

Saint Mary's University

Copy for correction

Halifax, Canada



**69-70
calendar**

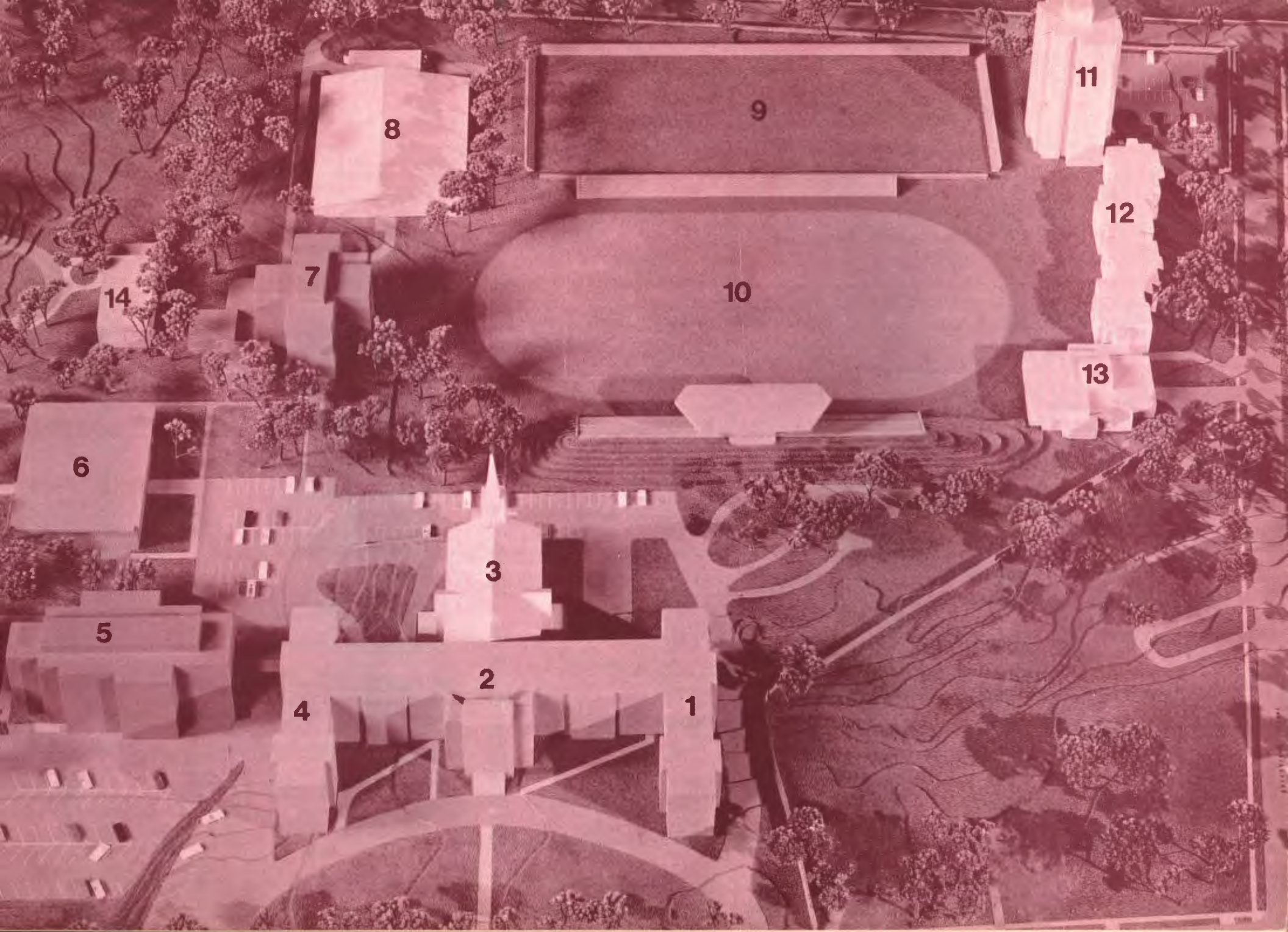
General Calendar of

Saint Mary's University

for the academic year 1969-70



1. Jesuit Residence
2. Main Building
3. Canadian Martyr's Parish and Chapel
4. Faculty Offices
5. Chemistry-Biology Building
6. Library
7. Students' Center
8. Winter Arena and Field House
9. Practice Sports Field
10. Stadium
11. High Rise Residence
12. Low Rise Residence
13. Dining Hall and Swimming Pool
14. Canadian Martyr's Parish Center



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CALENDAR - - - 1969

JANUARY	FEBRUARY	MARCH	APRIL
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- 7 Saturday Feast of St. Thomas Aquinas, Patron of Schools.
- 14 Saturday Public Speaking Contest in the Debating Theatre at 8:15 p.m.
- 25 Saturday Extracurricular activities cease.
- 31 Wednesday Easter recess begins after the last class.
- 31 Tuesday Classes resume.

April

- 10 Friday Last day of classes.
- 15 Wednesday Final examination begin.
- 29 Wednesday Survey Camp begins.

May

- 10 Sunday Baccalaureate Ceremony in the University Chapel at 3:30 p.m.
- 11 Monday Spring Convocation in the University Auditorium.
- 12 Tuesday Registration for first Summer Session.
- 13 Wednesday First Summer Session begins.

June

- 19 Friday First Summer Session examinations.

July

- 1 Wednesday Registration for second Summer Session.
- 2 Thursday Second Summer Session begins.

August

- 14 Friday Second Summer Session examinations begin at 9:00 a.m.

CALENDAR - - - 1970

JANUARY	FEBRUARY	MARCH	APRIL
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General Information

History Associations Statement of Objectives Student Organizations Services Training

History

Saint Mary's University had its beginnings as a small college founded in Halifax in 1802 by Reverend, later Bishop, Edmund Burke. The site of the first building was just west of the present Saint Mary's Basilica on Spring Garden Road.

Official recognition came in 1841 when "An Act Incorporating the trustees of Saint Mary's College at Halifax" was enacted by the Nova Scotia House of Assembly. Eleven years later the privileges granted in the Act of 1841 were made permanent.

In 1881, Saint Mary's received a handsome bequest from the will of Mr. Patrick Power, a prominent Halifax business man. This generosity came at a critical period in the history of Saint Mary's, since without it the institution might not have survived.

In 1903, the College was re-established on a new campus at Quinpool Road and Windsor Street in Halifax. Ten years later the Christian Brothers of Ireland assumed direction and added to the building.

In 1918, the Nova Scotia Legislature, in the preamble to an Act to amend the law respecting Saint Mary's, declared that Saint Mary's, "originally incorporated by

Chapter 39 of the Acts of 1841, shall continue to be deemed and taken to be a University, with all the necessary and usual powers . . . including the power of conferring Degrees in Arts and in all the other faculties."

The Jesuit Fathers assumed direction of Saint Mary's in 1940. In 1951, the University moved to a new 30 acre campus on the historic Collins estate and former Gorsebrook Golf Course in south Halifax. In 1968 Saint Mary's University became a co-educational university.

Associations

Saint Mary's University is a member of the Association of Commonwealth Universities, of the Association of Universities and Colleges of Canada, of the Association of Atlantic Universities and of the Jesuit Educational Association.

Saint Mary's 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. Since 1953, Saint Mary's has been one of the institutions sponsoring the Atlantic Summer School for Advanced Business

Administration. In 1955, it entered upon an agreement of affiliation with the Maritime School of Social Work. And in 1957, it affiliated Ignatius College in Guelph, Ontario, and Regis College in Toronto, Ontario, for courses leading to degrees in Arts and Sacred Theology. Also in 1957, Saint Mary's became one of the six Maritime Universities co-operating with the Nova Scotia Department of Education in the professional training of teachers.

Statement Of Objectives

This University believes that its objective is to induce, in the individual student, that kind of critical thinking that will build and refine his constructive, judgemental powers towards his own free formation of a system of Christian and humanistic values and principles that can face and answer the cultural and technological challenges of the present day. This University consequently believes that traditional humanism, confirmed by the teachings of Jesus Christ, and supplemented by the scientific and professional awareness required in our time, is the best educational instrument for the making of modern Canadians.

Discipline

It is assumed that students come to the

University for a serious purpose and will conform to duly established customs, policies, and rules. The University authorities reserve the right to censure or penalize students who are guilty of breaches of school discipline. The registration of the student is considered an acceptance of regulations.

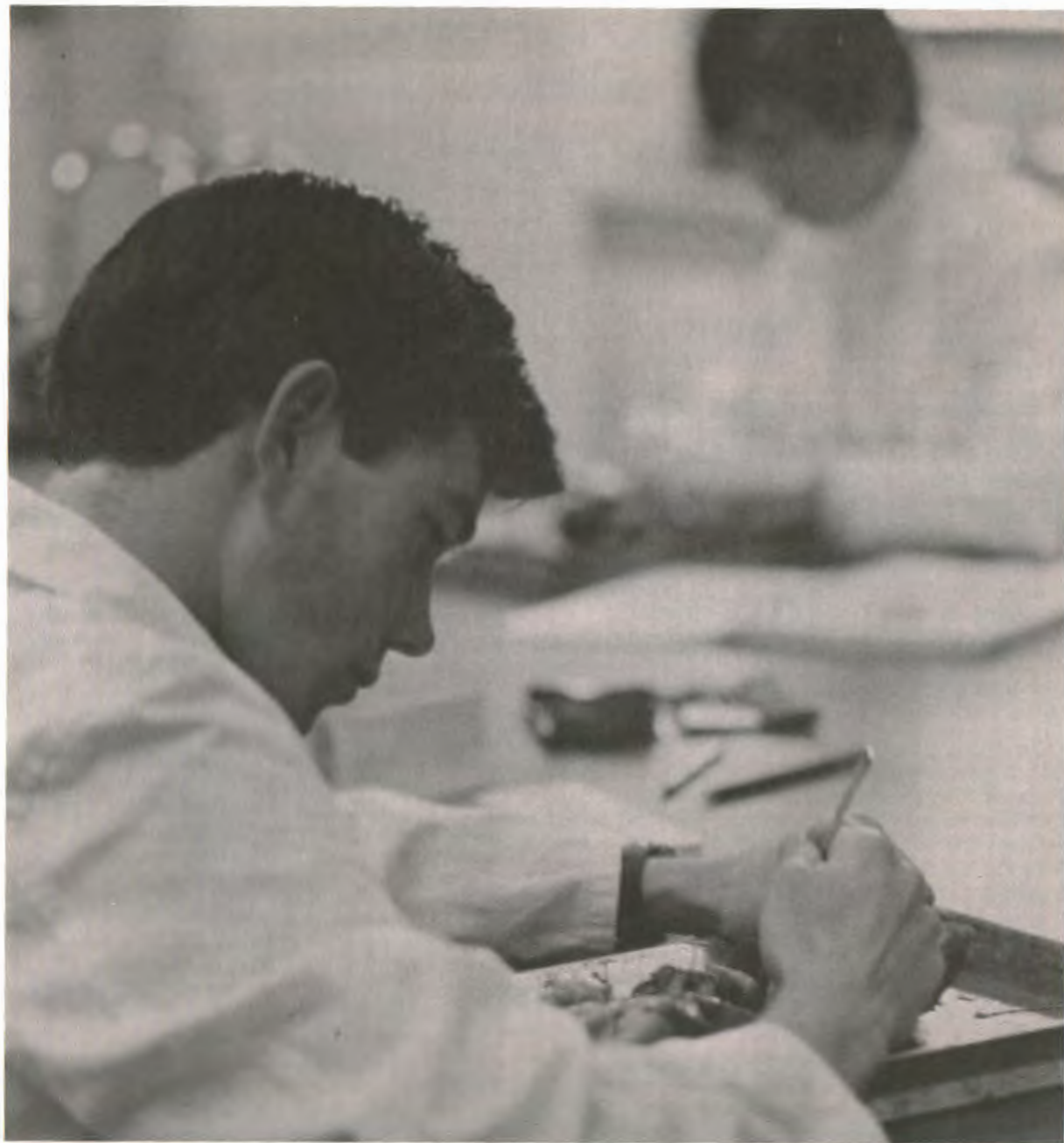
Attendance at all lectures, seminars, and laboratory periods of any course in which a student is registered is mandatory. A student whose attendance has been reported as unsatisfactory by the professor may be debarred from tests and examinations, or required to withdraw from a course or degree programme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

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 hold office in any student organization, must be in good standing at the time of their election or appointment.

Students' Council. It aims at promoting



the best interests of the students by sharing with the Faculty the responsibilities of University government in all non-academic matters and in accordance with the powers conferred by the President.

The Christian Action Movement, formerly the Sodality of the Blessed Virgin Mary; this organization is for those students who wish to express their Christianity through social action, and who believe that for this action to be effective it should be united with prayer and a life centered around the Eucharist.

World University Service of Canada. Through this national organization Saint Mary's participates in an international programme of material assistance, student exchange, and interchange of ideas throughout the world university community.

Canadian University Students. This organization strives to encourage better understanding among students across Canada, and to promote effectively student needs and represent their interests here and abroad. Membership is open to all students.

Alpha Sigma Nu. International Jesuit Honour Society. Membership is based equally on high academic achievement and outstanding contribution to the co-curricular

activities of the University.

The Society functions as a catalyst for the promotion of serious discussion within the University community and thus comprises that segment of the University that most closely approaches the ideal of true education.

Tau-Gamma-Sigma Society is restricted to students in the Faculty of Arts. Besides social and recreational activities the Society undertakes service projects for the welfare of the University and civic communities.

Sigma-Gamma-Phi Society is restricted to Science and Pre-medical students. Its functions are, in general similar to those of the Tau-Gamma-Sigma Society.

Delta-Lambda-Kappa Society is open to students in the Faculty of Commerce. The aim of the Society is to formulate and implement a programme of an educational, social, and recreational nature for the benefit of the members.

The Engineering Society is restricted to Engineering students. Its activities correspond, in general, to those of the above societies of Arts, Science, and Commerce.

The Debating Society is open to all students. Its activities include Intercollegiate and Interfaculty Debates, Radio Debates and

Forums, etc.

The Philosophers' Academy has for its purpose the promotion of philosophical study and of the investigation of philosophical problems by the presentation and discussion of philosophic topics at its regular meetings.

The History Society provides a forum for the discussion of significant themes and problems in History, with emphasis on Modern History. Members should have at least one university History course as background.

The Dramatic Society presents each year a major dramatic production. It co-operates in the entertainment programmes offered by other student organizations.

The Journal is the newspaper published by the students.

The Athletic Association promotes sports activities and co-operates with the Director of Athletics in organizing external and intramural contests, conferring athletic awards, etc.

The Young Liberals' Club and The Young Progressive-Conservative Club strive to arouse on the campus an informed interest in civic and government affairs through a programme of Model Parliaments, guest speakers, meetings, etc.

The Alumni Association. All former Saint Mary's students are eligible for membership. The Association, in addition to an annual social programme, has established an Annual Fund for university support. The Association nominates six members for appointment to the University's Board of Governors.

Services Training

Canadian Armed Forces Subsidization Plans

Regular Officer Training Plan (ROTP) is a completely subsidized university plan covering tuition, books, medical service and a living allowance for up to four years of undergraduate study.

Medical Officer Training Plan (MOTP) and the Dental Officer Training Plan (DOTP) covers the above, with the addition of a graduated pay and rank throughout four years of undergraduate study.

Students interested in any of the above Regular Force Plans should enquire at the:

Canadian Forces Recruiting Centre
Sir John Thompson Building
1256 Barrington St.
Halifax, N.S.
Phone: 422-5956 or 423-6945

Canadian Armed Forces—Primary Reserve

Reserve Officer University Training Plan (ROUTP) provides an opportunity for a limited number of suitable young men, enrolled in Canadian Universities to perform officer training during the summer months while they are undergraduates and thereby prepare themselves for promotion to commissioned rank in the Primary Reserve of the Canadian Armed Forces. For further details contact the recruiting centre listed above or the nearest Primary Reserve unit.

Financial Information

Fees Payment of Fees Withdrawal and Refunds Scholarships and Bursaries

Fees

Tuition Fees:

Full-Time Students

(Students Registered for Three or More Courses)

These fees include all regular charges of the University for registration, tuition, laboratories and library \$560.00
 Other Fees: (Student Council, Athletics, Health Services) 45.00

TOTAL \$605.00

A student taking a course over the normal load will be charged an additional \$112.00.

Part Time and Evening Division:

Per course \$112.00

Special Fees

Late registration: \$10.00, and an additional \$3.00 per day after September 15th.

Graduation: with Degree \$ 15.00
 with Diploma 10.00
 in absentia
 (additional fee) 15.00

Supplemental or

Special examination 15.00
 at an outside centre
 (additional fee) 5.00

Re-reading 5.00
 Official transcript
 (after first copy) 1.00

Students' Council Fee

At the request of the student body, all full-time students are required to pay \$18.00 in support of student projects. This fee is administered by the Students' Council and is included in full-time Tuition fees noted above under the heading of other fees.

Residence Fees

The residence fees are effective for the full academic year, beginning on the day before registration and ending on the day after the final examinations, but excluding the Christmas recess.

Students who are accommodated in the low-rise residence building will pay a room and board fee, as follows:

Single accommodation \$900.00
 Double accommodation 835.00

No reduction of these rates is allowed for meals not taken at the University.

The high-rise residence building offers apartment-type accommodation, including facilities for meal preparation. Each apartment consists of a living room, kitchenette, two double bedrooms, and a bathroom. An apartment is designed

to accommodate four students. Occupants of these suites will pay a fee covering room rent only.

Rental fee, per student \$460.00

Students who enter residence before the beginning of the academic year or who remain in residence after the end of the academic year or during the Christmas recess will be charged a room rental of \$2.50 per day. Meals will be obtainable at the University cafeteria at the rates currently in effect.

The University reserves the right to make changes without notice in its published schedule of tuition, residence, and other fees.

Payment of Fees

As first term fees, full-time students are required to make an initial payment on or before the date of Fall registration. The amount of this initial payment is:

Non-resident students \$350.00
 Resident students —
 apartment-type accommodation.. 600.00
 Resident students —
 room and board basis 800.00

Second term fees payable on the dates of re-registration, January 5 to 12, are the balance of the student's account.

Accounts which are not paid in full by January 31st will be subject to a penalty of \$10.00.

Students who have been awarded scholarships and bursaries by the University may deduct one-half their value from first term fees.

Students who plan to finance their education with funds from a Canada Student Loan should complete the arrangements before registration. Application forms for a Certificate of Eligibility may be obtained from the designated Provincial authority (in Nova Scotia, The Canada Student Loans Committee, Department of Education). If these forms are filed with the designated Provincial authority during the summer months the student should be able to obtain his Certificate of Eligibility and Confirmation of Enrolment form before registration. Signature of the appropriate University official on the Confirmation of Enrolment form will enable the student to obtain his loan without delay.

Students wishing residence accommodation must remit a deposit of \$50.00 with their application for residence. If the student's residence application is accepted, the deposit is retained as a caution deposit against loss or damage other than normal wear and tear. The deposit or any remaining balance will be returned to the student's

home address by mail within one week of his departure. The reservation deposit will be refunded if notice of cancellation is received before August 1st.

Students will be charged for damage to University property.

No student will be admitted to a semester examination or receive any report, degree, diploma, certificate, transcript, or testimonial whatsoever, until his financial accounts have been satisfactorily settled.

Drafts, cheques, money orders, etc., should be made payable at par to Saint Mary's University and addressed to the Treasurer, Saint Mary's University, Robie Street, Halifax, Nova Scotia.

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.

The University has retained a medical doctor as Director of Medical Services. The doctor's office will be located on campus commencing in the academic year 1969-1970 and his services will be available to all students.

Students from outside of Nova Scotia,

not covered by medical plans, are advised to make their own arrangements in this regard until the complete details of the NSMSI plan are available.

All students from out of Province (N.S.) are responsible for their own hospitalization expenses.

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

Withdrawal and Refunds

When a student withdraws from the University he will at once notify the Registrar. In all cases this notification will be taken as the official date of withdrawal from the University.

A proportionate refund of tuition and residence fees may be granted to a student who withdraws from the University for a reason approved by the proper authorities if application is made in writing to the Treasurer. Students withdrawing at the beginning of a month or at any time within the month are charged for the whole month. First term withdrawals are subject to a minimum charge of \$25.00 for tuition and \$50.00 for residence.

A student is accepted for residence on

the understanding that he will remain in residence for the full academic year. A refund is not granted to a student who withdraws from residence unless or until an acceptable substitute has assumed the balance of the residence fees for the session.

No refund of any fee will be granted to a student who withdraws after November 15th for the first semester, or after February 28th for the second semester.

Scholarships and Bursaries

In an effort to recognize outstanding academic achievement and to help needy and deserving students, Saint Mary's University annually awards many scholarships and bursaries. Entering students who wish to make application for scholarships must have an average of 75 per cent or over in their high school work. University students who apply for continuing scholarships must have a minimum average of 70 per cent. Bursaries are awarded on the basis of need for students of less than scholarship average but whose records give promise of solid and successful university work.

All scholarship applications must be made in writing to the Director of Scholarships before June 30. Each scholarship is awarded on a yearly basis; students who

wish a renewal must reapply by this date.

Scholarships Open to all Students

Ashwood Scholarship: Valued at \$200.

Flinn Scholarships: Two, valued at \$250 each

Mary C. Daley Scholarship: Valued at \$100 and awarded in alternate years.

Eleanor M. Florian Scholarship: Valued at \$300. Open annually.

Duncan W. Lynch Memorial Scholarship: Valued at \$400. Open annually to a Catholic student from Dartmouth.

John Glenister Memorial Scholarship: Valued at \$150. Open annually.

University Scholarships: 5 valued at \$600 each, 5 valued at \$550 each, 5 valued at \$500 each, 5 valued at \$400 each, 15 valued at \$300 each, 20 valued at \$200 each, 20 valued at \$100 each.

Scholarships Open to Entering Students

Saint Mary's University Ladies' Auxiliary Scholarship: Valued at \$350. Open to a student of Saint Patrick's High School, Halifax, Nova Scotia.

Brother Stirling Scholarship: Donated by Mr. John H. Dickey. Valued at \$600. Open annually.

University Scholarship: Valued at \$550. Awarded annually to a leading student of Saint Patrick's High School, Halifax, Nova Scotia.

University Scholarship: Valued at \$550. Awarded annually to a leading student in the graduating class of St. Peter's High School, Dartmouth, Nova Scotia.

University Scholarship: Valued at \$550. Awarded annually to a student of Saint Malachy's High School, Saint John, New Brunswick.

