennessey, S.J., M.A. (Counsellor)
Rev. F. Whelan, S.J., M.A. (Counsellor)
E.T. Cosgrove, B.E. (Financial Aid)

Rev. R. Haughian, S.J., M.Th. (Chaplain)
Rev. J. Herauf, S.J., S.T.M. (Asst. Chaplain)
Ross MacLeod, B.A. (Manpower Advisor)

Library:

Hugh H. Barnstead, B.L.S.
Barbara Dacey, B.L.S.
C. Gosine, A.L.A.
Lloyd Melanson, M.L.S.
Christine Morrison
Lynn Murphy, M.L.S.

Physical Plant:

George Somers, Dip. Eng. (Director)
G. Cigolotti

President's Office:

Carol M. Markesino (Executive Secretary)

Printing and Stationery:

Peter Weal (Manager)

Purchasing and Receiving:

Matthew Gallagher
Russell Lownds