University Scholarship: Valued at \$200. Awarded annually to a Catholic student from Moncton, New Brunswick.

University Scholarship: Valued at \$550. Awarded annually to a student of the graduating class of Gonzaga High School, St. John's, Newfoundland.

University Scholarship: Valued at \$550. Awarded annually to a student of the graduating class of Brother Rice High School, St. John's, Newfoundland.

University Scholarships: 5 valued at \$600 each, 5 valued at \$500 each, 5 valued at \$400 each, 20 valued at \$300 each, 15 valued at \$200 each.

Scholarships Open to Sophomore, Junior, and Senior Students

Nova Scotia Light and Power Company Scholarship: Valued at \$300. Open to a Science or Engineering student.

James E. Donohue Memorial Scholarship: Valued at \$100. Open to students in Engineering and awarded in alternate years.

Nova Scotia Teachers' College: 1 valued at \$500. Open annually to graduates of the Nova Scotia Teachers' College.

University Scholarships: 4 valued at \$500 each, 6 valued at \$300 each, and 12 valued at \$100 each.

The Institute of Chartered Accountants of Nova Scotia Centennial Bursary: A bursary to be held by a student of Saint Mary's University, 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.

Bursaries

Rebecca Cohn Memorial Bursary: Valued at \$100. Open annually.

Bernard Zwicker Memorial Bursary: Donated by Mr. and Mrs. Irvin Zwicker in memory of their son. Valued at \$150.00 and awarded in alternate years commencing 1969-1970. Open to a student in the Commerce Faculty. Financial need is taken into consideration in making this award.

Lord Nelson Hotel Ltd. Bursary: Valued at \$250.00. Preference will be given to applicants from the Atlantic Provinces. Open annually to students in either their Freshman or Sophomore year.

University Residence Bursaries: 15 valued at \$100 each. Open annually to residence students from parishes in the Archdiocese of Halifax.

University Bursaries: Nine additional university bursaries: 2 valued at \$400 each, 3 valued at \$200 each, and 4 valued at \$100 each.

School of Education Scholarships

The province of Nova Scotia, through arrangement with the University, offers a number of scholarships to university graduates taking the degree of Bachelor

of Education. Application for these scholarships should be made in writing to the Dean of the School of Education, Saint Mary's University.

Parish Scholarships

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.

Saint Agnes Parish Holy Name Society Scholarship: Valued at \$100.

Saint Joseph's Parish Scholarships: Two: one valued at \$100 and one at \$150.

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

Saint Peter's Parish Holy Name Society Scholarships: Varying in number and value.

Saint Rose of Lima Parish Holy Name Society Scholarship: Valued at \$100.

Saint Stephen's Parish Scholarships: 4 valued at \$100 each.

Saint Stephen's Educational Association Scholarships: 3 valued at \$100 each.

Home and School Scholarships

The Home and School Association of various schools offer scholarships to deserving students. Students needing scholarship assistance should seek further information from their respective Home and School Association.

Bedford Home and School Association Scholarship: Valued at \$100.

Oxford Home and School Association Scholarship: Valued at \$50.

Saint Thomas Aquinas Home and School Association Scholarship: Valued at \$100.

Knights of Columbus Scholarships

Many councils of the Knights of Columbus offer scholarships to deserving students. Students interested in such scholarships are advised to direct inquiries to the council in their area.

Knights of Columbus Council 1097 (Halifax) Scholarships: 7 valued at \$150 each.

Knights of Columbus Council 2181 (Yarmouth) Scholarships: Valued at \$200.

Colombo Plan Scholarships

Each year the Colombo Plan offers a number of awards to deserving students from Colombo Plan countries.

Readers and Laboratory Assistants

Each year a number of positions are open to Junior and Senior students to act as course readers and assistants in the various laboratories. Remuneration is based on hours of employment during the term.

Other Scholarships

There are many other scholarships for which students are eligible to apply but which are not controlled by the University.

Imperial Oil Limited offers annually free tuition and other compulsory fees to all children or wards of employees and annuitants who proceed to higher education courses. The courses may 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% 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.

Joe Gannon Memorial Scholarship: Value \$500. Awarded to the son,

daughter or legal ward of a trade unionist who is a member of a union affiliated to the Nova Scotia Federation of Labour. Applications should be addressed to Selection Committee, c/o Nova Scotia Federation of Labour, 530 Roy Building, Halifax, Nova Scotia.

Royal Canadian Legion Bursaries, Nova Scotia Command: Value \$400, \$350. Provides four bursaries annually. Established to assist dependents of veterans to further their education. Applications available from L. M. Rhodenizer, Education Committee, New Glasgow, Nova Scotia.

Canadian University Students' Scholarships: Canadian University Students offers a scholarship whereby specially selected students may take one year of their course at a university in a different part of Canada.

Children of War Dead (Education Assistance) Act provides fees and monthly allowances for children of veterans whose death was attributable to military service. Inquiries should be directed to the nearest District Office of the Department of Veterans Affairs.

Municipal School Board, Halifax County: Four scholarships of \$100 are awarded annually to students who have been accepted by the Education Faculty

of a Maritime university. Restricted to residents of Halifax County. Further information from Municipal School Board, P.O. Box 90, Armdale, Nova Scotia.

I.O.D.E. Second War Memorial Entrance Bursaries, one for each Province, \$400 a year for four years. Awarded to children of deceased or permanently and seriously disabled Canadian men and women of the services who served in World War II. Further information: I. O. D. E. Educational Secretary, 301 Spring Garden 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: Provincial Educational Secretary, I. O. D. E., 301 Spring Garden Road, Halifax, Nova Scotia.

Loans

For those wishing to apply for government guaranteed financial assistance, the University cooperates fully with the Canada Student Loans Plan. Enquiries should be directed to the Department of Education, Student Aid Section, Halifax, Nova Scotia.



Admission Information

Application Admission Requirements Admission To Advanced Standing Registration

For information on admission to Graduate Studies see p. 27.

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 15. The application form must be accompanied by the following:

1. A testimonial of good character.
2. Official certificates received from the Department of Education or other source. Students who have attended another university should request that institution to forward a transcript of their marks to the Director of Admissions.
3. A recent photograph. This must be a head and shoulders photograph preferably in jacket and necktie, the photograph of good quality and suitable for possible newspaper reproduction.
4. A \$5.00 application fee if the applicant is not a resident of Canada.
5. Candidates whose native tongue is other than English must arrange to take

a test of proficiency in English under the auspices of:

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

A student wishing to apply for on-campus residence accommodation will receive, upon acceptance by the University, an "Application for Residence" form, from the Admissions Office. This application form, together with a \$50.00 deposit, serving as both a reservation and caution deposit, should be forwarded to the Director of Residence, Saint Mary's University, and students are asked to note that no application for residence can be considered, unless accompanied by this deposit. The sum will be returned, either in full, or in part, one week after the end of the academic year, but will not in any event, be applied towards tuition or residence fees. In the case of accommodation not being available, or if the reservation is cancelled before August 1st, the deposit will be refunded in full. It is not refundable after this date.

Admission Requirements

To be admitted to Saint Mary's as an

undergraduate a candidate must offer Junior Matriculation credit (50%) (Nova Scotia Grade XI or equivalent) in English, Mathematics and any three from History, Economics, Physics, Chemistry, a language other than English, Biology, or Geology. An average of 60% is required.

Candidates for Science and Engineering should offer Chemistry, Physics, and/or Trigonometry and marks in Science and Mathematics should be above average.

Saint Mary's University DOES NOT require S.A.C.U. test scores as one of the criteria for admission.

Acceptable Certificates

Satisfactory marks in any of the subjects listed above will be accepted as credit toward the entrance requirements if such marks are granted by any of the following examining bodies.

(a) A Nova Scotia High School certificate or a Nova Scotia Department of Education High School certificate.

(b) Certificates of the Common Examining Board of the Atlantic Provinces.

The pass mark on Grade XI is 50%. Marks of 40% or over on Grade XII subjects may be counted as equivalent to passes in corresponding Grade XI subjects.

(c) High School or accredited High School certificates of the Province of New Brunswick.

(d) Equivalent certificates issued by Education Departments of other provinces.

(e) Second years certificates issued by Prince of Wales College, Charlottetown, Prince Edward Island.

(f) Equivalent certificates of matriculation examinations taken at universities.

(g) Certificates similar to the above issued by university or other official examining bodies, when found adequate.

Equivalent Certificates

United States

High School graduation with 16 points, (4 in English, 2 in History, 2 in Mathematics and 8 in academic subjects required in the courses to be followed). A United States student must also provide a High School Transcript.

United Kingdom, West Indies and West Africa

General certificates of education with standing in at least 5 subjects with at least 2 being at advanced level; or 4 subjects of which 3 must be at advanced level. (English and Mathematics are imperative at

advanced level). This qualification should enable a candidate to enter the second year program in the faculty of Arts, Commerce and Science.

Hong Kong

General Certificate of Education as above or University of Hong Kong Matriculation Certificate on the same basis as G.C.E.

India and Pakistan

Degrees with first and second class standing from Universities with English medium, will be recognized with the exception that certain specific degrees such as a Bachelor of Teaching or Diploma of Teaching, cannot be accepted as the equivalent of a Bachelor of Education.

All overseas students whose mother tongue is not English are required to take the English Language Test administered by the University of Michigan. The English Language Test is the responsibility of the student who must apply directly to the English Language Institution, Testing and Certification, The University of Michigan, Ann Arbor, Michigan, U.S.A.

Admission to Advanced Standing

1. Arts

A full year's credit (five courses) will

be granted a student registering in Arts, who presents a Senior Matriculation Provincial Certificate (Nova Scotia Grade XII) or equivalent with a pass standing (50%) in each of the following subjects, and a general average of 10% above pass (60%).

English and four from Mathematics, Physics, Chemistry, Biology, Geology, Geography, History, Ancient and Modern Languages.

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

2. Science and Commerce

A full year's credit (five courses) will be granted a student registering in Science or Commerce, who presents a Senior Matriculation Certificate (Nova Scotia Grade XII) or equivalent with a pass standing (50%) in each of the following subjects, and a general average of 10% above pass (60%).

- i English
- ii Mathematics
- iii Three from Physics, Chemistry, Biology, Geology, Geography, History, Ancient and Modern Languages.

This advanced standing makes gradua-

tion 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 a pass of 65% will be able to complete the Engineering Diploma requirements in three years and (subject to the fulfillment conditions) receive the Bachelor of Science Degree.

- i English
- ii Mathematics
- iii Physics
- iv Chemistry
- v One of History, Geography, Geology, Ancient or Modern Languages.

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

4. 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.

- i These credits must be obtained before courses at the University are begun.
- ii The students must have a mark of 60% in each subject for which he is seeking advanced standing. A student wishing to take further courses in a Science subject must have a mark of 75% in that subject.
- iii Courses taken at other institutions or by Senior Matriculation after first registration at Saint Mary's will not be credited by the University unless the student has obtained prior, written approval of the Dean of Faculty.

5. The University reserves the right to admit any student who gives promise of success in university studies even though he does not possess all the normal entrance requirements.

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.

It is part of registration to meet initial obligations with the Office of the Bursar.

At the time of registration, all students not registered at Saint Mary's during the past academic year are required to present a certificate of medical fitness. Students participating in major sports may also be asked to produce a similar certificate.

Provisional and Late Registration

If official documents are not received by the Registrar and approved by the Committee on Admissions two weeks before registration dates, provisional registration may be permitted. In case of such provisional registration the student is responsible for having all official entrance documents filed with the Registrar not later than two weeks after the regular registration date. A student is not officially registered in the University until provisional registration has been confirmed.

Students registering on any other date than that designated in the Academic Calendar are required to pay a late registration fee (see 'Special Fees').

Change in Registration and Dropping Courses

Any change after the initial registration is permitted only with the written consent

of the Dean of the Faculty concerned. For each course added, dropped, or changed even with the consent of the Dean, a fee of \$2.00 is charged. In the case of a change initiated by University authorities no fee is charged.

No change in registration is permitted after the second week of instruction in a semester. Students who drop a course without authorization will be given a grade of 'WF' (Withdrawal Failure) on the University records. A note of 'W' signifies authorized withdrawal. This will not be granted within two weeks preceding semester examinations. No term tuition refund will be granted on individual courses dropped after the second week in a semester. Should registration prove insufficient, the University reserves the right to cancel any listed course.



Academic Information

Examinations and Grades Evening Division Adult Study Series
The Atlantic Summer School For Advanced Business Administration

Examinations and Grades

In full courses there will be a final examination, a mid-year examination, and two tests, at assigned times (v. Academic Calendar for times). The first-term examination and test, together with assignments, etc., will be worth 40% of the total mark in each subject. In either first or second term, however, assignments, etc., will not exceed 20% of this total. A student whose record of assignments in a course is considered unsatisfactory may be debarred from writing the examinations in that course.

The pass mark in each subject is 50%.

Supplemental and Special Examinations

Supplemental examinations cover the same work and texts as the immediately preceding regular examinations, and normally are of three hours duration.

300-level courses and above, and honours courses will not carry supplemental privileges.

A student who receives a mark between 40% and 50% is eligible to write a supplemental examination under the following conditions:

(1) The supplemental is written at the

prescribed time the following September.

- (2) No more than two subject marks between 40% and 50%.
- (3) No subject mark is below 40%, or recorded as WF (Withdrawal-Failure).

Supplemental examinations are not graded but recorded as pass (50%) or failure.

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

Only one supplemental examination is permitted in any course. No course may be taken more than twice, except with the permission of the Committee on Academic Standing.

A special examination is an examination written outside the times assigned for regular and supplemental examinations. Permission to write a special examination is granted rarely and only for extraordinary reasons. Not more than two special examinations may be written in any one subject.

Applications for supplemental, special, or entrance examinations must be made no later than August 15th.

Failures

A student who defaults a final examination is considered to have failed the course and a WF will be entered on his record. To obtain credit he will have to repeat the course.

If the student defaults an examination for medical reasons, a medical certificate covering the precise period of absence must be filed with the Registrar's Office before the end of the period of examinations.

A student who fails in more than 40% of his year's work at the regular examinations fails his year, and is not eligible for supplemental examinations.

A student who obtains a mark of 20% or less in any mid-year examination shall be required to withdraw from the course, unless he has the permission of the Dean to continue on in that course and will receive a WF on his record for his year's work. A student who withdraws from a course in the second semester after a first semester mark of less than 40% in that course, receives a WF entry on his record for the year's work.

If a student fails a course which involves both lectures and laboratory work, he must repeat both parts of the course, or an ap-

proved equivalent to be determined by the department concerned.

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 year's suspension.

Academic Probation

Any student who fails more than 40% of his work at either the mid-year session or the end of the year is placed on academic probation. Any student who fails in two years of his work is automatically subject to dismissal.

Any student whose academic record or progress is judged to be unsatisfactory because of poor attendance, assignments, or other reasons may be placed on academic probation. If the record continues to be unsatisfactory, the student may be dismissed from the University by the Dean of Faculty.

A person who is on academic probation is subject to dismissal at any time at the discretion of the Dean of Faculty.

Appeals

Appeals pertaining to decisions taken on academic regulations may be made, in

writing, to the committee on Academic Standing.

Special Programmes

Evening Division and Summer Sessions

Credit courses in Arts, Science and Commerce, and in the Master's degree program in Education, are offered at the University in Evening and Summer Sessions. These courses are open to men and women. Normally students enrolling in these courses must have fulfilled the usual requirements for University entrance, however, the University reserves the right to admit any student who gives promise of success in university studies even though he does not possess all the normal entrance requirements. Students must follow, as closely as possible, the normal sequence of courses as required for students in the Day Division. They must maintain the same standards in their studies, as students in the Day Division.

Evening Division courses begin in September, at the time the Day Division commences classes, and end with the April examinations. Two Summer Sessions of six weeks each are held, the First Session beginning in mid-May and the Second Session early in July. Students registered for degrees at Saint Mary's may take two

credit courses each year in the Evening Division and one credit 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.

All inquiries with respect to the Evening Division and Summer Sessions should be addressed to the Director. Students planning to take summer courses in 1970, should contact the Director well in advance of April 1, 1970.

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.

The Canadian Industrial Management Association

The Halifax-Dartmouth Branch of The Canadian Industrial Management Association offers as one of its major objectives a program, described below, which provides an opportunity for those in the management field to better qualify themselves for their present position and to prepare for future advancement.

The purpose of this course is to give candidates a broad knowledge of the major fields of industrial management responsibility, and enable them to see in perspective their particular functions relative to other activities of the companies in which they are employed. The course, however, cannot cover any specific management area in enough detail to graduate trained technicians or specialists.

By providing this formal four year program of instruction leading to the C.I.M. Certificate, the Association meets a specific demand from the industrial community for a recognized management training course suited to men for whom a university degree course in management is not feasible.

Description of Course

Year I

- Section (a) Business Organization (12 Sessions)
- Section (b) Accounting Principles (12 Sessions)

The history and development of the modern business organization are thoroughly discussed in the first 12 sessions of the Course. The student will gain knowledge of the types and kinds of business ownership as well as the types of organization structures. The basic philosophies of modern business concepts will be discussed in an effort to prepare the student for his studies in the remainder of the Course. Following this, the student will study accounting principles in an effort to gain a fundamental appreciation of both General and Cost accounting practices. The influence of budgets and budgetary controls will also be discussed as will the various types of costing systems balance sheets, and profit and loss statements.

Year II

- Section (a) Engineering Economics (12 Sessions)
- Section (b) Industrial Engineering (12 Sessions)

In the first part of this year, the student

will gain some insight into the ever increasing influence of statistics and mathematics on management decision making. Basic concepts of operations research, statistical analysis, and machinery replacement are some of the major areas which will be covered in this Section. The Industrial Engineering Section of the Course is designed to give the student an over-all appreciation of this very valuable aspect of the present day industrial enterprise. Some of the subjects which will be discussed will be operation analysis, methods evaluation, work measurement, predetermined elemental time standards and work sampling.

Year III

- Section (a) Manufacturing Controls (12 Sessions)
- Section (b) Marketing (12 Sessions)

Production, inventory, and quality control systems and procedures are discussed in these lectures to give the student a basic understanding of the ever increasing value of these techniques. The 12 lectures on marketing will include study and discussions on advertising, market analysis, product design, manufacturing planning and has as its basic objective, the development of an understanding of the integration of these functions in the successful

operation of the business enterprise.

Year IV

Section (a) Industrial Relations (12 Sessions)

Section (b) Cases and Problems in Administration (15 Sessions)

No one connected with industry today can fail to appreciate the importance of labour relations in the total management function and so in the first half of Year IV, the student will deal with studies on the Labour Relations Act, union relations, and follow with studies on job evaluation, wage and salary administration, personnel administration, and communications. The final sessions of the Course are designed for individual study and group discussions of specific industrial management case material. In this part of the Course the student gets the opportunity to apply his previous learning as well as his own personal industrial experience. He is required to analyze specific case material and to present his findings in oral or written form. It presents an invaluable opportunity for the student to hear and discuss the findings of other students in his group, who usually have a wide and varied background of experience.

Information and application forms may be obtained from The Director, Adult

Studies, or from The Secretary, C.I.M.A., P.O. Box 162, Halifax.

The Atlantic Summer School for Advanced Business Administration

This summer school, sponsored by the Association of Atlantic Universities, offers a five weeks' course for executives from mid-June to mid-July. The course is designed to benefit both university and non-university men. It is desirable, however, that students have from five to ten years of experience in the management of men or in the conduct of technical or staff functions at a fairly responsible level.

Information and application forms may be obtained from Dean H. E. Dysart, Director, Atlantic Summer School for Advanced Business Administration, University of King's College, Halifax, N.S.

Faculties and Courses

Arts Science Commerce Engineering Pre-Professional Courses

Honours Courses Education

Course Numbering System

The new system of course numbering appearing in this Calendar took effect in September, 1967, and replaces the numbering system adopted in 1962. In the new system, courses numbered from 100 to 119 are Freshman level courses, normally taken by students entering from Nova Scotia Grade XI or equivalent. Courses numbered from 120 to 199 are introductory level courses normally taken by students entering from Nova Scotia Grade XII or equivalent, and are Sophomore level courses. All 100 level courses are normally prerequisite for admission to further courses in the subject. The 200 and 300 level courses are advanced courses normally taken in the Junior and Senior years. Courses numbered in the 250+, 350+ series are normally open only to students in the Honours Program, but may be taken by students in the General Program with the permission of the department concerned. The 400 level courses are honours courses normally taken in the fifth year beyond Grade XI. The 500 level courses are graduate courses.

Arts

Degree of Bachelor of Arts—The General Program

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 normally govern his registration beyond the Freshman Year.

3. Major concentrations for the Arts degree may be taken in Anthropology, Classics, Economics, English, French, German, History, Latin, Mathematics, Philosophy, Political Science, Psychology, Sociology, Spanish, Theology.

4. Each candidate for the B.A. must receive credit for:

- (a) English 101 or equivalent
- (b) one course in History
- (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 120 will not count. His program will be supervised and approved by his department.

6. A student who does not choose a major

concentration must have his program supervised and approved by a member of Faculty. A copy of such a program must be filed in the office of the Dean at the beginning of each academic year and will be subject to his approval.

At least 50% of a student's elective work must be done at the 300 level or above.

Additional Information:

Arts and Commerce course: Students who wish to obtain the Bachelor of Commerce degree in one year following the Arts degree will consult the Dean of Commerce regarding their program.

An Arts student who intends to do graduate work in Business Administration may, with the permission of the dean of Arts, take courses in Accounting and Business Administration in his undergraduate Arts program.

Science

The curriculum in Science is designed to give the student a solid grasp of basic scientific principles and methods as well as required technological knowledge, without at the same time sacrificing his liberal and cultural education. The student

is therefore encouraged to include courses in philosophy, theology, and the humanities as a broadening complement to his science program.

Degree of Bachelor of Science—The General Program

The new 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. Major 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 100-119 as follows:

- (a) Three required courses: one each from English, Mathematics, History,



or Economic History.

(b) Two elective courses to be chosen from the courses open to Freshmen in the following subjects: Theology, Biology, Physics, French, German, Latin, Spanish, Geology.

5. The Sophomore Year:

(a) The student must choose his subject of concentration and seek registration advice from the department of that subject.

(b) The student must complete:

(i) one course in Philosophy.

(ii) One course each (at the 120 level and above) in two of the following: Biology, Chemistry, Geology, Mathematics, Physics, Psychology.

(c) In addition to the above, the student must complete one course in Mathematics and one elective, 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 natural sciences (Biology, Chemistry, Geology, Mathematics, Physics),

Psychology, or Engineering. 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 subjects other than the two offered to satisfy (a) above. At least one of the three or four courses must be beyond sophomore level.

(c) One course from the Social Sciences (Economics, Political Science, Psychology, Sociology).

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 program 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 programs 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.

Commerce

The program 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, a place in the business community, the public service, and professional life. The purpose of the program is to provide a broad background in the humanities and social sciences together with a development of the conceptual foundations of accounting, business administration and economics.

Degree of Bachelor of Commerce

The requirements for the degree of Bachelor of Commerce 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 (5) full courses. The department concerned will normally govern the student's registration beyond Freshman Year.

3. The Freshman Year:

The student must complete 5 courses as follows:

(a) Two required courses: English 101 and Mathematics 111.

(b) Three elective courses to be chosen from the following: Biology 100, Economic History 101, French 102, German 100, History 111, Latin 102, Physics 111, Political Science 121, Psychology 120, Sociology 121, Spanish 100, Theology 121.

(c) A student who intends to take a major concentration in Accounting is advised to consult with the Accounting Department on the appropriateness of taking the introductory course in Accounting in the Freshman year.

4. The Sophomore, Junior and Senior Years:

(a) The student will take 15 courses numbered 120 and above. He must seek registration advice from his department of concentration. Major concentrations may be taken in Accounting, Business Administration, and Economics.

(b) The student must complete 7 required courses as follows:

- (1) One of English 123, 125-127
- (2) Philosophy 120
- (3 & 4) Accounting 201 and 302
- (5) Business Administration 201
- (6) Commercial Law 201
- (7) Economics 202

(c) In addition to the courses listed under (b) above, the student must complete two approved courses to be chosen from the subject areas of the languages, humanities, social and natural sciences, and from accounting and business administration.

(d) A student who elects a beginning course in a language other than English must take another course in that language in a subsequent year.

(e) The student must complete a major concentration in one of the following subjects as listed:

(i) Accounting—four courses. The requirements for exemptions from courses and examinations of the Institute of Chartered Accountants of Nova Scotia are being revised and will be announced when finalized.

(ii) Business Administration — four courses.

(iii) Economics — five courses.

(f) The remaining courses required under section (a) will be chosen by the student in consultation with his department.

The programs shown represent what is normally taken and recommended for each concentration.

Accounting

First Year

English 101*
Mathematics 111*
Accounting 201*
Elective
Elective

Second Year

English 123, 125-127*
Accounting 302*
Business Administration 201*
Business Administration 206
Economics 202*

Third Year

Accounting 312 & 313
Accounting 321 & 322
Commercial Law 201*
Philosophy 120*
Elective

Fourth Year

Accounting 303
Accounting 305
Elective
Elective
Elective

Business Administration

First Year

English 101*
Mathematics 111*
Elective
Elective
Elective

Second Year

English 123, 125-127*
Accounting 201*
Business Administration 201*
Business Administration 206
Economics 202*

Third Year

Commercial Law 201*
Business Administration 325 & 326
Business Administration 306
Philosophy 120*
Elective

Fourth Year

Business Administration 312 & 313 or 314*
Business Administration 310
Elective
Elective
Elective

Economics

First Year

English 101*

Mathematics 111*

Elective
Elective
Elective

Second Year

English 123, 125-127*
Philosophy 120*
Accounting 201*
Business Administration 201*
Economics 202*

Third Year

Commercial Law 201*
Economics 303 or Mathematics 121*
Economics Elective
Elective
Elective

Fourth Year

Economics 313 or 314
Economics Elective
Elective
Elective
Elective

*Required Courses

Engineering

For the Diploma in Engineering, the syllabus of studies is that prescribed by

Nova Scotia Technical College for the first three years of its five-year course. The first three years are given only at the associated universities, of which Saint Mary's is one, together with Acadia University, Dalhousie University, Memorial University, Mount Allison University, Saint Francis Xavier University, and Saint Dunstan's University.

With a Diploma in Engineering a student may enter without examination any of the departments at the Nova Scotia Technical College, Laval University or McGill University, 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.

Diploma in Engineering

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

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 program

the students will be awarded the Diploma in Engineering.

Senior Matriculation Requirements

Students possessing the following qualifications on entrance will follow Schedule "A" and may not, in fact, follow Schedule "B": A Matriculation Certificate (Nova Scotia Grade XII, or equivalent) with a pass standing of 50% in each of the following and a general average of 65% :

- i English
- ii Mathematics
- iii Physics
- iv Chemistry
- v One from History, Geology, Geography, Ancient and Modern Languages

Schedule "A"

First Year

Mathematics 121
Physics 121
Chemistry 121
English 125
Engineering 104
Engineering 105
Or
Engineering 102



Second Year

Mathematics 222
Physics 222
Chemistry 202
Engineering 203*
Engineering 204*
Elective
Elective

Third Year

Mathematics 212, 325 or 333
Engineering 302
Engineering 303*
Engineering 304
Engineering 305
Engineering 306*
Elective

Schedule "B"

First Year

Mathematics 111
Physics 111
Chemistry 121
English 101
Engineering 104
Engineering 105
Or
Engineering 102

Second Year

Mathematics 121
Physics 121

Chemistry 202
Engineering 203*
Engineering 204*
Elective
Elective

Third Year

Mathematics 222
Engineering 302
Engineering 303*
Engineering 304
Engineering 305
Engineering 306*
Elective

Note:

1. * indicates one semester courses. For details see "Courses of Instruction."
2. Students who plan to enter Civil, Mining, Metallurgical or Geological Engineering at the Nova Scotia Technical College must substitute Geology 121 for the second year elective.
3. Engineering 102 (Engineering Measurements) is required only of students proceeding to the Nova Scotia Technical College in Civil, Mining or Geological Engineering.
4. The selection of courses from the Humanities, where not specifically designated, is subject to the approval of the registration advisor.

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. This will be at the discretion of the Dean of Engineering.

Engineering and Science

Students who have obtained the Diploma of Engineering under Schedule "B" may proceed to the degree of Bachelor of Science if they fulfill the requirements noted under Engineering and Science Course.

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 to 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 program does not meet the entrance requirements to the school of his choice, the student is responsible to make it known to the appropriate Dean. Appropriate adjustments will be made at that time.

The sequence of pre-professional courses may, if necessary, replace the concentra-

tion 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.

Pre-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.

Pre-Law

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

Pre-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 in the sciences should include Biology 111 (120), 320; Chemistry 121, 202, 304; Mathematics 111; Physics 111. Of the remaining eight courses, at least seven must be taken in the Humanities; a Freshman English, Sophomore English and a Philosophy are required courses. At least two advanced courses should be included in the remaining four courses of the minimum program.

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 23, 24, and 25 respectively.

Pre-Dentistry

Pre-dental students entering with Nova Scotia Grade XI or equivalent must complete a minimum of ten university courses which should include Biology 111 (120); Chemistry 121, 304; Physics 111; English 101. The five remaining courses should be composed of three courses chosen from the humanities and social sciences plus two electives.

Students wishing to complete the requirements for a Bachelor of Science or Bachelor of Arts Degree must take 10 additional courses to be determined by the department of concentration so as to fulfill the requirements on pages 23, 24, and 25 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 recom-

mended 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.

Honours Degrees

Arts and Science

The new general requirements for Honours Degrees are as follows:

1. Students of above-average ability are urged to make application to follow an Honours Program before the end of their Sophomore Year to the department concerned and thus have their plan of studies controlled by that department. Formal application for admission of a student to an Honours Program must be made by the Chairman of the department concerned to the Committee on Honours on a form available in the Registrar's Office.
2. All Honours Programs must consist of twenty courses beyond the Freshman Year,

and must satisfy the requirements for the General Bachelor's degree. To transfer from an Honours Program to the General Program, a student must have the approval of the Committee on Academic Standing.

3. An Honours Degree may be obtained in four years from senior matriculation.
4. A student must obtain a mark of not less than 65% in every Honours course in his program. A student receiving a mark of less than 65% in any Honours course must receive the approval of the Committee on Honours before he will be permitted to continue.
5. In an Honours program with a major, the fifteen courses taken beyond the sophomore level must include:
 - (a) nine courses beyond the introductory level in one subject;
 - (b) two supporting courses to be determined by the department of the major;
 - (c) four courses not in the major field.
6. In an Honours program with a combined major, the fifteen courses taken beyond the sophomore level must include:
 - (a) eleven courses beyond the introductory level in *two* allied subjects, not more than seven courses being in either of them.

(b) four courses in subjects other than the two in (a).

Education

F. J. Dockrill, B.A., B.Ed., M.A.
B. Hanrahan, B.A., B.Ed., M.A.
M. MacMillan, B.A., B.Ed., M.A.
F. Phillips, B.A., B.Ed., M.A.
L. Scobbie, M.A., M.Ed., Dip. Ed.
D. Weeren (on leave), B.A., Ph.D., M.S.

Bachelor of Education Program

This program of studies, which is designed to form a professional preparation for university graduates who intend to enter the teaching profession, is a full-time program of six classes and is of one academic year's duration (September to May).

The six courses in the program are: Philosophy of Education; Psychology of Education; History of Education; General Teaching Methods; Special Teaching Methods and Practice Teaching. In most cases classes are supported by seminar groups, and in the case of Special Teaching Methods students attend those groups which deal with the subjects they wish to teach in schools.

Admission Requirements

Candidates must hold a Bachelor's Degree of Saint Mary's University or of another recognised university of similar standing.

Candidates who have had professional teacher training at the Nova Scotia Teachers' Training College and who have since acquired a Bachelor Degree may obtain the Degree of Bachelor of Education by taking only the classes in Philosophy of Education, and Psychology of Education.

Candidates who have had professional teacher training of two or three years duration at 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 Degree, may obtain the Degree of Bachelor of Education by undertaking a program of study as may be approved by Senate regulation.

Note: The Province of Nova Scotia will pay the TUITION fees of those candidates who undertake to teach within the Province for a period of two years. Application for these TUITION grants may be made at the time of Registration.

In addition, the Province of Nova Scotia provides a certain number of SCHOLAR-

SHIPS AND BURSARIES for those intending to take the Bachelor of Education Degree. Application for scholarship is made on a form obtainable from the School of Education which must be returned before *June 1st*. Note that all allocations of scholarships are made during June and only unusually are any funds available for this purpose after that month.

To Apply for Admission

1. Complete the form of application and make sure that all the 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. Application 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 candidates to the program is probationary and the status of all candidates is reviewed in December each year.

Graduate Studies

Degree of Master of Arts

Degree of Master of Social Work

General Requirements for Admission

1. Candidates for admission to the Master's program must

- (a) hold a Bachelor's degree from a University of recognized standing, and have completed an undergraduate program in the subject area chosen for graduate study comparable to an Honours degree from Saint Mary's University in that subject area.

A Bachelor of Education degree comparable to that granted by Saint Mary's University with second class honours 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 must arrange to take a test of proficiency in English under the auspices of

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

- (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 program of preliminary study.

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

4. Application for admission must be made on a form obtainable from Director of Admissions. The application form calls for an official transcript of the student's academic record, and also for letters of recommendation from two persons in a position to judge the applicant's personal and intellectual capacities for graduate study. The form and all supporting documents must ordinarily be on hand at least three weeks before the beginning of the academic session. (For students beginning their program in a Summer Session, the date will be two weeks prior to the beginning of that Session.)

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. At the discretion of the Committee on Graduate Studies a student may be admitted to a program entailing part-time and summer study.

2. Candidates must complete a program of four full courses and submit an acceptable thesis. On the recommendation of the department concerned, a three course or a two course program is permissible for a candidate undertaking a proportionately more demanding thesis. In departments authorized by the Committee on Graduate Studies, a five course program, without thesis, is also acceptable for the degree. Courses in all programs must be at the 400 level or the 500 level, but, where advisable, courses at the 300 level may be included in a program, provided that the requirements applying to graduate students in such courses be of a graduate standard.

3. *Up to two advanced courses in the chosen subject area completed at other universities may be accepted as part of the requirements, provided they have not been applied previously towards another degree.

4. A passing mark of second class honours standing (65%) is required in all courses.

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

6. A complete outline of the proposed program of study must be approved by the Committee on Graduate Studies. This outline, bearing the approval of the department concerned, must normally be

submitted to the Committee within one month of first registration in the program, but in no event later than six months before the Master's degree is expected.

7. Candidates must complete all degree requirements within five calendar years of being accepted as Master's degree candidates. The Committee on Graduate Studies will have the power to waive this regulation, but only in exceptional circumstances will this be done.

8. Candidates must satisfy all the particular requirements of the department in which the Master's program is being done.

Fees, Financial Aid

The schedule of fees found on p. 9 of this calendar applies to the graduate studies program.

A number of fellowships and assistantships up to a maximum of \$2,500 for the calendar year are available for full-time students. Further information on these may be obtained from the Chairman of the department concerned.

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) program.

3. Courses are generally scheduled in the late afternoon, evening, and Saturday morning during the regular academic session. A summer course is also available, but a candidate is not permitted to take more than two of his four courses through summer study.

4. Course offerings include courses in the following fields: philosophy of education, psychology of education, comparative education, and educational administration/supervision. The complete repertory of courses is found on p. 36 ff. In the spring an announcement of courses for the coming summer session and regular academic session is made available.

5. In conjunction with the writing of his thesis a candidate must enroll in Education 510 (Graduate Research Seminar). This course does not count as one of the four normally required for the degree.

History

Stanislaw Bobr-Tylingo, LesL., DesL., Dr. Habil. in History
Robert J. Bollini, B.A., M.S.
Elizabeth A. Chard, B.A., M.A., B.Ed.
Burkhard Kieseckamp, B.A., M.A.
Wallace G. Mills, B.A., M.A.
John R. MacCormack, B.A., M.A., Ph.D.
Keith A. Sutherland, B.S. Ed., M.A., Ph.D.

Requirements for Admission

A Bachelor's degree equivalent to an Honours degree in History from Saint Mary's University.

Philosophy

Robert N. Ansell, B.A., Ph.D.
Richard H. Beis, B.A., M.A., Ph.D.
Lawrence Dewan, B.A., M.A., Ph.D.
Rolf Gruner, Ph.D.
Rowland C. Marshall, B.A., M.A.
Arthur P. Monahan, B.A., M.A., Ph.D., M.S.L.
William A. Stewart, S.J., B.A., S.T.L., Ph.L.

Requirements for Admission

The general requirement for admission

to Graduate Studies which requires the applicant to hold a Bachelor's degree equivalent to an Honours degree in Philosophy from Saint Mary's University is specified by the following details: some acquaintance with modern logic, and with the various sections of the history of philosophy: ancient, mediaeval modern, contemporary.

Requirements for the Master of Arts Degree

Each student's program is arranged individually in consultation with the Department in relation to the student's preparation and interests, and keeping in mind the value of a general familiarity with the history of philosophy.

Courses

Philosophy 500: Modern Logic, R. N. Ansell
Philosophy 501: Plato and Aristotle, L. Dewan
Philosophy 502: Mediaeval Philosophy, A. P. Monahan
Philosophy 503: British Empiricism
Philosophy 504: Continental Idealism, Descartes to Hegel, R. C. Marshall
Philosophy 505: Continental Existential Thought, A. P. Monahan
Philosophy 506: Contemporary Analytic Thought, R. H. Beis

Philosophy 507: Phenomenology, R. C. Marshall
Philosophy 508: Augustine and Aquinas on the nature of Philosophy, A. P. Monahan
Philosophy 509: Epistemology of Lonergan, W. A. Stewart, S.J.
Philosophy 510: Philosophy of History, R. Gruner
Philosophy 511: Advanced Ethical Theory, R. H. Beis
Philosophy 512: Philosophy of Language
Philosophy 513: Philosophical Logic, R. N. Ansell
Philosophy 514: Philosophy of the Social Sciences, R. Gruner
Philosophy 515: Philosophy of Science
Philosophy 516: The Philosophy of Wittgenstein, R. N. Ansell
Philosophy 517: Metaphysics as a Knowledge of God, L. Dewan
Philosophy 550: Staff Seminar
Philosophy 600: Research and Thesis

Social Work

The Maritime School of Social Work was incorporated in 1941 to meet an urgent need for trained social workers in the Maritime Provinces. The school is recognized by the Canadian Association of Social Workers and its graduates are accepted for membership.

Saint Mary's University, along with the Universities of Acadia, Mount Allison,

Saint Francis Xavier, and University of King's College, grants the Master of Social Work degree to students who meet the requirements of the University and who are recommended for the degree by the Maritime School of Social Work.

Degree of Master of Social Work

The academic requirement for admission to candidacy for the degree of Master of Social Work is a Bachelor of Arts degree with high standing, or equivalent university training.

Students planning graduate work in Social Work should, where possible, emphasize Psychology or Sociology in their undergraduate courses. It would be desirable to complete a major and minor in these disciplines. Courses should be also taken in Political Science (Government of Canada), Economics, Philosophy and Biology.

In the discretion of the Admissions Committee of the Maritime School of Social Work, applicants may be required to undertake work in these fields as a prerequisite to admission.

Further information regarding courses, requirements for admission, living costs and other matters, may be obtained by addressing: The Maritime School of Social Work, 6414 Coburg Road, Halifax, N.S.

Courses of Instruction

Accounting
Anthropology
Biology
Business Administration
Chemistry
Classics in Translation
Commercial Law
Economics
Education
Engineering
English
Fine Arts
French
Geology
German
History
History of Art
Latin
Mathematics
Philosophy
Physics
Political Science
Psychology
Sociology
Spanish
Theology

Unless otherwise designated all courses listed are full courses.



Accounting

O. P. Cormier, Associate Professor (Chairman)
H. G. Beazley, Professor
C. A. Dixon, Lecturer
D. A. Hope, Assistant Professor
W. P. Lam, Assistant Professor
J. P. O'Neil, Lecturer

Courses leading to a B.Comm. with a Major in Accounting

First Year

English 101
Mathematics 111
Accounting 201
Elective
Elective

Second Year

English 123, 125-127
Accounting 302
Business Administration 201
Business Administration 206
Economics 202

Third Year

Accounting 312 & 313
Accounting 321 & 322
Commercial Law 201
Philosophy 120
Elective

Fourth Year

Accounting 303
Accounting 305
Elective
Elective
Elective

Exemption from three years of in-service training and the primary, economics, and intermediate examinations of the Institute of Chartered Accountants of Nova Scotia is available to Commerce graduates who intend to become Chartered Accountants. The requirements for exemptions from courses and examinations of the Institute of Chartered Accountants of Nova Scotia are being revised and will be announced when finalized. Arrangements also exist with the Institutes of other provinces.

Exemptions are also granted by the Society of Industrial and Cost Accountants of Nova Scotia to Commerce graduates who register in the Industrial Accounting course sponsored by the Society.

201: 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.

302: Intermediate Financial Accounting

Prerequisite: Accounting 201

A further study of the financial accounting aspects of Accounting 201 with special reference to balance sheet accounts.

Lectures: Three hours a week, one semester—half course.

303: Advanced Financial Accounting

Prerequisite: Accounting 302

Study of partnerships, consolidation, Fiduciary accounting, special sales procedures, business investigations, and other advanced areas.

Lectures: Three hours a week, two semesters.

305: Auditing

Prerequisite: Accounting 302

Auditing principles and procedures including verification and statement presentation of assets, liabilities, equity and profit and loss accounts.

Text: Auditing: Principles and Procedures—Holmes—(Irwin)

Lectures: Three hours a week, two semesters.

307: Accounting Seminar

Prerequisite: Accounting 302

An intensive study of problems of income determination and asset valuation and current developments in accounting research and theory. Topics will be selected from financial and managerial accounting, taxation, auditing and other fields related to accounting.

Text: Accounting Theory—Hendriksen—(Irwin)

Lectures: Two sessions a week (each session two hours), one semester—half course.

308: Taxation

Prerequisite: Accounting 302

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

Lectures: Three hours a week, one semester—half course.

312: Introduction to Managerial Finance and Control

Prerequisite: Accounting 201

Business Administration 206 (commencing 1970-71)

An introductory prerequisite course for further courses in finance, control and cost accounting. Coverage of techniques common to these areas—financial analysis;

cash and capital budgeting; cost, volume, profit and incremental analysis; inventory control; economics of information; and an introduction to scientific thinking and decision theory.

Lectures: Three hours a week, one semester—half course.

313: Managerial Control — Cost Accounting

Prerequisite: Accounting 302
Accounting 312

A continuation of the study of control and costing principles and procedures, with emphasis upon managerial uses in the planning and control of operations and for special decisions.

Text: Cost Accounting—Horngren—(Prentice-Hall)

Lectures: Three hours a week, one semester—half course.

321: Introduction to Computers

Prerequisite: Accounting 302
Business Administration 206 (1970-71)

Introduction to information systems and data processing functions; systems analysis and flowcharting; computer characteristics; computer programming (FORTRAN IV); survey of other languages.

Texts: Business Information Processing

Systems—Elliott and Wasley—(Irwin)
Fortran IV: A Programmed Instruction Approach—Couger and Shannon—(Irwin)

Lectures: Three hours a week, one semester—half course.

322: Computer Applications and Management

Prerequisite: Accounting 321

Further study of computer-based management information systems; models and simulation; basic concepts of probability; selected topics from computer-dependent management techniques; problems of feasibility studies, controls, organization.

Text: Systems Analysis—McMillan and Gonzales—(Irwin)

Lectures: Three hours a week, one semester—half course.

Anthropology

Dr. John Loewenstein, Professor

150: Human Origins (New Course)

A non-technical survey of man's primate background, fossil primates and fossil man, living races of mankind, the growth and differentiation of the cultures of man

from their earliest beginnings to the birth of civilization.

Texts and selected references to be announced.

Lectures: Three hours a week, two semesters.

151: Cultural Evolution (New Course)

An introduction to the nature of culture, language and society with a non-technical survey of material culture, economic systems, social organization, religion and the arts.

Texts and selected references to be announced.

Lectures: Three hours a week, two semesters.

350: Human Origins

A technical and more intensive treatment of the content of course No. 150.

Not open to students of courses No. 150, No. 151 and No. 351.

Texts and selected references to be announced.

Lectures: Two periods of 75 minutes a week, two semesters.

351: The Birth of Civilization

A study of the earliest civilizations in the Old and in the New World: The Mediterranean East—India—China—Mesoamerica.

Open to history students, but not open to

students of courses No. 150, No. 151 and No. 350.

Texts and selected references to be announced.

Lectures: Two hours a week, two semesters.

This course should also be listed under HISTORY to replace History 300: **Pre-classical Ancient History**. No. 300 to be deleted on p. 60 of the Calendar.

Astronomy 301:

Descriptive Astronomy

Prerequisite: Mathematics 121, Physics 121, Chemistry 121

Mechanical aspects: The earth in motion, time, light, the telescope.

The solar system. Stellar astronomy.

The systems; interstellar matter. Radio astronomy.

Note: Students who register for this course may not register for any other evening lectures as the laboratory periods may be on any evening of the week depending on the weather.

Texts: Astronomy—R. H. Baker (Van Nostrand) Eighth Edition; The Observer's Handbook, (R.A.S.C.).

Lectures: Two hours a week, two semesters.

Laboratory: Two hours a week, two semesters—Full course.

Astronomy 302:

Celestial Mechanics

Prerequisite: Astronomy 301, Mathematics 222

Fundamental principles: Questions of central forces, potential and attraction. Problems of two bodies; determination of orbits, consideration of perturbations. The general integrals of the problem of in bodies.

Text: Fundamentals of Celestial Mechanics—J. M. A. Danby (Macmillan)

Reference: An introduction to Celestial Mechanics—F. R. Moulton (Macmillan)

Lectures: Three hours a week, two semesters—Full course.

Biology

Faculty:

K. Balasubramaniam, Lecturer
H. Bobr-Tylingo, Assistant Professor
B. Kapoor, Assistant Professor
R. Lewis, Lecturer
A. Rojo, Associate Professor
E. Rojo, Assistant Professor
K. Thomas, Assistant Professor

100: Principles of General Biology (Arts)

Class designed for Arts students not intending to take any other courses in Biology. This course cannot normally be

used as a prerequisite for more advanced Biology courses. Course comprises a study of general biological principles, covering the subject areas of Botany, Zoology, Human Anatomy and Physiology, Embryology, Genetics, Evolution and Ecology.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

111 (120): Principles of General Biology (Science)

Class designed for Science students or those contemplating further study in applied biological fields or other scientific areas. An essential prerequisite for other Biology courses, this course involves a detailed study of the chemical, physical and biological principles governing life processes.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

204: Botany

Prerequisite: Biology 111 (120).

A study of different plant groups (Viruses, Bacteria, Fungi, Algae, Bryo-

phytes, Ferns, Gymnosperms, and Angiosperms). Introduction to physiological processes in plants, including photosynthesis, transpiration, absorption, nutrition, enzymes and hormonal action and growth.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

205: Zoology

Prerequisite: Biology 111 (120)

Systematic study of invertebrate animals and the Chordate Classes with emphasis on phylogenetic relationships, structure and function. Consideration of principles of Zoology as revealed by the systematic treatment, including the uses of taxonomy, morphology, embryology and the theory of evolution.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

301: Invertebrates

Prerequisites: Biology 111 (120) and 205.

The study of the structure, life history, parasitic relations to man and ecology of

the main groups of land, freshwater and marine invertebrates (with emphasis on the latter).

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

302: Cytology

Prerequisite: Biology 111 or Professor's consent.

Study of structure and function of plant and animal cells, cell organelles and chromosomes in relation to heredity and development.

Texts: 1. Cell Biology — De Robertis, Nowinski and Saez (Saunders, Philadelphia).

2. The Handling of Chromosomes—Darlington and LaCour (Allen & Unwin, New York).

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

303: Biology of Fishes

Prerequisites: Biology 111 (120), 205 and 320.

A study of the embryology, anatomy, physiology and classification of the class fishes, covering the integumentary, skeletal,

muscular, nervous, digestive, respiratory, circulatory, endocrine, excretory and reproductive systems. In classification and geographical distribution, emphasis will be given to the marine fauna of the North Atlantic area and freshwater species of Nova Scotia.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

305: General Physiology

Prerequisites: Biology 111 (120), 204 and 205.

An introduction to the biological processes in living organisms from a chemical and physical point of view.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

306: Microbiology

Prerequisites: Biology 111 (120) and Chemistry 121.

Morphology, biochemical activity and classification of microorganisms (viruses, bacteria, molds, yeasts and other microorganisms).

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

307: General Genetics

Prerequisites: Biology 111 (120), Chemistry 121, Professor's consent.

Study of inheritance in plants, animals and other organisms. Consideration of the molecular and particulate bases of inheritance. Mendelian Theory and its application to evolution in natural populations.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

308: Embryology and Histology

Prerequisites: Biology 111 (120), 205 and Chemistry 121.

Early developmental processes common to vertebrate embryos.

The establishing of the body and the laying down of the organ systems as exemplified by the chick and mammalian embryos.

Text: Foundations of Embryology—Patten (McGraw-Hill).

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

309: Statistics applied to Biological problems

See Mathematics 212.

310: General Ecology

Prerequisites: Biology 111 (120), 204 and 205.

Biotic interrelations of animal and plants and the influence of the physico-chemical features of the environment.

Populations, communities, habitats and ecosystems. Applied ecology and natural selection. Field work in various habitats.

Text: Ecology—S. P. Odum (Saunders)
Lectures: Two hours a week, two semesters.

Laboratory: Field Work:—Three hours a week, two semesters.

320: Comparative Anatomy

Prerequisites: Biology 111 (120) and 205.

Evolution and Taxonomy of the five Classes of vertebrates (fishes, amphibians, reptiles, birds and mammals) with special emphasis on the comparative and contrasting aspects of the gross anatomy covering the integumentary, skeletal, muscular, nervous, respiratory, circulatory, urinogenital and endocrine systems.

Text: The Vertebrate Body—Romer, A. S. (Saunders, 1966).

Selected References: To be announced.

Laboratory Guide: Atlas and Dissection Guide for Comparative Anatomy—Saul Wischnitzer (Freeman, 1967).

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

321: Plant Taxonomy

Prerequisite: Biology 204 or Professor's consent.

Study of the principles of plant variation and classification including history, nomenclature, review of the orders and families of angiosperms and consideration of relationship between them.

Texts: 1. Taxonomy of vascular plants—Lawrence (Macmillan, New York).

2. The Evolution and Classification of Flowering Plants—Cronquist (Houghton-Mifflin, New York).

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

322: Biology of Insects

Prerequisites: Biology 111 (120), and 205.

A detailed study of the insects including

their characteristics, phylogenetic relationships and general anatomy, both external and internal. The cuticle, ecdysis, growth and metamorphosis, and the endocrine control of these phenomena. General and social behaviour. Economic and other effects of insects; their control by natural and artificial means.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

Business Administration

O. P. Cormier, Associate Professor (Chairman)

V. Baydar, Assistant Professor

D. A. Hope, Assistant Professor

Z. H. Qureshi, Assistant Professor

A. M. Ragab, Assistant Professor

Courses leading to a B.Comm. with a Major in Business Administration.

First Year

English 101

Mathematics 111

Elective

Elective

Elective

Second Year

English 123, 125-127

Accounting 201

Business Administration 201

Business Administration 206

Economics 202

Third Year

Commercial Law 201

Business Administration 305

Business Administration 306

Philosophy 120

Elective

Fourth Year

Business Administration 302 or 303

Business Administration 310

Elective

Elective

Elective

201: 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 program.

Lectures: Three hours a week, two semesters.

206: Quantitative Methods in Business Management

Prerequisite: Grade XII Mathematics or Mathematics 111.

A scientific approach to problem solving in business; model building; the system concept; linear functions and programming; nonlinear functions and relationships—differentiation and integration; nonlinear relationships in the business environment.

Lectures: Three hours a week, two semesters.

207: Statistical Analysis for Business

Prerequisite: Business Administration 206.

An introduction to statistical methods used in business with emphasis on probability theory and analysis of data.

Lectures: Three hours a week, one semester—half course.

306: Organizational Behaviour

Prerequisite: Business Administration 201.

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

the analysis of cases.

Texts: Managerial Psychology—Leavitt (University of Chicago Press).

Readings in Managerial Psychology—Leavitt and Pondy (University of Chicago Press).

Lectures: Three hours a week, two semesters.

308: Personnel Management

Prerequisite: Business Administration 201.

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.

309: Industrial Relations

Prerequisite: Business Administration 201.

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.

310: Business Policy

Prerequisites: Business Administration 201 and the equivalent of two additional

300 level Business Administration full courses.

The perspective of top management; sizing up situations, formulating policies, discovering opportunities and planning programs 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.

Text: Business Policy—Text and Cases—Learned, Christensen, Andrews, and Guth-Irwin.

Lectures: Three hours a week, two semesters.

312: Introduction to Managerial Finance and Control

Prerequisite: Accounting 201; Business Administration 206 (commencing 1970-71).

An introductory prerequisite course for further courses in finance, control and cost accounting. Coverage of techniques common to these areas—financial analysis; cash and capital budgeting; cost, volume, profit and incremental analysis; inventory control; economics of information; and an introduction to scientific thinking and decision theory.

Lectures: Three hours a week, one semester—half course.

313: Managerial Control — Cost Accounting

Prerequisite: Accounting 302; Business Administration 312.

A continuation of the study of control and costing principles and procedures, with emphasis upon managerial uses in the planning and control of operations and for special decisions.

Text: Cost Accounting—Horngren (Prentice-Hall).

Lectures: Three hours a week, one semester—half course.

314: Financial Management

Prerequisite: Business Administration 312.

Nature of the finance function; financial decisions—investment in fixed and working capital, capital structure, and dividends; financial policy formulation and administration; mergers and reorganizations.

Text: Financial Management and Policy—Van Horne (Prentice-Hall).

Lectures: Three hours a week, one semester—half course.

317: Introduction to Production Management

Prerequisite: Business Administration 201; Business Administration 206 (commencing 1970-71).

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: Written Analysis of Cases

Prerequisites: Business Administration 201, and the equivalent of two additional 300 level Business Administration full courses.

The written analysis of business cases and similar type assignments in written communication and research.

Lectures: A one semester - half course, with lectures only as supplementary to the written assignments.

319: Business and its Environment

Prerequisite: Business Administration 201; Economics 202.

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

Lectures: Three hours a week, one semester—half course.

321: Introduction to Computers

Prerequisite: Accounting 302; Business Administration 206 (1970-71).

Introduction to information systems and data processing functions; systems analysis and flowcharting; computer characteristics; computer programming (FORTRAN IV); survey of other languages.

Texts: Business Information Processing Systems—Elliott and Wasley (Irwin).

Fortran IV: A Programmed Instruction Approach—Couger and Shannon (Irwin).
Lectures: Three hours a week, one semester—half course.

322: Computer Applications and Management

Prerequisite: Accounting 306A.

Further study of computer-based management information systems; models and simulation; basic concepts of probability; selected topics from computer-dependent management techniques; problems of feasibility studies, controls, organization.

Text: Systems Analysis—McMillan and Gonzales (Irwin).

Lectures: Three hours a week, one semester—half course.

325: Introduction to Marketing

Prerequisite: Economics 202.

A study of principles and fundamental concepts of marketing and marketing management; pricing, promotion, mer-

chandising, distribution structure and marketing research.

Lectures: Three hours a week, one semester—half course.

326: Marketing Management

Prerequisites: Business Administration 201 and 325.

Managerial in focus, this course would be devoted to analysing marketing opportunities, a study of marketing activity and its organization, planning the marketing program and controlling the marketing effort.

Lectures: Three hours a week, one semester—half course.

327: Marketing Research

Prerequisites: Business Administration 207 and 325.

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

Lectures: Three hours a week, one semester—half course.

Chemistry

D. Davies, Assistant Professor

J. Elhanan, Associate Professor

E. Hayes, Associate Professor

J. Murphy, S.J., Associate Professor

A. Sabeen, Professor

121: General Chemistry

An introduction to fundamental principles, valence, molecular, ionic, molecular orbital theory, reaction rates, equilibrium, periodic table, radioactivity, introduction to organic chemistry and other basic phenomena.

Text: General College Chemistry—C. W. Keenan, J. H. Wood (Harper and Row), 3rd Ed. 1966.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

202: Elementary Physical and Analytical Chemistry

Prerequisite: Chemistry 121.

Theory and techniques of qualitative and quantitative analysis, ionic equilibria, pH, phase equilibria.

Text: Qualitative Elementary Analysis, E. H. Swift, W. P. Schaefer (W. H. Freeman & Co.).

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

203: Elementary Inorganic Chemistry

Prerequisite: Chemistry 121.

Theory of inorganic elements, periodic

classification of elements, introduction to instrumental chemistry.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

304: Organic Chemistry

Prerequisite: Chemistry 121.

A comprehensive course of organic chemistry with accent on the accepted modern theories related to aliphatic and aromatic compounds.

Text: Organic Chemistry, Brewster & McEwan (Prentice-Hall) Senior Edition 1961; Lab Manual—Lowy-Baldwin, 3rd Edition.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

306: Physical Chemistry

Prerequisites: Mathematics 121, 2nd year Chemistry courses 203, 202.

Gas laws, perfect & imperfect, review of mechanics, first law of thermodynamics, thermo chemistry, second and third laws of thermo-dynamics, changes of states, phase rule, solution equilibria. Kinetic theory, molecular speeds, mean free path, effusion, molecular collisions, viscosity, velocity

distributions, rotations & vibrations of molecules, equipartition of energy, orders of reactions, collision theory, chain-reactions, transition-state theory, equilibrium constants.

Text: Physical Chemistry—Daniels & Alberty (Wiley).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

307: Advanced Analytical Chemistry

Prerequisite: Chemistry 202.

A comprehensive extension of Chemistry 202 with particular emphasis on advanced laboratory procedures used in inorganic analysis.

Text: Fundamentals of Analytical Chemistry by D. A. Skoog and D. M. West (Holt, Rinehart and Winston, 1965).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

308: Chemical Thermodynamics

A comprehensive study of heat transfer in chemical reactions.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

407: Selected Chapters in Instrumental Analysis

Prerequisites: Chemistry 202; Chemistry 307.

A comprehensive course of modern instrumental measurements.

Text: To be announced.

Lecture, seminar and laboratory: Five hours a week, two semesters.

309: Electrochemistry

A comprehensive study of electrochemicals.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

410: Organic Qualitative Analysis

Prerequisites: Chemistry 304, 306.

A course covering the methods of detection and identification of fundamental organic chemical groups and compounds.

Text: The Characterization of Organic Compounds, McElvain (Macmillan) Revised Edition.

Laboratory and Conference: Six hours a week, two semesters.

412: Quantum Mechanics, Molecular Structures

Prerequisites: Chemistry 306, 307, 304.

An advanced course dealing with the modern day concepts of chemical bonding.

Texts: Structures of Molecules—G. M. Barrow; Atomic Spectra & Atomic Structure—G. Herzberg; Valence—C. A. Coulson; Molecular Structures—Wheatley.

Lectures: Three hours a week, two semesters.

Laboratory: By arrangement.

Classics in Translation

Vincent Tobin, Assistant Professor

120: The Classical Civilizations of Greece and Rome

A general survey of 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, the first semester to deal with Greece, the second with Rome.

203: History of Greece

A concentrated study of selected topics dealing with the main features of Greek history, stressing both the greatness and

weakness of ancient Greek society.

This course is designed as a companion and parallel to Classics 204, dealing in the same manner with the history of Rome.

Lectures: One hour a week.

Seminar: Two hours a week.

204: History of Rome

A concentrated study of selected topics dealing with the main features of Roman history, stressing both the greatness and the weakness of the Roman world.

This course is designed as a companion and parallel to Classics 203, which deals in the same manner with the history of Greece.

Lectures: One hour a week.

Seminar: Two hours a week.

Commercial Law

201:

Meaning of law; contracts; special types of contracts; real property; mortgages; partnerships; corporation; credit transactions; statutes affecting business taxation.

Text: The Law and Business Administration in Canada—Smyth & Soberman.

Lectures: Three hours a week, two semesters.

Economics

C. Y. Chao, Associate Professor

I. A. Mirza, Assistant Professor

L. B. Shaw, Lecturer

S. Swianiewicz, Professor

J. J. Vorstermans, Associate Professor

Courses leading to a B.Comm. with a Major in Economics.

First Year

English 101

Mathematics 111

Elective

Elective

Elective

Second Year

English 123, 125-127

Philosophy 120

Accounting 201

Business Administration 201

Economics 202

Third Year

Commercial Law 201

Economics 303 or Mathematics 121

Economics Elective

Elective

Elective

Fourth Year

Economics 313 or 314

Economics or Elective

Elective

Elective

Elective

101: Economic History of Europe

The economic history of Europe from the 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.

202: 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; policy; and 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.

303: Business and Economic Statistics

Functions of statistical methods; collection, analysis and interpretation of statistical data; frequency distribution; measures of central tendency and disper-

sion; probability theory; binomial, normal, and sampling distributions; testing hypotheses and estimations or parameters; index numbers; time series, regression and correlation analysis.

Lectures: Three hours a week, two semesters.

307: Money, Banking, International Payment

Prerequisite: Economics 202.

Money, its standards, supply and value; inflation and foreign exchange; Canadian Banking System and other banking systems; public finance; international monetary problems and their solutions; developments in international trade.

Lectures: Three hours a week, two semesters.

310: Development Economics

Prerequisite: Economics 202.

Alternative theories of growth and development; economic structures of developing and developed countries; economic and noneconomic 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.

311: Development of Economic Ideas

Prerequisite: Economics 202.

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.

312: International Economics

Prerequisite: Economics 202.

A credit in Economics 307 is not a prerequisite but is highly recommended.

The course offers students an analysis of theory, institutions, and policy pertaining to economic relations between nations.

Foreign exchange markets, balance of payments, adjustment mechanism and international capital flows are discussed.

The technique of the I.M.F. will be explained, together with the deficiencies of this world body. Proposals for world monetary reform will be scrutinized.

Lectures: Three hours a week, two semesters.

313: Micro-Economic Theory

Prerequisite: Economics 202.

Demand, supply, and market price; price elasticity; theory of utility; indifference

curve analysis; theory of production; cost functions; pricing and output under conditions of pure competition, monopoly, oligopoly, and monopolistic competition; linear programming; game theory; pricing and employment of resources; product distribution; general equilibrium.

Lectures: Three hours a week, two semesters.

314: Macro-Economic Theory

Prerequisite: Economics 202.

The subject matter of Macroeconomics. The economic fluctuations. The problem of measurement of macro-economic magnitudes. The Classical Macroeconomics. The Keynesian Macroeconomics. Policies for stabilization and growth.

Lectures: Three hours a week, two semesters.

315: Comparative Economic Systems

Prerequisite: Economics 202.

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 the 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.

Education (B.Ed. Courses)

401: Philosophy of Education

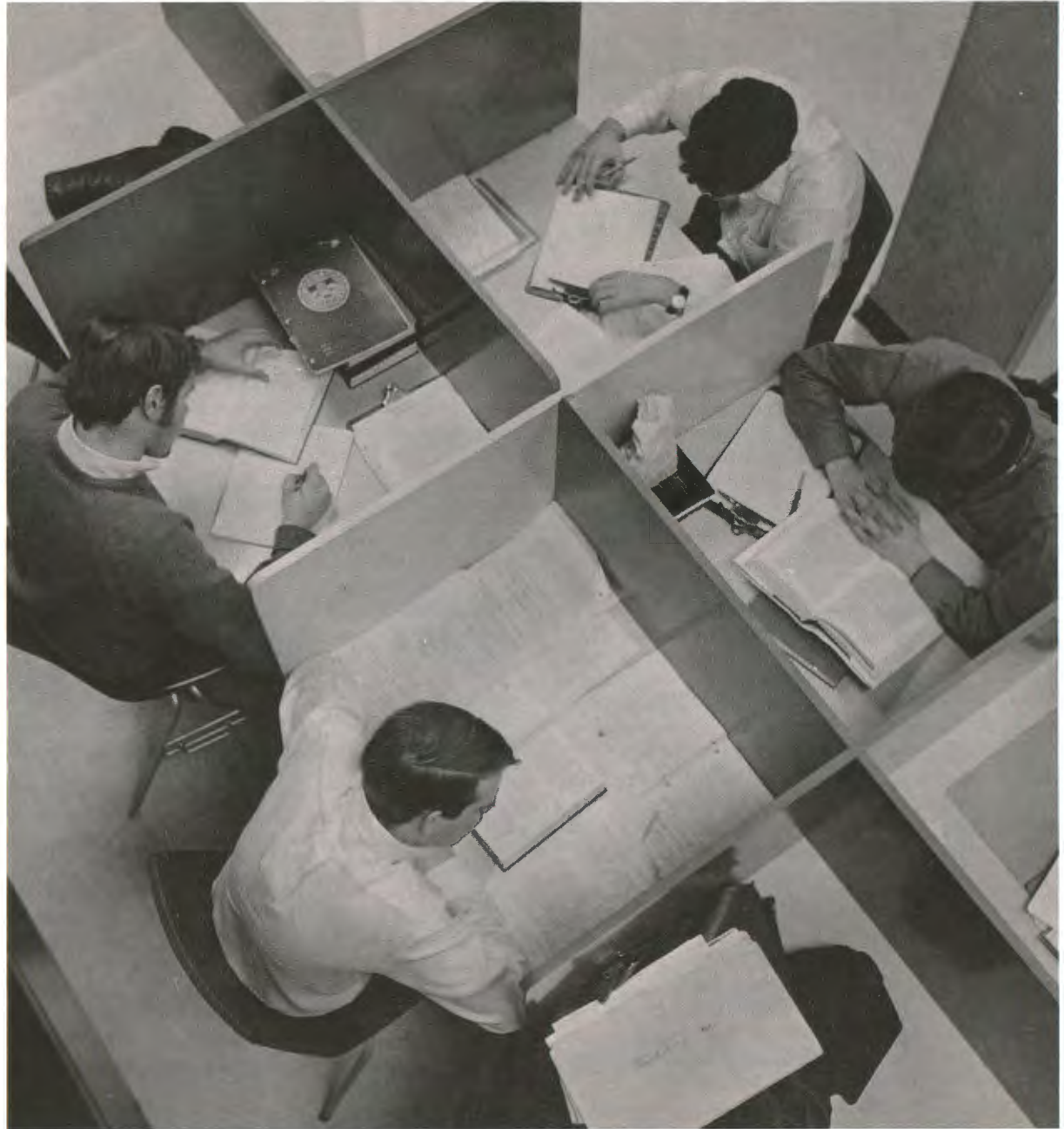
A fundamental study of the nature and aims of education culminating in the formulation of a truly humanistic Philosophy of Education for modern times. Lectures: Three hours a week, two semesters.

402: Psychology of Education

A study of the nature, equipment, growth, development, evaluation, and adjustment of the learner. Psychology 120 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: Three hours a week, two semesters.

403: General Methods of Teaching

The application of the elementary principles of Philosophy and Psychology of Education to the organization and presentation of subject matter in the classroom. Lectures: Three hours a week, two semesters.



404: History of Education

A survey of our educational heritage aimed at assisting in the formation of sound educational principles and practices. Lectures: Three hours a week, two semesters.

405: Practice Teaching

One hundred hours of observation and practice teaching in the public school system.

406: 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.

Sessions: Three hours a week, two semesters.

407: Sociology of Education

The principles connecting the social, political and economic life of the community with the education of its young. Lectures: Three hours a week, two semesters.

408: Guidance

The theory and practices of educational, vocational and personal guidance in relation to the aims of education. Lectures: Three hours a week, two semesters.

Education (M.A. Courses)

Philosophy 511: The Metaphysics of Love

A seminar and lecture course on the cultural significance of the metaphysics of love.

Sessions: Three hours a week, two semesters.

Philosophy 521: Theory of Knowledge

A lecture and seminar course based on Lonergan's *Insight* and directed towards developing an epistemology. (Supersedes Philosophy 521: Metaphysics of Thought). Sessions: Three hours a week, two semesters.

Philosophy 531: Knowledge and Myth

A seminar on the relationship of myth to human knowledge at various stages of history, including primitive cultures, Greek and Roman society, and contemporary society.

Texts: Iliad, Odyssey—Homer; Selected Dialogues—Plato; Myth and Myth Making—Murray; Greek Myths and Christian Mystery—Rahner. Sessions: Three hours a week, two semesters.

English 514: British Literature for Teachers

The cultural background and methodology for the teaching of high school English. Sessions: Three hours a week, two semesters.

English 524: Philosophy of Drama

A seminar course in the source, nature and purpose of the modern drama. Sessions: Three hours a week, two semesters.

English 534T:

A tutorial course to be adapted to the special requirements of candidates specializing in literary research.

History 516: Historical Research

A seminar and lecture course in the backgrounds required for the teaching of history. Course may be repeated if different historical periods are studied. Sessions: Three hours a week, two semesters.

Psychology 512: Psychology of Communication

A seminar and lecture course in the psychological and epistemological obstacles to good communication.

Sessions: Three hours a week, two semesters.

Psychology 532: Personality Development

A lecture and seminar course dealing with the main theories of personality and of personality development. Emphasis will be laid on the Dynamic interpretation of development, with particular reference to the school situation at all ages.

Sessions: Three hours a week, two semesters.

Psychology 542: Motivation and Learning

Prerequisite: Education 402 (Psychology of Education) and Psychology 203 (Psychology of Learning and Motivation), or the permission of the professor.

A seminar course which discusses the tenets of modern learning theory as developed through the findings of experimental psychology. The following are examples of the type of topic dealt with: development of learning theory, conditioning, reinforcement, punishment, memory,

concept learning. Application of learning theory to the classroom situation will be encouraged.

Sessions: Three hours a week, two semesters.

Psychology 552: Educational and Emotional Failure

A lecture and seminar course devoted to the study of the causes and possible remedy of failure in educational performance and in emotional adjustment, these being considered separately and also in their effects on each other.

Sessions: Three hours a week, two semesters.

Sociology 523: Advanced Sociology of Education

This is a seminar and lecture course on various phases of the social context of education.

Sessions: Three hours a week, two semesters.

Education 510: Graduate Research Seminar

A seminar in research techniques culminating in the presentation and defence of theses.

Sessions: One hour a week, two semesters.

Education 520: Educational Statistics

The purpose of this course is to develop an understanding of common statistical ideas and proficiency in the use and interpretation of certain statistical procedures in the field of education.

Sessions: Three hours a week, one semester—half course.

Education 539: Curriculum Development

A survey of the field of curriculum and instruction; principles and procedures of curriculum development.

Sessions: Three hours a week, one semester—half course.

Comparative Education 516: Anglo-American Education

A lecture and seminar course on education in the United Kingdom, the United States of America, English-speaking Canada, and selected countries with related educational patterns, aimed at the identification and analysis of common and distinguishing properties, practices and problems.

Sessions: Three hours a week, two semesters.

Comparative Education 526: Continental Education

A lecture and seminar course on education

in selected Continental European countries, including France, and selected societies with related educational patterns, including French-speaking Canada, aimed at the identification and analysis of common and distinguishing properties, practices and problems.

Sessions: Three hours a week, two semesters.

Education 519: Educational Administration

A seminar and lecture course analyzing the executive requirements for institutional direction.

Sessions: Three hours a week, two semesters.

Education 529: Educational Supervision

A seminar and lecture course in the requirements for the direction of teachers, courses, and student development in the public school.

Sessions: Three hours a week, two semesters.

Engineering

Ryan, J. L., Professor
Warner, Donald (On Leave of Absence),
Assistant Professor
Grantham, D. A., Lecturer

Reddy, V. R., Lecturer
Mulrooney, D. L., Lecturer
Bowes, H. G., Instructor

102: Engineering Measurements

A course covering the theory and practices involved in all types of engineering measurements. The course material falls into two main divisions: (1) Surveying and (2) Electrical, Mechanical and other measurements.

(1) Surveying methods, measurement of distance, difference in elevation, direction angles. Circular curves, area and earthwork calculations; applications of astronomy to engineering.

(2) Theory of measurements, analysis of experimental data. Methods and equipment for such measurements as electrical, dimensional, pressure, flow, temperature, thermal conductivity, force, strain, sound, nuclear radiation.

Text: To be announced.
Lectures: Two hour lectures, two semesters.
Laboratory: Three hours, two semesters.

103: Surveying Field Course

Prerequisite: Engineering 102.
Practical surveying problems; the orderly compilation and recording of survey data. Transit and tape surveys, curve layouts,

differential levelling. Profile plots and contour mapping. Astronomical observations.

Text: To be announced.

104: Graphics and Engineering Methods

1st term: Engineering drawing and sketching with emphasis on sketching, analysis and synthesis of problems by "thinking with the pencil", reading drawings, simple design projects.

2nd term: Basic description geometry, plotting graphs and nomographs, graphical analysis and curve fitting, manipulation of units in calculations, team design projects.

Text: Engineering Design Graphics by James H. Earle, Addison Wesley Publishing Company; Engineering Graphics and Design Problems—3, by Earle, Cleland, Stark, Mason, Bardell, Vogel and Guerard; Design and Descriptive Geometry Problems—3, by same author, Addison-Wesley Publishing Company.

Lectures: Two hours a week, two semesters.
Laboratory: Three hours a week, two semesters.

105: Principles of Engineering

An engineering course for freshmen which discusses the philosophy of pre-

liminary design and introduces the concepts of energy, economics, thermodynamics, human factors and how these concepts are used by engineers in their approach to engineering problems.

Text: To be announced.

Lectures: Three hour lectures, two semesters.

Laboratory: Three hours a week, two semesters.

201: Descriptive Geometry

Prerequisite: Engineering Drawing.

Problems on points, lines, plane and warped surfaces and development. Practical application of descriptive geometry as an engineering tool; problems related to construction, topographical, geological and mining applications.

Texts: Applied Descriptive Geometry—Warner and McNary (McGraw-Hill); Applied Descriptive Geometry Problems—Warner and Douglass (McGraw-Hill).

Lectures: One hour a week, one semester.

Laboratory: Three hours a week, one semester.

203: Graphic Statics

Prerequisites: Engineering 104, Mathematics 121 (concurrently).

Equilibrium polygon and polygonal frames for all systems of loads; graphical representation of shear and moment for

noncontinuous beams; roof trusses, bents, including dead and live loads with fixed ends and ends on rollers; simple cantilevers.

Text: Mechanics for Engineers—Beer & Johnson.

Lectures: Two hours a week, one semester.

Laboratory: Three hours a week, one semester.

204: Computer

An introduction to computer methods and the analysis of Engineering problems using the computer, including: introduction, history, philosophy, Number Systems, Computer logic, logic circuits, the physical computer components, machine language and finally Fortran IV language.

Text: A Guide to Fortran IV Programming 9—McCracken (Wiley).

Lectures: Three hours a week, one semester.

Laboratory: Three hours a week, one semester.

301: Kinematics

Prerequisites: Engineering 104, Mathematics 122.

Displacement diagrams for linkages, instant centers, layout and drawing of some common mechanisms.

Velocity determinations for linkages using instant centers and velocity vectors.

Acceleration determination with the use of acceleration diagrams, coriolis acceleration. Solution of velocity problems by analytical methods.

Text: Mechanism Problems—Series A—Hall & Azpell (Pitman Publishing Corporation); Kinematics of Machines—Hinkle (Prentice-Hall).

Lectures: Three hours a week, two semesters.

302: Engineering Mechanics (Dynamics)

Prerequisites: Mathematics 121, Mathematics 303 (concurrently).

Force, friction, determination of centroids and moments of inertia. Rectilinear, curvilinear and rotational motion of particles and solid bodies; work, energy and power, impulse and momentum.

Text: Mechanics for Engineers—Beer & Johnson.

Lectures: Three hours a week, two semesters.

303: Fluid Mechanics

Prerequisite: Mathematics 121.

A study of fundamentals of fluid mechanics based on an engineering science approach to compressible and incompressible fluids. Fluid properties and characteristics; fluid statics; conservation of mass and energy; Euler's equation of motion and

Bernoulli's equation, impulse momentum in steady flow; and introduction to the boundary layer concept.

Text: Principles of Fluid Mechanics—Kenyon (Ronald).

Lectures: Three hours a week, one semester.

Laboratory: Three hours a week, one semester.

304: Strength of Materials

Prerequisites: Graphic Statics 203, Mathematics 303 (may be taken concurrently).

An analytical treatment of stress-strain relationships for tension, compression and shear; Matrix methods; torsion in shafts; axial force, shear force, and moments in beams; design of members; deflection methods; columns; and statically indeterminate problems.

Physical properties of common materials used in structures and machines including metallic, inorganic non-metallic and organic materials; testing and failure of materials under static and dynamic loads; alloying; heat treating; and testing machines and standard tests.

Text: Mechanics of Materials—Olsen (Prentice-Hall).

Lectures: Three hours a week, one semester.

305: Electric Circuits

Prerequisite: Mathematics 121.

Circuit elements; Ohm's Law, Kirchoff's Laws, equilibrium equations (mesh and node); the principle of duality; network theorems; energy and power; complex impedance and the use of phasors; steady state analysis of circuits; two-terminal networks; two-terminal-pair networks and basic measurements.

Text: Electrical Engineering Circuits—H. H. Skilling (Wiley).

Reference: Networks, Lines and Fields—J. D. Ryder.

Lectures: Three hours a week, two semesters.

306: Engineering Thermodynamics

Prerequisites: Physics 202, Mathematics 121.

The development of the general energy equation and the First Law; the Carnet Cycle and the development of the entropy concepts, steam power plants, refrigeration and gas engine applications.

Text: Thermodynamics—Van Wylen (Wiley).

Lectures: Three hours a week, one semester.

Laboratory: Three hours a week, one semester.

307: Energy Conversion

Prerequisites: Mathematics 222, Physics 222, Engineering Thermodynamics 306, Fluid Mechanics 303 (may be taken concurrently).

Theoretical heat engine cycles, modification of theoretical cycles in practice.

Principles of operations of internal combustion engines, efficiencies and balance sheet. Principles of operation of steam engine; steam nozzles and turbines; gas turbines and elementary jet propulsion. Reciprocating pumps, centrifugal pumps; water turbines; impulse and reaction turbines.

Text: To be announced.

Lectures: Three hours a week, two semesters.

English

Roger Crowther, Associate Professor
Janet Baker, Lecturer

Dr. Lilian Falk, Assistant Professor

T. Edward Flynn, Associate Professor

Roger A. MacDonald, Assistant Professor

David Pigot, Assistant Professor

Reverend J. E. Power, S.J., Assistant Professor

Andrew T. Seaman, Assistant Professor

John K. Snyder, Assistant Professor

Dr. H. P. Upadhyay, Assistant Professor

Terrence A. Whalen, Lecturer
Francis Murphy, Part-time Instructor

101: Critical Reading and Writing

A required first course designed to help the student to read with discrimination and to help him improve his writing.

126: Introduction to the Modern Novel
(Mr. Flynn)

Lectures: Three hours a week, two semesters.

N.B.: The following courses at the 120-199 level are ½ course credits and will consist of three hours a week for one term only. A student must obtain a pass in two of these courses to qualify for a credit in English. Students are urged to register in September for the two courses of their choice. No change will be allowed after this date:

Fall Term:

128 Faulkner (Mr. Snyder)
129 Conrad (Mr. Whalen)
130 Dryden (Mr. Crowther)
131 Keats (Miss Baker)

Spring Term:

132 Hemingway (Mr. Snyder)
133 Mark Twain (Mr. Whalen)
134 Swift (Mr. Crowther)

135 Ben Jonson (Miss Baker)

The following courses may be taken with the approval of the department. A course number followed by an asterisk (*) means that this course will *NOT* be given in the academic year 1969-1970.

N.B.

NORMALLY a course at the 120-135 level is prerequisite to the following:

- 301 17th Century Literature
- 302 Neo-Classicism
- 303 Romanticism
- 304* Victorian Literature
- 321 Middle English: 1100-1400
- 323* The Novel: Defoe to Austen
- 324 Modern Poetry
- 326* Literary Criticism
- 331* Chaucer and his Contemporaries
- 333* The Novel: Dickens to Lawrence
- 334* Literature, Thought and Art
- 335* Origins and Developments of the English Language
- 336* Elizabethan and Jacobean Drama Excluding Shakespeare
- 337 Shakespeare: Poems and Plays
- 338 20th Century Theatre
- 339 19th Century North American Literature
- 340* 20th Century North American Literature
- 401 Tradition and Dissent: James, Conrad,

Lawrence and Faulkner
403 Special Author (by arrangement only)

Fine Arts:

Dr. D. Fogarty, S.J.

121: Sculpture

Experience with the models, methods, and materials of three dimensional art form with emphasis upon the application of such experience to the more abstract values of the humanities.

This course may be taken for credit in any program towards the degree of Bachelor of Arts.

Lectures: Three hours a week.

French

Rev. F. J. Devine, S.J., *Chairman*, Associate Professor

Gilles Cossette, Lecturer
Mildred Harrington, Instructor
Guy LePierres, Assistant Professor
Arthur Murphy, Assistant Professor

N.B. Courses beyond the 102 level are taught in French.

102: Oral and Written French

Prerequisite: Junior Matriculation French.

Course description: Intensive study of the basic structures of the language. Oral practice. Written composition.

Text: Oral and Written French—Stack (Oxford).

Lectures: Three hours a week, two semesters.

Language Laboratory: Three half hours a week, two semesters.

120: Intermediate Oral and Written French

Prerequisite: Senior Matriculation French, or French 102.

Course description: The purpose of this course is to help the student to develop proficiency in the use of the spoken language. The course also includes the writing of free compositions in French on topics of current interest.

Text: Le Français Accélééré—Mauger et Bruézière (Hachette); Prononciation Française—J. V. Pleasants; French Reference Grammar—Fraser, Squair and Parker (Copp Clark); Larousse French English Dictionary.

Lectures: Three hours a week, two semesters.

Language Laboratory: Three half hours a week, two semesters.

200: Introduction to French Literature

Course description: A study of the main

trends in French Literature through the centuries. Their relation to similar movements in English Literature. Stress will be laid on the accurate meaning of the vocabulary of literary discussion. The course will be illustrated by a selection of short texts in prose and verse.

Text: Lectures Classiques et Modernes—Hall et Michaud (Odyssey); Harrap Concise French English Dictionary.

Lectures: Three hours a week, two semesters.

300: XVI Century French Literature

Texts: XVIe Siècle—Lagarde et Michard (Bordas); Rabelais—Oeuvres (Extraits) 2 vols. (Classiques Larousse); Montaigne—Essais, 3 vols. (Nouveaux Classiques Larousse).

Lectures: Three hours a week, two semesters.

301: XVII Century French Literature

Texts: XVIIe Siècle—Lagarde et Michard (Bordas); Cinna—Corneille; Iphigénie—Racine; Les Précieuses Ridicules—Molière.

Lectures: Three hours a week, two semesters.

302: XVIII Century Literature

Texts: XVIIIe Siècle—Lagarde et Michard (Bordas); Candide—Voltaire;

Discours sur l'origine et les fondements de l'inégalité parmi les hommes—Rousseau
Le Mariage de Figaro—Beaumarchais.

Lectures: Three hours a week, two semesters.

307: XIX Century Romanticism

Texts: XIXe Siècle—Lagarde et Michard (Bordas); Atala—Chateaubriand; Ruy Blas—Hugo; Poésies Choisies—Musset.

Lectures: Three hours a week, two semesters.

308: XIX Century Realism

Texts: Le Rouge et le Noir, La Chartreuse de Parme—Stendhal; Madame Bovary, L'Education Sentimentale—Flaubert.

Lectures: Three hours a week, two semesters.

309: XX Century Literature from 1900 to 1950

Texts: XX Siècle—Lagarde et Michard (Bordas); L'Otage—Claudel; Les Grand Meaulnes—Alain-Fournier; Vol de Nuit—Saint-Exupéry; Theresa Desqueyroux—Mauriac; Antigone—Anouilh; La Peste—Camus.

Lectures: Three hours a week, two semesters.

312: French Canadian Literature

A general survey of French Canadian Literature with special emphasis on the novel from 1930 to the present day.

Text: *Littérature Canadienne Française*—Baillargeon (Fides).

Lectures: Three hours a week, two semesters.

313: French Civilization

A study of France and of the French people, history, political institutions, social, economic and cultural life.

Text: *Guide France* (Hachette); *France de Nos Jours*—Carlut et Brée (Macmillan).

Lectures: Three hours a week, two semesters.

314: Evolution of the French Novel

Course description: An examination of the principal stages in the development of the French Novel.

Texts: *La Princesse de Cleves*—De la Fayette; *Manon Lescaut*—l'abbé Prevost; *La Nouvelle Héloïse*, extraits—Rousseau; *Eugénie Grandet*—Balzac; *Le Rouge et le Noir*—Stendhal; *Madame Bovary*—Flaubert; *L'Assommoir*—Zola; *Du côté de chez Swann*—Proust; *La Condition Humaine*—Malraux; *L'Étranger*—Camus; *La Modification*—Michel Butor.

Summer reading is strongly advised.

Lectures: Three hours a week, two semesters.

315: The French Theatre

Course description: A study of some of the major works of French dramatic literature.

Texts: *Le Cid*—Corneille; *Le Bourgeois Gentilhomme*—Molière; *Andromaque*—Racine; *Le jeu de l'amour et du hasard*—Marivaux; *Le Barbier de Séville*—Beaumarchais; *Lorenzaccio*—Musset; *Les Corbeaux*—Becque; *Siegfried*—Giraudoux; *La Reine Morte*—Montherlant; *Les Mains Sales*—Sartre.

Lectures: Three hours a week, two semesters.

316: Poetry in France

Course description: A study of the evolution of French poetry from the Middle Ages to the present day.

Lectures: Three hours a week, two semesters.

Geology

D. Hope-Simpson, Associate Professor
Q. Siddiqui, Assistant Professor

111: Introduction to Geology

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.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

Field work as specified.

201: Crystallography and Mineralogy

Morphological classification and atomic structure of crystals; chemical mineralogy and determinative mineralogy.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

202: Palaeontology

Fossils, their nature and mode of preservation. The morphology, classification and stratigraphic ranges of the main groups of invertebrate fossils. Elementary vertebrate palaeontology.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

301: Optical Mineralogy and Petrology

Prerequisite: Geology 111.

Prerequisite or concurrent: Physics 111,
Chemistry 121; Geology 201.

The optical properties of minerals. The description and interpretation of igneous, sedimentary and metamorphic rocks.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

302: Stratigraphy and Historical Geology

Principles of stratigraphy. Historical Geology and Tectonic Evolution of North America. Principles of Stratigraphic Palaeontology; Palaeo-ecology; Facies; Faunal and Floral Assemblages.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

303: Structural and Field Geology

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.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

German

Dr. Roman Nahrebeckyj, Assistant Professor

100:

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: To be announced.

200:

Prerequisite: German 100

This course presents an intensified study of grammar and syntax and the reading of German texts.

Text: A Practical German Review Grammar—Emory E. Cochran.

250: German Literary Prose

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.

Text: To be announced.

300: Modern German Literature

A study of trends in modern German literature (Naturalism, Impressionism, Expressionism).

History

Dr. J. R. MacCormack, *Chairman*, Associate Professor

Dr. S. Bobr-Tylingo, Associate Professor

Robert J. Bollini, Assistant Professor

Mrs. E. Chard, Assistant Professor

Burkhard Kiesekamp, Lecturer

Dr. John Loewenstein, Professor

Wallace G. Mills, Lecturer

Dr. Keith Sutherland, Assistant Professor

Mrs. Mary Sun, Assistant Professor (part-time)

111 (120): Civilization in the West

A survey course designed to explore the origins and development of the characteristic political, legal and cultural institutions of western civilization and their impact on other cultures.

Text: *Civilization in the West*—Brinton, Christopher and Wolff.

Lectures: Three hours a week, two semesters.

202: History of Canada

A survey from the earliest times to the

present, with emphasis on the French regime, the rivalry with Great Britain for control of the continent, British colonial rule, Confederation and the development of Dominion status.

Text: To be announced.

Lectures: Three hours a week, two semesters.

203: The Twentieth Century

An historical 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 an industrial society.

Text: *Twentieth Century Europe*—C. E. Black and E. C. Helmreich.

Lectures: Three hours a week, two semesters.

204: Europe, 1815-1954

An introduction to nineteenth and twentieth century Europe with particular emphasis on the diplomatic background of the first and second World Wars.

Lectures: Three hours a week, two semesters.

207: An Introduction to American History

A course for Freshmen or Sophomores

not majoring in History, or History Honours. Attention will be given to the central themes of American history from the Revolution to World War I. Emphasis will be on the Revolution, Civil War, Economic Imperialism and the development of the American economy.

Text: A Short History of the United States—Allan Nevins and Henry Commager.
Lectures: Two hours a week, two semesters.

300: Pre-classical Ancient History

Prerequisite: One university History course.

This course deals with the Birth of Civilization in the 'Mediterranean East'. It surveys the history of Egypt and Mesopotamia, starting with the invention of writing shortly before 3000 B.C., and ending with Alexander's victory over the Persians in 330 B.C.

Illustrated with slides and filmstrips.

Text: To be announced.
Lectures: Two hours a week, two semesters.

301: History of Canada to 1867

French Canada with special reference to its culture, the personalities of the period, and the struggle with the British for possession of the region. The British attempts to incorporate British North

America into the British colonial system.

Text: To be announced.
Lectures: Two hours a week, two semesters.

302: History of Canada, 1867 to present

Confederation, the development of Dominion status, Canada's role in the two World Wars and international affairs.

Text: To be announced.
Lectures: Two hours a week, two semesters.

303: Tudor and Stuart England

The history of England with special emphasis on the development of the English parliament.

Text: The Tudors and Stuarts—M. M. Reese
Lectures: Two hours a week, two semesters.

306: Monarchy, Revolution and Empire

The attempts of European societies to create a valid polity after the shocks of the Renaissance and Reformation. The course examines the political, economic, social and intellectual history of Europe from the end of the Thirty Years War to Waterloo (1648-1815).

Lectures: Two hours a week, two semesters.

309: The Pre-Reformation Church

A detailed study of the various problems, political, intellectual, and religious, which had their origin during the period of early medieval Christendom, reached their climax towards the late middle ages, and resulted in the Reformation.

Texts: A History of the Church, Vol. III: The Revolt against the Church: Aquinas to Luther—Hughes, Philip (Sheed and Ward, New York).
Lectures: Two hours a week, two semesters.

311: Medieval England

Emphasis will be placed on constitutional developments and church-state relations.

Texts: From Alfred to Henry III—Brooke, The Later Middle Ages—Holmes.
Lectures: Two hours a week, two semesters.

312: Medieval Europe

The main currents of medieval European history with special emphasis on the intellectual and cultural aspects.

Texts and Readings: To be announced.
Lectures: Two hours a week, two semesters.

313: Europe, 1815-1870

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.

Text: A History of Europe 1815-1939—
J. A. R. Marriott
Lectures: Two hours a week, two semesters.

314: Europe, 1870-1945

Text: A History of Europe—J. A. R. Marriott.
Lectures: Two hours a week, two semesters.

315: 19th Century England

The course examines the relationship between social change and political structure in a major power of nineteenth century Europe with particular emphasis on the emergence of new values in a society at once insular and European.
Lectures: Two hours a week, two semesters.

316: Foundations of American History: Colonial Period to 1815

A course which is concerned with the foundations 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.

Text: The Roots of American Civilization—Curtis Nettels
Lectures: Two hours a week, two semesters.

317: America in the Nineteenth Century

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, expanding into the West, waging a Civil War and the triumph of the industrialists.

Text: A Short History of the United States, plus selected articles—Allan Nevins and Henry Commager.
Lectures: Two hours a week, two semesters.

318: America in the Twentieth Century

A course concerned with the rise of financial capitalism and the United States as a world power.

Text: A Short History of the United States, plus selected articles—Allan Nevins and Henry Commager.
Lectures: Two hours a week, two semesters.

401: The Puritan Revolution and the Cromwellian Protectorate

A pro-seminar with particular emphasis

on political and economic changes during the Puritan Revolution.
Lectures: Two hours a week, two semesters.

402: The Era of the French Revolution

The background, course and impact of the French Revolution.
Lectures: Two hours a week, two semesters.

403: German Foreign Policy, 1890-1945

The history of Germany with special emphasis on German foreign policy.
Lectures: Two hours a week, two semesters.

404: British Foreign Policy, 1890-1945

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.
Lectures: Two hours a week, two semesters.

405: United States Foreign Policy, 1890-1945

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 up to 1941.
Lectures: Two hours a week, two semesters.

406: The Politics of the Peace Settlement 1919-1921

A seminar in which students will be expected to work closely in the documentary sources.
Lectures: Two hours a week, two semesters.

408: Church and State through the Ages

An inter-departmental seminar made possible by the co-operation of the following departments: History, Philosophy, Political Science, and Theology.

409: The Era of the American Civil War

A course concerned with the causes and impact of the American Civil War.
Text: Selected articles, and extensive outside reading.
Lectures: Two hours a week, two semesters.

410: A Period in the History of Nova Scotia

A course designed 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 presentation of papers on given topics as well as discussion of these papers and related topics.
Lectures: Two hours a week, two semesters.

Latin

Vincent Tobin, Assistant Professor
Rev. M. J. O'Donnell, S.J., Associate Professor

101:

A course in the essentials of Latin for students who have not completed Matriculation Latin. A credit will be given on completion of Latin 102.

Text: Latin Course for Schools, Part I and Part II, Ch. 1-27 Incl.—Wilding.
Lectures: Four hours a week, two semesters.

102: 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.
Literature: Cicero's Pro Archia.
Text: Latin Course for Schools, Part II, Ch. 27 to end and Part III—Wilding.

Lectures: Three hours a week, two semesters.

120: Introduction to Latin Epic Poetry

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

Text: Outline of Latin Prose Composition—Vincent and Mountford; Aeneid: II, VI—Vergil; Aeneid (complete - in translation)

Lectures: Three classes a week, two semesters.

200:

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

Text: Odes, Satires, Ars Poetica—Horace.

Lectures: Three periods a week (or equivalent), two semesters.

300:

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

Lectures: Three hours a week, two semesters.

301: Cicero's Rhetoric

An intensive study of Cicero's Rhetoric. Prose Composition.

Text: Pro Lege Manilia, Pro Marcello, Pro Ligario.

Lectures: Three hours a week, two semesters.

302:

A tutorial course on Cicero (De Amicitia, De Senectute) and Lucretius (De Rerum Natura). Roman History from its beginnings to the end of the Republic.

400:

A tutorial course; directed readings and research; ecclesiastical Latin or Latin Philosophical sources.

Mathematics

Frank Jackson, *Chairman*, Associate Professor

Hugh D. Cochrane, Assistant Professor
P. Ewer, Lecturer

Dr. D. Kabe, Associate Professor

John D. Lammin, Lecturer

Dr. K. Singh, Assistant Professor

Dr. Y. P. Singh, Assistant Professor

Dr. J. K. Wani, Associate Professor

Barry White, Instructor (Part-time)

111: Algebra and Trigonometry

Prerequisite: Grade XI Mathematics.

Mathematical method. The real number system. Elementary algebra. Linear and quadratic equations. Elements of vector and matrix algebra. Inequalities. Functions, relations, and graphs. Exponential and trigonometrical functions. Analytic geometry; circle, parabola, ellipse, and hyperbola.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Tutorial: Two hours a week, two semesters.

112: New Course: Mathematics for Liberal Arts Students

Prerequisite: Grade XI Mathematics.

A course intended to illustrate various aspects of modern mathematics. The material may differ from year to year. Problems and written assignments will form an integral part of the course. This course does not contain any formal material prerequisite for more advanced courses and students cannot proceed further in mathematics on the strength of a credit in this course.

121: Calculus I

"Classes will be divided, as far as is practical, into several groups to cater for

varied requirements."

Prerequisite: Grade XII Mathematics or Mathematics 111.

Inequalities, absolute values, functions and their graphs. Elements of analytic geometry: line, circle, ellipse, hyperbola, parametric equations, polar co-ordinates. Limits, derivatives, integrals and their applications to algebraic, rational, trigonometric, inverse trigonometric, logarithmic and exponential functions. Elementary application of calculus. Algebra of complex numbers.

Text: Calculus in the First Three Dimensions—S. K. Stein.

Lectures: Three hours a week, two semesters.

Tutorial: One hour a week, two semesters.

209: Mathematics for Management

"Not acceptable as a credit towards either a B.Sc. degree or a major in Mathematics."

Prerequisite: Grade XII Mathematics or Mathematics 111.

Solution of algebraic equations, functions and their graphs, business applications. Compound interest and annuities. Linear inequalities and linear programming. Calculus: differentiation and integration of functions, business applications involving maxima and minima, etc. Sets, subsets, and applications. Elements of symbolic logic. Probability and statistics, applica-

tions to consumer surveys.

Text: Applied Mathematics: an Introduction—S. D. Theodore.

Lectures: Three hours a week, two semesters.

Tutorial: One hour a week, two semesters.

212: Applied Statistics

Prerequisite: Mathematics 121, 209, or permission of the Department.

The syllabus of this course is similar to that of Mathematics 213 but the treatment will be less rigorous. The emphasis will be on applications.

Text: Mathematical Statistics—J. E. Freund.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

213: Statistics I

Prerequisite: Mathematics 121, with 222 concurrently.

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 of random variables. Sampling distributions, chi-square, F and T distribu-

tion. Point and interval estimation. Tests of hypotheses. Linear regression and correlation. Bivariate normal distribution. The method of least squares.

Text: Mathematical Statistics—J. E. Freund.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

222: Calculus II

Prerequisite: Mathematics 121.

Argand plane. Vectors, matrices and determinants. Vector algebra. Infinite sequences and series. Convergence. Taylor's series. Partial differentiation. Ordinary differential equations. Laplace transform. Arc lengths. Multiple integrals. Applications to simple numerical analysis.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Tutorial: Two hours a week, two semesters.

225: Introductory Numerical Analysis

Prerequisite: Mathematics 121 and 222 concurrently.

Principles of digital computing. Truncation and roundoff error. Finite differences. Iterative techniques. Interpolation. Algebraic equations. Numerical differentiation

and integration. Quadratures. Differential equations. Error analysis.

Competency in a programming language must be demonstrated.

(The Watfor compiler on Dalhousie University's IBM 360/50 will be used to run programmes.)

Text: To be announced.

Lectures: Three hours a week plus laboratory periods, two semesters.

250: Analysis I

Prerequisite: Mathematics 111, with 121 concurrently.

Set Theory. Countability Sequences. Analysis on the real line. Convergence. Continuity. Uniform Continuity. Applications to Calculus. Elementary Theory of Metric Spaces. Application to Differential and Integral Equations.

305: Theory of a Complex Variable

Prerequisite: Mathematics 222 with 333 concurrently.

The complex plane. Elementary transformations and mappings. 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. The gamma, Bessel and Legendre functions. Asymptotic expansions.

Text: To be announced.

Lectures: Three hours a week, two semesters.

306: Fundamental Concepts of Mathematics

Prerequisite: Mathematics 222.

An examination of the axioms of geometry from Euclid to Hilbert. Formal axiomatics. Algebraic structure. The real number system, set theory, and logic. Elements of the philosophy of mathematics. Problems will constitute an integral part of the course.

Text: An introduction to the Foundations and Fundamental Concepts of Mathematics—Eves and Newsom.

Lectures: Three hours a week, two semesters.

312: Linear Algebra

Prerequisite: Mathematics 121, with 222 concurrently.

Abstract systems. Fundamental properties of vector spaces. Linear transformations and matrices. Linear equations and determinants. The Hamilton-Cayley theorem. Canonical forms. Metric concepts. Functions of matrices.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Tutorial: One hour a week, two semesters.

314: Statistics II

Prerequisite: Mathematics 213, with Mathematics 222 concurrently.

Non-parametric methods; simple tests and estimation of hypotheses. Elements of sampling theory. Analysis of variance and related design of experiments.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

325: Ordinary Differential Equations

Prerequisite: Calculus 222.

Classical techniques of solving first and second order equations. Systems of equations. Series solutions. Transform methods. Non-linear equations. Isoclines, and phase plane analysis. Various applications will be discussed in detail.

Texts: To be announced.

Problems—Boyce and da Prima.

Non-Linear Differential Equations—Davies and James.

Lectures: Three hours a week, two semesters.

333: Calculus III

Prerequisite: Mathematics 222.

Uniform convergence. Series and limits. Fourier series. Vector algebra and matrices. Ordinary and partial differential equations.

Laplace transform. Multivariable calculus. Jacobians.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Tutorial: Two hours a week, two semesters.

350: Analysis II

Prerequisites: Mathematics 250, 222 with 333 concurrently.

Elementary Topology. Metric Spaces. The Stone-Weierstrass Theorem. The Baire Category Theorem and applications. Equicontinuity and the Ascoli-Arzelà Theorem. Named linear spaces. The Hahn-Banach Theorem. Introduction to Hilbert Space. Stieltjes integral. Lebesgue integration. Fourier Series.

Text: To be announced.

Lectures: Three hours a week, two semesters.

415: Theory of Statistics

Prerequisites: Mathematics 222, and 312. (Mathematics 213 is desirable but not essential.)

Fundamental concepts and theorems of probability; Distribution functions as probability models for the discrete and continuous cases; Moment generating functions; Sampling distributions; Point and interval estimation; Statistical inference

and hypotheses testing; Correlation and regression analysis.

Text: To be announced.

Lectures: Three hours a week, one semester—half course.

416: Stochastic Processes

Prerequisites: Mathematics 333 and 312.

Probability models for physical situations; Branching processes; Random walk; Markov chains; The Poisson Processes; The pure birth and death process; Waiting line and serving problems.

Text: To be announced.

Lectures: Three hours a week, one semester—half course.

417: Introduction to Statistical Decision Theory

Prerequisites: Mathematics 222, and 312. (Mathematics 213 is desirable but not essential.)

Statistical decision problems; Bayes decision rule; Linear programming and its applications to statistical decision problems; Minimax Wald sequential rule; Conventional statistical theory and decision theory.

Text: To be announced.

Lectures: Three hours a week, two semesters—full course.

450: Analysis III

Prerequisites: Mathematics 350, 333.

Topics to be chosen from General Topology, Measure Theory, Functional Analysis, Harmonic Analysis.

Text: To be announced.

Lectures: Three hours a week, two semesters.

452: Partial Differential Equations

Prerequisites: Mathematics 305 and 333.

Derivation of standard second order equations. Method of characteristics. Greens functions. Separation of variables, Poisson's integral. Integral transforms with emphasis on Laplace methods. Special functions.

Text: A First Course in Partial Differential Equations—H. F. Weinberg.

Lectures: Three hours a week, two semesters.

455: Applied Complex Variable

Prerequisites: Mathematics 305, 333, 250, 325.

Conformal mapping. Integral transforms. Sturm-Liouville theory. Special functions and their applications. Asymptotic methods. Special techniques. Applications.

Text: Functions of a Complex Variable—Carrier, Krook & Pearson.

Lectures: Three hours a week, two semesters.

456: Topics in Applied Mathematics

Prerequisites: Mathematics 305, 333, 250, 325.

Theorems of Gauss, Stokes, and Green. Curvilinear co-ordinate systems. Fourier series and integrals. Transform methods. Tensor analysis. Perturbation techniques and asymptotic expansions. Eigen value problems. Calculus of variations. Integral equations. Numerical methods.

Text: To be announced.

Lectures: Three hours a week, two semesters.

457: Fluid Mechanics I

Prerequisites: Mathematics 305, 333, 250, 325.

Elementary theory of perfect fluids. Internal forces, conservation laws, Eulerian and Lagrangian approaches. Complex potentials, sources and sinks. Blasius' theorem, Flows past plates and cylinders.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Philosophy

Robert N. Ansell, B.A., Ph.D.
Richard H. Beis, B.A., M.A., Ph.D.
Lawrence Dewan, B.A., M.A., Ph.D.
Rolf Gruner, Ph.D.

Rowland C. Marshall, B.A., M.A.
Arthur P. Monahan, B.A., M.A., Ph.D.,
M.S.L.
William A. Stewart, S.J., B.A., S.T.L., Ph.L.

120: 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 knowing and human values.

Text: To be announced.
Lectures: Two hours a week, two semesters.
Seminar: One hour every second week.

121: Introduction to Philosophy

W. A. Stewart

This course deals with five major philosophical problems: The problem 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.

Lectures: Two hours a week, two semesters.
Seminar: One hour every second week.

122: Introduction to Philosophy

A. P. Monahan

An effort to show what philosophy is, from an examination of what it does: Selections from the history of the discipline as a background for contemporary philosophy.

Text: To be announced.
Lectures: Two hours a week, two semesters.
Seminar: One hour every second week.

123: 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.

124: Introduction to Philosophy: Logic and Methodology

R. Gruner

A description and analysis of the most important tools of formal and informal reasoning with discussion of the following

topics: Basic logical concepts; formal relations and arguments; language and meaning; informal inferences and procedures.

125: Introduction to Philosophy: Semantics, Logic and General Philosophical Issues

R. N. Ansell

The first term will be devoted to the development of precision, rigour and clarity in the students' thinking. Lectures will be supplemented by seminars in which small groups will work through exercises in logic and semantics, of an elementary character.

During the second term general philosophical issues will be discussed in lectures and seminars. Fundamental problems in ethics, philosophy of religion, philosophy of mind, philosophy of perception and theory of knowledge will be raised.

126: Introduction to Philosophy

L. Dewan

What is meant by "philosophy"? Could it exist? Has it ever existed?—Peace and war, freedom, education, propoganda, drugs, pornography: Has "the philosopher" anything worth hearing regarding these issues? Or regarding technology and the sciences? Does the human intelligence stand in need of liberation? Is a God a principle of

enslavement or of liberation?—This course discusses these questions.

Reading list: To be announced.

129: Introduction to Philosophy

R. Beis

This course will introduce the student to philosophy through the examination of problems arising within four areas of philosophy: Ethics, Philosophy of Mind, Philosophy of Science, and Philosophy of Language. Ethics will consider such problems as the nature of morality and freedom, and the relation of metaethical approaches to these problems. In the Philosophy of Mind the Mind-Body Problem and the nature of consciousness and mental phenomena will be examined. The Philosophy of Science will inquire into the nature of scientific explanation, laws, and theories. In the Philosophy of Language theories of meaning, theories of signs, and language about God will be investigated.

Texts: To be announced.

150: Modern Logic

An introduction to the methods and problems of modern logic, designed to introduce students to the theoretical structure of logic and develop facility in its techniques.

Text: To be announced.

Lectures: Three hours a week, two semesters.

200: Philosophy of Being

Prerequisite: Philosophy 120

An introduction to basic problems in metaphysics and the philosophical investigation of God; and an introduction to basic problems in theory of knowledge in the context of modern and contemporary philosophy.

Text: Insight—Bernard Lonergan

Lectures: Two hours a week, two semesters.

Seminar: One hour every second week.

250: Greek Philosophy

A history of Greek philosophy with particular emphasis on its major figures, Plato and Aristotle.

Text: A History of Ancient Western Philosophy—Joseph Owens.

Lectures: Three hours a week, two semesters.

300: Introduction to Ethics

Prerequisite: Philosophy 120

An introduction to moral philosophy designed to acquaint students with historical expressions of basic ethical problems and with contemporary analytic approaches to ethics.

Text: Approaches to Ethics—Jones, Sontag, Beckner, and Fogelin; Moral Philosophy—Garner and Rosen; various volumes from the History of Philosophy—Copleston.

Lectures and Seminars: Three hours a week, two semesters.

306: Epistemology

Prerequisite: Philosophy 120

An investigation of the problem of knowledge through a study of the epistemological thought of Bernard Lonergan.

Text: Insight—Bernard Lonergan

Lectures: Two hours a week, two semesters.

Seminar: One hour every second week.

350: Mediaeval Philosophy

A history of the major philosophical doctrines and currents in western Europe from the period of Augustine to the 15th century.

Text: History of Christian Philosophy in the Middle Ages—E. Gilson

Lectures: Three hours a week, two semesters.

351: Philosophy of Science

Prerequisite: Philosophy 120

An introduction to the main problems of the philosophy of science designed to

familiarize students with some of the contemporary analyses of scientific concepts and methods.

Text: Introduction to the Philosophy of Science—A. Pap.

Lectures: Three hours a week, two semesters.

352: British Empiricism

Prerequisite: Philosophy 120.

A history of the development of the empiricist school of British philosophy from Francis Bacon to John Stuart Mill.

Text: Readings in Bacon, Hobbes, Locke, Hume, Bentham and Mill.

Lectures and Seminars: Three hours a week, two semesters.

353: Continental Idealism, Descartes to Hegel

Prerequisite: Philosophy 120.

A lecture and seminar course to examine the development of rationalist and idealist thought from Descartes to Hegel.

Text: Readings in Descartes, Malebranche, Spinoza, Leibniz, Kant, Fichte, Schelling and Hegel.

Lectures and Seminars: Three hours a week, two semesters.

354: Metaphysics as a Knowledge of God

Prerequisite: Philosophy 120.

What is the idea of metaphysics? Is it

possible? Does it exist? This course studies these problems while introducing the student to three classical works, the *Metaphysics* of Aristotle, the *Summa Theologiae (prima pars)* of St. Thomas Aquinas, and the *Critique of Pure Reason* of Immanuel Kant.

Lectures: Three hours a week, two semesters.

402: Philosophy of the Social Sciences

Prerequisites: Philosophy 120 and a second course in philosophy.

An examination of the logical and methodological problems which arise in the social sciences and which touch upon the following topics: empirical and theoretical concepts; explanation, generalization and the formation of theories; purpose and function; values and objectivity.

Texts: Philosophy of Social Science—R. S. Rudner, Readings in the Philosophy of the Social Sciences—M. Brodbeck (Ed.)

Lectures: Two hours a week, two semesters.

Seminars: One to two hours a week, two semesters.

449: The Philosophy of Wittgenstein

Prerequisites: Philosophy 120 and a second course in philosophy.

A critical examination of Wittgenstein's

philosophy, chiefly that of the late period.

Text: Remarks on the Foundations of Mathematics. The Blue and Brown Books, Philosophical Investigations—L. Wittgenstein.

Lectures, Seminars and Tutorials: Approximately three times per week, two semesters.

452: Phenomenology

Prerequisites: Philosophy 120 and a second course in philosophy.

The origins, development, concepts, method and influence of the phenomenological movement in contemporary Philosophy.

Texts: Selections from Husserl, Heidegger, Sartre, Merleau-Ponty. The Phenomenological Movement—H. Spiegelberg, 2 vol.

Lectures and Seminars: Three hours a week, two semesters.

453: The Philosophy of History

Prerequisites: Philosophy 120 and a second course in philosophy.

A critical study of major theories and conceptions of history, and consideration of the nature and value of history, and of its principles of explanation, selection and evidence.

Texts: Significant selections and works from Augustine to the present.

Lectures and Seminars: Three hours a week, two semesters.

454: Contemporary Existentialist Thought

Prerequisites: Philosophy 120 and a second course in Philosophy.

A lecture and seminar course to examine the origins, expressions and significance of nineteenth and twentieth century existentialism.

Texts: Readings in Kierkegaard, Nietzsche, Jaspers, Heidegger, Marcel, Sartre, Camus.

Lectures and Seminars: Three hours a week, two semesters.

455: Contemporary Analytic Philosophy

Prerequisites: Philosophy 120 and a second course in Philosophy.

A lecture and seminar course to examine the origins, expressions and significance of the contemporary analytic movement in philosophy.

Texts: Readings from representative members of the Analyst School.

Lectures and Seminars: Three hours a week, two semesters.

456: Advanced Ethical Theory

Prerequisites: Philosophy 120 and a second course in Philosophy.



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, Hampshire, and Brandt.

Text: Selected readings in the above mentioned authors.

Lectures and Seminars: Three hours a week, two semesters.

457: Augustine and Aquinas on Philosophy

Prerequisite: Philosophy 120.

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 from Augustine and Aquinas.

Lectures and Seminars: Three hours a week, two semesters.

459: Philosophy of Language

Prerequisites: Philosophy 120 and a second course in Philosophy.

A seminar course to examine the role of analogy, and perceptual vocabulary.

Text: To be announced.

Seminar: Three hours a week, two semesters.

Physics

W. Loncs, S.J., Assistant Professor

G. MacNevin, Lecturer

U. Merdsoy, Assistant Professor

D. Murty, Professor

F. Tomscha, Assistant Professor

NOTE: Students failing to complete a laboratory course prior to the date of examination will not be eligible to write the examination. Marks will be awarded for the practical work and combined with the examination results for the final mark.

111: General Physics

Introduction to mechanics, sound, light, heat and electricity.

Text: Physics—White (Van Nostrand).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

121: University Physics

Tutorial (Compulsory) one hour a week.

Prerequisite: Physics 111 or a knowledge of Grade 12 Physics is necessary and it will be essential for students to be taking an Introductory Calculus course concurrently.

Topics will include: Mechanics, heat, sound, light and electricity.

Text: University Physics—Sears and Zemansky.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

222: Light, Electricity and Modern Physics

Prerequisite: Physics 121; Mathematics 222 (or concurrently).

Propagation of Light, reflection and refraction, diffraction, dispersion, optical instruments. Michelson-Morley experiment, Special Relativity. Electron Microscope, Planck's radiation, Wein's displacement, and radiative heat transfer. Photometry.

The electric field, magnetic field, potential theory, Hydrogen atom and spectra, dielectric and magnetic phenomena, elementary electromagnetic properties of solids, time dependent phenomena and Maxwell's equations.

Text: Electricity and Magnetism—Duckworth.

Ref.: Fundamentals of Optics—Jenkins and White.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

234: Introduction to Theoretical Physics

Prerequisites: Physics 222 and Mathematics 222 (concurrently);

Vectors and Scalars; Multiplication of a Vector by a Scalar; Derivative of a Vector with Respect to a single Scalar Variable; Scalar, or Dot, Product of Two Vectors; Vector, or Cross, Product of Vectors; The Gradient Vector; Scalar and Vector Fields; the Line Integral of a Vector; The Laws of Motion; Statics of a Particle; Statics of Rigid Bodies; Equilibrium of Rigid Bodies; Statics of the Suspended String or Cable; Work and Potential Energy; The Law of Gravitation; Principle of Virtual Work; Stability of Equilibrium, Motion of a Particle in a Uniform Field; One-Dimensional Motion of a Particle Acted upon by a Constant Force; Flight of a Projectile; Oscillatory Motion of a Particle in one Dimension; The Damped Harmonic Oscillator; The Forced Harmonic Oscillator; Departures from Harmonic Oscillations Motion of a System of Particles; System of Particles; Motion of a Rigid Body in a Plane; Motion of a Particle Under the Action of a Central Force; Inverse-square Field; The Orbit; Kepler's Laws; Disturbed Circular Orbits; Apsides; Accelerated Reference Systems and Constrained Motion of a Particle; Motion of a Rigid Body in Three Dimensions; Generalized Coordinates.

Text: Introduction to Theoretical

Mechanics—R. A. Beckev (McGraw).

Lectures: Three hours a week, two semesters.

333: Electromagnetic Theory

Prerequisites: Physics 222, Mathematics 222, Mathematics 333 (may be taken concurrently).

Alternating currents, development of the theory of electric and magnetic fields, solutions of Maxwell's equations, theory of light, potential, images, skin effect, multipoles.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

336: Electric Circuits—See Engineering 305

337: Atomic and Nuclear Physics

Atoms, electrons, radiations, the nuclear atom, X-rays, and atomic structure, quantum theory of radiation, special theory of relativity, group velocity and wave velocity, atomic spectra and atomic structure, the nucleus, isotopes, 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 source, particle accelerators.

Text: Nuclear Physics—Irvin Kaplan (Addison-Wesley).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

339: Physical Optics and Optical Instruments

Prerequisites: Physics 202, Mathematics 303.

Geometrical optics, optical design and instruments, Radiation laws, wave behaviour of light and formulation of theories, Stimulated radiation and coherence theory, Lasers and Q-switching.

Text: Principles of Optics—Max Born and Emily Wolf.

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

350: Electrical Measurements and Measuring Instruments

Prerequisites: Mathematics 222, Physics 333 (may be taken concurrently).

Measurements of inductance, capacitance, and resistance, potentiometers, magnetic measurements, illumination, high-voltage measurements and testing, electrical

methods of measuring temperature, eddy currents, measuring instruments, measurement of power, energy, measurement of speed, frequency and phase difference.

Text: *Electrical Measurements and Measuring Instruments*—Golding (Sir Isaac Pitman and Sons).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

351: Electronics

Prerequisites: Mathematics 222, Physics 333 (may be taken concurrently).

Electrical measurements, power supplies, application by vacuum tubes and transistors amplifier circuits, oscillators, comparison measurements, servo systems, operational amplifiers for measurement and control, electronic switching and timing and digital counting systems, an integrated system of instruments, test equipment and rapid-connect parts, electrical signals and reactive circuits.

Text: *Electronics for Scientists*—Malmstadt, Enke, and Toren (W. A. Benjamin, New York).

Lectures: Three hours a week, two semesters.

Laboratory: Three hours a week, two semesters.

450: Introduction to Mathematical Physics

Prerequisites: Physics 234, Mathematics 333.

Advanced classical dynamics of both discrete and continuous systems, elasticity and heat flow, matrices, tensors, three-dimensional problems, special relativity in classical mechanics—the Hamilton equations of motion—Hamilton-Jacobi theory—matrices—tensors—advanced classical dynamics of continuous systems—introduction to calculus of variations—elasticity—heat flow.

Text: To be announced.

Lectures: Three hours a week, two semesters.

451: Thermodynamics and Statistical Mechanics

Prerequisites: Physics 333, Mathematics 333.

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 canonical and grand canonical ensembles, and Bose-Einstein and Fermi-Dirac statistics are discussed and applied to gases, electrons in metals, and low temperature physics.

Text: *Thermodynamics and Statistical*

Mechanics—Zemansky.

Lectures: Three hours a week two semesters.

452: Quantum Mechanics

Prerequisites: Physics 333, Mathematics 333.

Wave mechanical concepts—wave equation of Schrodinger—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: *Quantum Mechanics*—Mandl (Butterworth Publication, London).

Lectures: Three hours a week, two semesters.

453: Upper Atmosphere

Prerequisites: Physics 333, Mathematics 333.

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 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, the transport properties in the upper atmosphere.

Text: *The Upper Atmosphere*—Craig (Academic Press, New York).

Reference: *Physics of the Upper Atmosphere*—Ratcliffe (Academic Press, New York).

Lectures: Three hours a week, two semesters.

Political Science

Dr. W. J. Dalton, *Chairman*, Professor
Peter Aucoin, Lecturer
Robert G. Boyd, Associate Professor
Guy Chauvin, Lecturer
Dr. T. B. Ciuciura, Lecturer
Edward J. McBride, Assistant Professor
Robert Vaison, Lecturer

121: Introductory Political Science

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.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Group Discussions: One hour a week, two semesters.

202: Democratic Government

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 liberal democratic state.

Text: To be announced.

Lectures: Three hours a week, two semesters.

203: Government and Politics in the Soviet Union and East Central Europe

A survey of the history, culture and political institutions of the old Russian Empire and the U.S.S.R. An analysis of the social and economic backgrounds of the political setting in the Soviet Union; the development and techniques of the one-party

state; the installation of Communist regimes in East Central Europe.

Text: *The Soviet System of Government*—John N. Hazard (U. of Chicago Press) and *The Soviet Union: An Introduction*—George A. Lensen (Appleton-Century-Crofts).

Lectures: Three hours a week, two semesters.

204: Canadian Government and Politics

Prerequisite: Political Science 121 or equivalent.

A study of Canada's form of constitutional democracy, encompassing an analysis of political institutions and political parties. Aspects of Canadian federalism will be discussed.

Text: *The Government of Canada*—R. M. Dawson, 4th edition, revised by N. Ward (U. of Toronto Press) and *Politics: Canada*—P. Fox ed., 2nd edition (McGraw-Hill).

Lectures: Three hours a week, two semesters.

205: International Relations

Prerequisite: Political Science 121 or equivalent.

An orienting overview of the context of world political affairs with particular emphasis on the construction of a con-

the upper stratosphere and mesosphere, the sun's radiation and the upper atmosphere, composition of the stratosphere 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, the transport properties in the upper atmosphere.

Text: *The Upper Atmosphere*—Craig (Academic Press, New York).

Reference: *Physics of the Upper Atmosphere*—Ratcliffe (Academic Press, New York).

Lectures: Three hours a week, two semesters.

Political Science

Dr. W. J. Dalton, *Chairman*, Professor

Peter Aucoin, Lecturer

Robert G. Boyd, Associate Professor

Guy Chauvin, Lecturer

Dr. T. B. Ciuciura, Lecturer

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121: Introductory Political Science

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.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Group Discussions: One hour a week, two semesters.

202: Democratic Government

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Text: To be announced.

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A survey of the history, culture and political institutions of the old Russian Empire and the U.S.S.R. An analysis of the social and economic backgrounds of the political setting in the Soviet Union; the development and techniques of the one-party

state; the installation of Communist regimes in East Central Europe.

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Lectures: Three hours a week, two semesters.

205: International Relations

Prerequisite: Political Science 121 or equivalent.

An orienting overview of the context of world political affairs with particular emphasis on the construction of a con-

ceptual framework conducive to an organized investigation of the subject matter. Illustration of theories pertaining to the international system in terms of contemporary practices of member states will be made. Special study of representative world problems, tensions, trends and developments of a current nature.

Texts: *World Tensions: Conflict and Accommodation*—Atwater, Forster and Prybyla (Appleton-Century-Crofts) and *World in Crisis: Readings in International Relations*—F. H. Hartmann ed. (Macmillan).

Lectures: Three hours a week, two semesters.

206: Comparative Study of Governments: Western Europe

Prerequisite: Political Science 121 or equivalent.

A detailed comparative analysis of the institutions and functions of the national political systems, primarily of the United Kingdom, France and Germany.

Text: To be announced.

Lectures: Three hours a week, two semesters.

212: Government and Politics of the U.S.A.

Prerequisite: Political Science 121 or equivalent.

An inquiry into the theory and practice, the nature and operation, and the form and function of the American system of government, with particular emphasis upon the overlapping spheres of the governmental structure, the constitutional order and the political process.

Text: *The American System of Government*—E. S. Griffith (Praeger).

Lectures: Three hours a week, two semesters.

308: International Law

Prerequisite: Political Science 121 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; the defects and weaknesses of the international legal system; trends in law and its probable lines of development.

Texts: *International Law: A Text*—

H. B. Jacobini (Dorsey Press), *Basic Documents in International Law*—Ian Brownlie (Oxford), and selected cases.

Lectures: Three hours a week, two semesters.

350: Introduction to Public Administration

Prerequisite: Political Science 121 or equivalent.

A study of the structure and operation of

the administrative branch of government—both in theory and in practice. Included will be an examination of the evolution of the Canadian federal public 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.

Text: To be announced.

Lectures: Three hours a week, two semesters.

355: Political Thought to the French Revolution

A 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.

Text: To be announced.

Lectures: Three hours a week, two semesters.

356: Modern Political Thought

An examination of political ideas from the French Revolution era to the present, with special emphasis on Utilitarianism, Liberalism and Marxism.

Text: To be announced.

Lectures: Three hours a week, two semesters.

359: The British Commonwealth

Prerequisite: Political Science 121 or equivalent.

The development of governmental institutions in the nations of the Commonwealth.

Text: To be announced.

Lectures: Two hours a week, two semesters.

360: 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.

Texts: The Politics of the Developing Areas—G. A. Almond and J. S. Coleman eds. (Princeton U. Press 1960) and Political Culture and Political Development—L. W. Pye and Sidney Verba (Princeton U. Press, 1965).

Lectures: Two hours and one group discussion a week, two semesters.

361: 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.

Texts: Major Governments of Asia—G. McT. Kahin ed., 2nd edition (Cornell U. Press, 1963), Ideology and Organization in Communist China—F. Schurman (U. of California Press, 1966) and Governments and Politics of Southeast Asia—G. McT. Kahin ed., 2nd edition (Cornell U. Press, 1964).

Lectures: Two hours and one group discussion a week, two semesters.

450: Seminar in the History of Political Thought

An intensive study of major trends in political thought, early and modern, with special attention to contemporary political doctrines and ideologies, their transformation in the course of history and their interrelation with social and political conditions.

Sessions: Two hours a week, two semesters.

451: Canadian Government Seminar

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.

452: Seminar in Comparative Politics

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.

453: International Studies Seminar

A seminar on the contemporary interaction of the major powers, with special consideration of selected world problems, tensions, trends and developments.

Texts and references are provided in the International Studies Research Room.

Sessions: Two hours a week, two semesters.

454: Political Parties and Voting Behaviour

An analysis of the structures and functions of individual parties and party systems, with emphasis on the United States, Canada and Britain.

Sessions: Two hours a week, two semesters.

Psychology

S. Ahmad, Lecturer
G. Gordon, Assistant Professor
C. Hayes, Lecturer
I. Lenzer, Assistant Professor

120: Introduction to Psychology

The science of behaviour. Methods and Measurement. Physiological 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.

Text: N. L. Munn Psychology (5th Edition) (Houghton-Mifflin).

Lectures: Three hours a week, two semesters.

203: Psychology of Learning

Prerequisites: Psychology 120. The student is recommended to take Psychology 205 or 212 concurrently.

Classical conditioning and instrumental learning will be studied as examples of the learning process. In addition, 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 physiological



correlates of learning will be studied.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Two hours a week, two semesters.

204: The Psychology of Sensation and Perception

Prerequisites: Psychology 120. The student is recommended to take Psychology 205 or 212 concurrently.

The physical properties of stimuli, the physiological apparatus for sensing the environment and the perceptual process for extracting relevant information from sensory data.

Text: *The World of Perception*—K. von Fieandt (Dorsey)

Books recommended: *The Human Senses*—F. A. Geldard, *Human Senses and Perception*—G. M. Wyburn, R. W. Pickford, R. J. Hirst.

Lectures: Two hours a week, two semesters.

Laboratories: Two hours a week, two semesters.

205: Experimental Design and Psychological Statistics

Prerequisites: Psychology 120. Psychology 205 or Psychology (Mathematics) 212 are compulsory for all

students wanting to take 300 level Psychology courses. Students are strongly advised to take Psychology 205 or 212 in the same year as 203 or 204.

Importance of Statistics in Psychology. Permutations and Combinations. Probability and Probability Distributions. Binomial and normal distributions. Characteristics of distributions: skewness, kurtosis, measures of central tendency and dispersion. Sampling and hypothesis testing. Parametric statistics: *t*, *F*, and chi-square tests; Analysis of Variance and Co-variance; Correlation and Regression. Non-parametric Statistics: Mann-Whitney and Wilcoxon; Friedman; Spearman's and Kendall's correlation coefficients.

Designing experiments in Psychology in the light of the above. Varying factors and Observing Changes in Responses. Interpretation of results based on experimental design and application of the relevant statistic. Emphasis in this course will be laid on applications of statistics, and upon practical analysis of results obtained in laboratory courses 203 and 204.

Text: *Basic Statistical Methods*—Downie and Heath.

Lectures and Laboratory: Three hours a week, two semesters.

212: See Mathematics 212

303: Psychology of Motivation

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212.

A study of the impelling factors in behaviour such as needs, drives and incentives. Behavioural and physiological components of hunger, thirst, sex and intracranial self-stimulation.

Text: To be announced.

Lectures: Two hours a week, two semesters.

Laboratory: Two hours a week, two semesters.

304: Comparative and Physiological Psychology

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212.

Physiological and Neural Mechanisms in Behaviour. Phylogenetic Comparisons of Behaviour. The Cortex and its Importance in the Control of Psychological Functions. Central versus Autonomic Nervous Systems. DNA, RNA, and the genetics of behaviour. Endocrine Systems. Behavioural change through Cortical Stimulation, Lesion, or chemical action. The Electro-Encephalogram. Sensory Processing, Learning and Motivation considered physiologically.

Text: To be announced.

Lectures and Laboratory: Three hours a week, two semesters.

310: Social Psychology

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212. Alternatively: Psychology 120. Psychology 205 or 212. Any 300 level sociology.

Membership of groups. Communication, interaction, language and culture. Values. Group norms, attitudes and roles. Leadership and social stratification. Authority and prejudice. Group behaviour as compared with individual behaviour. Motivation and Opinion Change. Conflict. Criminal Behaviour. Gambling and utility. Game theory. Psychoeconomics. A project will be undertaken as part of this course by students working individually or together.

Texts: Readings in Social Psychology—Newcomb, Macoby and Hartley (Holt, Rinehart and Winston), Individual in Society—Kretch, Crutchfield and Ballachey (McGraw-Hill).

Lectures: Three hours a week, two semesters.

Project: Preparation first semester; completion second semester.

311: Industrial and Applied Psychology

Prerequisites: Psychology 201 (1968-69

Calendar), 203 or 204. Psychology 205 or 212.

The Individual Within the Organization. Inter-personal relations and organizational structure. Selection, placement, training and performance. Motivation and morale. Leadership and decision-making. Psychomotor coordination in the carrying out of tasks. Cybernetics, work study, linear programming and critical path analysis.

Text: To be announced.

Lectures: Three hours a week, two semesters.

312: Cognitive Processes

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212.

Symbolic processes. Problem Solving, Creativity, Concept Formation and Rule Learning. Choice. Logic and psychology. Communication, Elements of language processing and psycho-linguistics. Perception and Memory as Determiners of the Decision-Making process.

Text: To be announced.

Lectures: Three hours a week, two semesters.

321: History of Psychology

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212, or the permission of the

Department.

Greek psychology. Arabian and Western European developments. Mediaeval and Renaissance approaches. Early scientific influences: ideas from physics, mathematics and physiology. Rationalists and empiricists. Beginnings of experimentation. Nineteenth and twentieth century theories and experiments. Psychology as a natural, biological and social science. The outlook.

Text: Brett's History of Psychology—ed. Peters (Macmillan)

Lectures: Three hours a week, two semesters.

322: Contemporary Psychology Theory and Systems

Prerequisites: Psychology 203 or 204. Psychology 205 or 212, or the permission of the Department.

The basic issues: classical and scientific psychology. Voluntary and involuntary behaviour. Responding and operant behaviour. Choice and preference. Drives and values. Uncertainty and Information. Intelligence. Symbolic processes and Language. Problems of measurement and evaluation. Interaction of psychology with the other sciences. Expectations for the near future.

Text: Text Book of Elementary Psychology—E. Galanter.

Books recommended: Elementary

Theoretical Psychology—J. G. Green,
Readings in General Psychology—W. H.
Bartz.

Lectures: Two hours a week, two semesters.

Laboratory: One hour a week, two semesters.

331: Child Psychology and Adolescent Development

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212, 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.

Text: Child Development and Personality—Mussen, Conger and Kagan (3rd edition), Readings in Child Development and Personality—Mussen, Conger and Kagan.

Lectures: Three hours a week, two semesters.



332: Clinical Psychology

Prerequisites: Psychology 201 (1968-69 Calendar), Psychology 203 or 204.

Psychology 205 or 212.

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.

Text: To be announced.

Lectures and Laboratory: Three hours a week.

333: Psychology of Personality

Prerequisites: Psychology 201 (1968-69 Calendar), Psychology 203 or 204.

Psychology 205 or 212.

Personality Theories of Freud, Jung, Adler, Fromm, Horney, Sullivan, Murray, Levin, Allport, Sheldon, Eysenck, Rogers, Maslow and others. Psychodynamic, behaviour, factor and physiological approaches to personality development. Projective and scale measures of personality. Normal and abnormal personality. Neurosis and psychosis.

Text: To be announced.

Lectures: Three hours a week, two semesters.

340: Educational and Psychological Tests and Measurements

Prerequisites: Psychology 201 (1968-69 Calendar), 203 or 204. Psychology 205 or 212.

Basic Principles: Statistical sampling and testing: psychological measurement and the construction of scales. Test construction: standardization, validity, reliability. Types of tests in common use: intelligence, aptitude, ability, personality, educational, vocational. Special tests: language, clerical, perceptual, speed, mechanical. Uses of testing and evaluation in teaching, counselling, educational and vocational selection, diagnosis and follow-up. Problems of Testing: The future of testing.

Text: To be announced.

Lectures and Laboratories: Three hours a week, two semesters.

Sociology

Rev. Daniel Rourke, S.J., Chairman, Associate Professor

Claudine Lowry, Lecturer

B. A. Nkemdirim, Lecturer

Sister Helen Ralston, Lecturer

Mrs. Jennie Tarlo, Lecturer

Christopher Thurrott, Instructor, (Part-Time)

The Sociology major consists of at least 5 courses from Sociology, and 2 from allied fields (Anthropology, Economics, History, Philosophy, Political Science, Psychology).

The major must include: Sociology 121, 200, 300; one elective from group A and one from group B.

A—302, 303, 317, 319

B—308, 316, 318, 320, 321

Prerequisite for all courses: Sociology 121

All texts to be announced.

Students who wish an elective in Sociology must select 330.

121: Introductory 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 (familial, religious, educational, economical, and political), and of major trends in society (urbanization, industrialization, bureaucratization, and the technological revolution).

200: Research Methods

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, content analysis and problems of measurement. Practical experience will be provided by means of a research project.

300: Sociological Theory

A critical examination of sociological theory with emphasis on difference and congruance in the writings of European and American scholars from Saint-Simon and Comte to Parsons and other contemporary theorists. Analysis of major sociological concepts to discover conceptual links between past usages and meanings and current trends and realities. Relationship of specific theorists and their ideas to modern times.

302: Social Problems Involving Disorganization and Deviance

A positive approach to establish proper perspectives for adjustment to personal, family, industrial, religious, social and various other problems such as addictions, health, handicaps; vocational difficulties; emotional controls and suicide; industrial hazards, community problems, national

problems, minority groups, war, population, prejudice and discrimination; family problems.

303: Criminology and Penology

The philosophies of causation and prevention of crime; types of criminal behaviour; organized crime and vice. Agencies of apprehension, trial, custody and after-care of prisoners. World trends in penological philosophy.

308: Urban Sociology

These aspects of urbanism and urbanization will be the main theme of the course: Human ecology, Urban structure and function, the Nature of the City, Urbanization as a process, the Basic Urban Institutions, Theories of Land Use and Growth and Community and Power Structure.

316: Organizational Theory (Industrial) Bureaucracy

An examination of the formal structure and bureaucratic organization of systems of modern society, deals with organizational theory in relation to occupational, professional, industrial, and work situations.

317: Sociology of Religion

A description and analysis of the nature of sociological study of religion; the

functional definition of religion; social forms of religion (myth, creed, ritual, and ethics), and the process of reification; principles of religious evolution; social functions of religion; religious personalities; religious groups and communities; religious institutions, religion and economic progress (the Weber thesis); the present religious situation.

318: Social Change

A study of the sources, patterns and consequences of social change. The views of classical and modern theorists will be evaluated in relation to patterns of change exhibited at the group, community, societal and cultural levels. This course will analyze modernization, industrialization, nationalism, and urbanization.

319: Socialization

An analysis of the process of transmitting and learning of social norms, values and roles. Including an analysis of the institutions concerned with the socialization and resocialization of children and adults, such as; the family, peer group, reference group and school.

320: Ethnic and Minority Groups

The concept of race and ethnicity; the Problems of Minority groups; ethnic

differentiation and assimilation in Canadian and American Societies; Segregation, Inequality and Race Conflict. Selected Canadian and American Minorities, Selected World Minority Groups; Race, Collective Violence; and large-scale structural change.

321: Canadian Society

An examination of the institutional framework and value basis of Canadian Society. Topics to be discussed include ethnic composition, class structure, economic institutions, political institutions and industrialization. A look will also be taken at the broad spectrum of social problems confronting Canada, both externally and internally.

330: Modern Sociology

(No prerequisites)

An advanced course for students seeking an elective in Sociology. The course content will include elements from the sociologies listed.

Spanish

Mrs. Annabelle Edwards, Lecturer
Rev. Thomas Macho, S.J., Associate
Professor

100 (120): Introduction to the Spanish Language

Concentrated study of basic structures with particular emphasis on oral aspects.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three ½ hours (periods) a week.

200: Elementary Spanish

Prerequisite: Spanish 102 or Spanish matriculation.

Continuation of work begun in Spanish 100 (120) with particular emphasis on conversation and reading with understanding. Systematic building of vocabulary through study of Spanish civilization.

Text: To be announced.

Lectures: Three hours a week, two semesters.

Laboratory: Three ½ hours (periods) a week.

302: Completion of the Audio-Lingual program

Prerequisite: Spanish 200

Particular emphasis on conversation and writing using a style and vocabulary appropriate to the material or the occasion. Building of vocabulary through study of cultural materials and especially the

anthropological concept of culture.

Texts: Audio Lingual Materials: Levels One, Two and Three respectively.

Lectures: Three hours a week, two semesters.

Laboratory: Three ½ hours (periods) a week.

303: Spanish Drama

An interpretation of the Spanish Drama from the Middle Ages to our days, with particular emphasis on modern Spanish drama and its peculiar characteristics.

Text: To be announced.

Lectures: Three hours a week, two semesters.

304: The Generation of 1898

The Spanish culture before and after this generation. Particular emphasis on Baroja, Unamuno and Ortega.

Text: To be announced.

Lectures: Three hours a week, two semesters.

305: Don Quijote

Cervantes and his time.

Text: To be announced.

Lectures: Two hours a week, and one hour seminar, two semesters.

differentiation and assimilation in Canadian and American Societies; Segregation, Inequality and Race Conflict. Selected Canadian and American Minorities, Selected World Minority Groups; Race, Collective Violence; and large-scale structural change.

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Theology

Rev. Patrick Kerans, S.J., Chairman,
Assistant Professor

Stanley Armstrong, Assistant Professor

Marshall Fightlin, Lecturer

Rev. Thomas Macho, S.J., Associate
Professor

Michael J. Mooney, Lecturer

Rev. D. MacDonald, Instructor, (Part
Time)

Colin Starnes, Instructor, (Part Time)

121: Introduction to Theology

An examination of certain important questions concerning the Bible, the Church and Morality.

Lectures and Discussions: One lecture and two discussions a week, two semesters.

301: Religious Roots of Western Culture

A study of some key religious ideas which arose among the Hebrews, the Greeks or the Church of New Testament times; and how they have influenced western culture.

Lectures and Discussions: Three hours a week, two semesters.

302: Atheistic Humanism

A study of the humanism of the Marxists and of the French existentialists, particularly their thesis, that only an atheism can be a true humanism.



Texts: Atheistic Humanism—H. de Lubac, *Atheism*—E. Borne
Lectures and Discussions: Three hours a week, two semesters.

303: Myth and History: The Problem of Interpreting Human Existence

Course description: The tragedy of human life; absurdity and meaning; attempts at meaning; the origin and nature of myth, historicism, and salvation history; attempt to work out a theology of history from scripture with a stress on promise and fulfillment; the nature of Christian hope.

305: Introduction to the Bible

A study of the history and literary form of various books in the Bible. A detailed study of the text of a Gospel and a letter of Paul.

Lectures and Discussions: Three hours a week, two semesters.

310: The Christian Understanding of Man

A study of who man is from the point of view of the Bible, Christian tradition and modern insights.

Lectures and Discussions: Three hours a week, two semesters.

311: Development of Christian Personality

A study of the notion of person and personal relationships; of the place of freedom in the development of the Christian

person; of the transforming, activating reality of grace; of the role of the Sacraments of Initiation in Christian transformation.

312: Teilhard de Chardin and the Future of Man

A study of Teilhard's vision of cosmic redemption as a response to the needs and problems of contemporary man.

313: Moral Theology

A study of recent attempts to reformulate moral theology; and of some moral problems of the day.

314: Church as Community

A theological reflection on the literary expression of man's experience of community; on sociological and psychological insights into the structure and dynamics of human community.

315: The Christian in Society

A study of some of the problems which emerge when we recognise that we live at the beginning of the "post-constantinian" age; of some contemporary social problems and possible Christian responses and responsibility.

316: Sacraments and Liturgy

The history of liturgy; a study of the role of liturgy and sacraments in the life of a Christian.

320: Contemporary Protestant Thought

Course description: An exploration of the central insights of some of the major Protestant thinkers of our time. Special attention will be given to determining the usefulness of these insights for our understanding of ourselves and the world in which we live. The major work of the course will be the discussion, both in the classroom and in written form, of selected readings. No previous courses in theology are required.

321: Religion in a Scientific Age

Course description: An exploration of the nature, history, powers, and limitations of science with attention to some of its wide-ranging effects on our understanding of ourselves and our world. We will ask how the role of science in our lives may aid, hinder, or be irrelevant to religious concerns. There are no prerequisites either in the sciences or in theology.

322: Mediaeval and Modern Jewish History

Historical survey of the Jewish people with emphasis on the social, religious and cultural aspects of Jewry and its contribution to world civilization.

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Lecturer, History
B.A. (Honours), M.A., Queen's University

Izhar Mirza**Assistant Professor, Economics**

B.A., Forman Christian College, Pakistan;
M.A., University of Punjab, Pakistan

Arthur P. Monahan

Associate Professor, Philosophy
M.A., Ph.D., University of Toronto; M.S.L.,
Pontifical Institute of Mediaeval Studies,
Toronto

Michael J. Mooney

Lecturer, Theology
A.B. (Philosophy), St. Meinrad College

Dermot L. Mulrooney

Lecturer, Engineering
B.E., M.Eng., Nova Scotia Technical
College

Arthur Murphy

Assistant Professor, French
B.A., Saint Mary's University; M.A.,
Dalhousie University

Francis Murphy

Instructor (Part Time), English
Reverend James W. Murphy, S.J.
Associate Professor, Chemistry

B.A., Saint Joseph's University; M.A., Ph.D.,
University of Toronto

Reverend Lawrence F. Murphy, S.J.

(On Leave of Absence) Assistant
Professor, Theology
B.A., University of Montreal; M.A.,
University of Toronto; S.T.L., Immaculate
Conception

Dangety S. Murty

Professor, Physics

B.Sc., M.Sc., Andhra University; M.A.,
University of Madras; D.Sc., Andhra
University; C.Eng.; M.I.E.E., A.M. Brit.
I.R.E.
C. Mason Myers
Visiting Professor, Philosophy
B.S. (Chemistry & Physics), Western
Michigan University; M.A. (Philosophy),
Ph.D., University of Michigan
Roman Nahrebeckyj
Assistant Professor, German
M.A., McGill University; LL.D., University
of Prague
Bernard Nkemdirim
Lecturer, Sociology
B.A., University of Manchester; M.A.,
McMaster University; LL.B., University of
London
Reverend M. J. O'Donnell, S.J.
Associate Professor, Latin
B.A., University of Montreal; S.T.L.,
Immaculate Conception
J. Patrick O'Neil
Lecturer, Accounting
B.Comm., Saint Mary's University; C.A.
Shripad Pendse
(On Leave of Absence) Lecturer, Business
Administration
B.A., Knox College; M.S., Massachusetts
Institute of Technology
Francis R. Phillips
Assistant Professor, Education
B.A., University of New Brunswick; Dip.

Eng. Educ., Ac. Dip. Educ., M.A., University
of London
David C. Pigot
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B.A., M.A., Dalhousie University; P.G.C.E.
(London)
Reverend John E. Power, S.J.
Assistant Professor, English
B.A., Loyola College; M.A., University of
Toronto
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Assistant Professor, Business
Administration
M.A., University of Bombay; M.B.A.,
U.C.L.A.
A. Megid Ragab
Assistant Professor, Business
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B.Comm. (Honours), Cairo University;
M.B.A., Boston University; Ph.D. (Business
Admin.), The American University
Sister Helen Ralston, R.S.C.J.
Lecturer, Sociology
B.A., Newton College of the Sacred Heart;
Diploma (Medical Social Work), Sydney
University, Australia
Vintha R. Reddy
Lecturer, Engineering
B.Sc., University of Madras, B.E.
(Mechanical), University of Mysore
Terrance F. Rigelhof
Lecturer, Theology
B.A., Saskatchewan, B.Th., Ottawa, M.A.,

McMaster University
Reverend Albert Roach
Instructor, Education
B.A., Saint Mary's University; Bachelor of
Theology, Holy Heart Seminary; Diploma,
Lumen Vitae International Institute
Alfonso Rojo
(On Leave of Absence) Associate Professor,
Biology
B.Sc., Valladolid; M.Sc., Ph.D., University
of Madrid
Enriqueta Rojo
(On Leave of Absence) Assistant Professor,
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B.Sc., M.Sc., University of Madrid
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Associate Professor, Sociology
B.A., St. Francis Xavier University; M.A.,
Gonzaga University
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Dean, Professor, Engineering
B.Sc., Saint Mary's University; B.E.
(Mechanical), Nova Scotia Technical
College
Robert Ryan
Instructor, Education
B.A., M.A., Dalhousie University
Allan T. Sabean
Professor, Chemistry
B.A., B.Sc., Saint Mary's University; M.Sc.,
McGill University
Peter E. Sampson
Lecturer (Part Time), Chemistry

B.Sc., Saint Mary's University

Herbert P. Schoch

(On Leave of Absence) Lecturer, Business Administration/Accounting

B.Comm., University of Melbourne; M.B.A., MacMaster University; A.A.S.A. (Sen.), Australia

Lawrence Scobbie

Associate Professor, Education

M.A., Dip. Ed., M.Ed., University of Edinburgh

Andrew T. Seaman

Assistant Professor, English

B.A., Mount Allison University; M.A., Dalhousie University

Leslie Seplaki

(On Leave of Absence) Assistant Professor, Economics

B.Comm., Sir George Williams University;

M.A., McGill University

Lois B. Shaw

Lecturer, Economics

A.B., University of California; M.A., University of Michigan

Q. A. Siddiqui

Assistant Professor, Geology

B.A., M.A., Lucknow University, India;

M.A., Birmingham University; Ph.D., Leicester University

Kirtan Singh

Assistant Professor, Mathematics

B.A., M.A., Panjab University, Lahore, Pakistan; M.Sc., Indian Institute of Science,

India; Ph.D., Pennsylvania State University

Yash Pal Singh

Assistant Professor, Mathematics

M.Sc., University of Rajastham; Ph.D., Case Institute of Technology and Science

John K. Snyder

Assistant Professor, English

B.A., M.A., Brown University

Colin J. Starnes

Instructor, Theology

B.A., Bishop's University; S.T.B., Harvard University (Divinity)

Reverend W. A. Stewart, S.J.

Associate Professor, Philosophy

B.A., University of Montreal; S.T.L., Ph.L., Immaculate Conception

Mary Man-Yue Sun

Assistant Professor, History

B.A., M.A., University of Hong Kong; Ph.D., University of London

Keith A. Sutherland

Assistant Professor, History

B.S., Ed., M.A., University of Maine; Ph.D., Cornell University

Stanislas Swianiewicz

Professor, Economics

Dr. Jur., University of Vilna; Habilitation in Political Economy, *ibid.*

Jennie M. Tarlo

Lecturer, Sociology

B.A., University of California; M.A.,

Dalhousie University

Kurian K. Thomas

Assistant Professor, Biology

B.Sc., M.Sc., University of Travancore;

Ph.D., University of Florida

Christopher C. H. Thurrott

Instructor, Sociology

B.A. (1st Class Honours), Dalhousie University

Vincent Tobin

Assistant Professor, Classics

B.A., M.A., Dalhousie University

Frank Tomscha

Assistant Professor, Physics

B.A., B.Sc., M.Sc., Diplom Physiker,

Johnn-Wolfgang-Goethe Universitat

Harihar P. Upadhyay

Assistant Professor, English

B.A., M.A., University of Benares; Ph.D., University of London

Robert Vaison

Lecturer, Political Science

B.Comm., B.A., Sir George Williams

University; M.A. (Public Administration),

Carleton University; M.A. (Politics), McMaster University

Joseph Vorstermans

Associate Professor, Economics

Ec. Drs., Econ. Dr., Catholic University, Tilburg

Graham Walker

Instructor, Commercial Law

B.A., Saint Mary's University; LL.B.,

Dalhousie University; M.C.L., S.

Methodist University

Jagannath K. Wani

Associate Professor, Mathematics
 B.Sc. (Gen.), B.Sc. (Honours), M.Sc.,
 University of Poona; Ph.D., McGill
 University

Donald Warner

(On Leave of Absence) Assistant Professor,
 Engineering

B.E. (Mechanical), Nova Scotia Technical
 College; M.S.M.E., Purdue University

Donald J. Weeren

Associate Professor, Education
 B.A., University of Montreal; M.S.
 (Education), Fordham University; Ph.D.,
 Columbia University

Terrence A. Whalen

Lecturer, English
 B.A. (Honours), Saint Mary's University;
 M.A. (Honours), Melbourne University

Barry G. White

Instructor, Mathematics
 B.Sc., Sir George Williams University

Michael Wiles

Assistant Professor, Biology
 B.Sc. (Honours), University of Leeds
 (Zoology); Ph.D., University of Leeds

Affiliate Institutions

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 Guelph, Ontario

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Reverend Michael G. Shields, S.J.

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Registrar, Bursar

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B.A., M.A.; French, Latin, Greek

Reverend John J. English, S.J.

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Reverend Joseph B. Gavin, S.J.

B.A., M.A.; History

Reverend Deryck Hanshell, S.J.

M.A.; English

Reverend Thomas F. Hoey, S.J.

B.A., M.A., Ph.D.; Humanities

Reverend Walter E. Kelly, S.J.

M.A.; English

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B.A., M.A.; Philosophy

Reverend Peter G. LeBlanc, S.J.

B.A., M.A.; Anthropology

Reverend John D. Lynch, S.J.

B.Sc., B.E., M.A.; Theology, Mathematics

Reverend Sean E. McEvenue, S.J.

B.A., Ph.L., S.T.L., S.S.L.; Sacred Scripture

Reverend Michael G. Shields, S.J.

B.A., M.A., S.T.L.; Greek, Humanities

Reverend C. Eric Smith, S.J.

B.A., Ph.D.; Latin, Greek, Biblical and
 Patristic Greek, Modern Languages

Reverend David M. Stanley, S.J.

B.A., S.T.L., S.S.D.; Sacred Scripture
 (N.T.), Biblical Greek

Reverend John C. Trainor, S.J.

B.A., M.A.; Theology

Reverend John F. Wickham, S.J.

B.A., M.A., S.T.L., Ph.D.; English, Speech

Regis College

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Assistant Librarian

Reverend William L. Savoie, S.J.

Bursar

Reverend Paul Brennan, S.J.

Officers of Instruction

Reverend David Asselin, S.J.

Ascetical Theology

B.A., Loyola College; S.T.L., l'Immaculée-
Conception

Reverend Stephen Borbely, S.J.

Systematic Theology

L.Ph., Institute of the Hungarian Jesuit
Province; S.T.L., Innsbruck University;
D.Th., University of Budapest

Reverend Donald Brown, S.J.

Canon Law

B.A., Loyola College; M.A., Theology, Saint
Mary's University; S.T.L., l'Immaculée-
Conception; J.C.L., Gregorian University

Reverend Fidelis Buck, S.J.

Sacred Scripture

S.T.L., l'Immaculée-Conception; S.S.D.,
Pontifical Biblical Institute

Reverend Frederick E. Crowe, S.J.

Systematic Theology



B.Sc., University of New Brunswick; B.A., University of Montreal; L.Ph., l'Immaculée-Conception; S.T.L. and S.T.D., Gregorian University

Reverend Louis Gibbons, S.J.

Systematic Theology

B.A., Loyola College; L.Phil., l'Immaculée-Conception; M.A., Theology, Saint Mary's University; S.T.L., l'Immaculée-Conception

Reverend Tibor Horvath, S.J.

Fundamental Theology

M.A., (Phil.), University of Louvain; S.T.L., Granada, Spain; S.T.D., Gregorian University

Reverend Michael J. Lapierre, S.J.

Systematic Theology

B.A., University of Montreal; S.T.L., University of St. Louis; M.A., University of Toronto; Ph.D., University of Toronto

Reverend Remi Limoges, S.J.

Pastoral Theology

B.A., Loyola College; L.Phil., l'Immaculée-Conception; M.A., Theology, Saint Mary's University; S.T.L., l'Immaculée-Conception; M.Ps., University of Ottawa

Reverend Bernard J. F. Lonergan, S.J.

Systematic Theology

B.A., London University; S.T.D., Gregorian University

Reverend J. Elliott MacGuigan, S.J.

Canon Law

B.A. and M.A., Boston College; S.T.L., Milltown Park; J.C.L., Gregorian

University; J.C.D., Ottawa University

Reverend Sean McEvenue, S.J.

Sacred Scripture

B.A., University of Montreal; M.A., Saint Mary's University; L.Ph. and S.T.L., Gregorian University; L.S.S., Pontifical Biblical Institute

Reverend Colin Maloney, S.J.

Dogmatic Theology

B.A., Loyola College; M.A. (Phil.), Toronto University; L.Ph., l'Immaculée-Conception; S.T.L., University of Innsbruck; S.T.D., Gregorian University

Reverend Attila Mikloshazy, S.J.

Systematic Theology and Liturgy

B.A., Budapest; L.Ph., Pullach; M.A., Saint Mary's University; S.T.L., l'Immaculée-Conception; S.T.D., Gregorian University

Reverend Brian Peckham, S.J.

Sacred Scripture

B.A., Saint Mary's University; M.A. (Phil.), University of Toronto; Ph.D., Harvard; S.T.L., Fourvière

Reverend Edward F. Sheridan, S.J.

Moral Theology

B.A., Loyola College; S.T.L. and S.T.D., Gregorian University

Reverend David W. Stanley, S.J.

Sacred Scripture

B.A., Loyola College; S.T.L., St. Louis University; S.S.D., Pontifical Biblical Institute

Convocation

May 6, 1968

Medals and Prizes

Governor-General's Medal

Terrence Michael Murphy

University Gold Medals:

Arts: Terrence Michael Murphy

Donated by Most Reverend James M. Hayes, J.C.D., D.D.

Science: Charles Frederick McCarthy

Donated by Saint Mary's University Ladies Auxiliary

Commerce: John Bruce Murray

Donated by Messrs. Henry Birks & Sons

Engineering: Terry A. Rohland

Donated by Mr. and Mrs. J. M. Inglis in

memory of their son, Delisle Inglis

Education: Margaret P. Leahey, B.A.

Donated by Truro Printing and Publishing Co. Limited

Dominion Drama Festival Award

of \$1000.00 for best original Canadian Play

(Atlantic Zone): Richard Minichiello

Presented by Mrs. Muriel White, Regional Chairman, D.D.F.

Graduates — May 6, 1968

Bachelor of Arts

Archambault, Frank S., Jr., Lowell, Mass.

Armitage, Stephen Bruce, Dartmouth, N. S.

Arsenault, Charles Paul, Newcastle, N. B.

Barton, William Frederick, Dartmouth, N. S.

Beech, Gerald P. (*cum laude*), Halifax, N. S.

Brownlow, James Michael Anthony, Dartmouth, N. S.

Burke, Ozzie G. J., Halifax, N. S.

Burt, Clement Joseph, Sydney, N. S.

Caseley, William Jerome, Bridgewater, N. S.

Clark, Michael Francis, Dartmouth, N. S.

Clarke, Paul Frederick, Rockingham, N. S.

Cooper, Michael E., Sackville, N. S.

Crane, James Leonard, Purcell's Cove, N. S.

Dewling, Eric Joseph, Toronto, Ont.

Dickinson, Louis H., Halifax, N. S.

Doherty, Michael Francis, Halifax, N. S.

Donovan, Robert David, Stoneham, Mass.

Dubé, Gerald Leonel Victor, Bedford, N. S.

Fader, Peter John, Halifax, N. S.

Feeney, Cyril J., Jr., Nassau, Bahamas

Gorman, Wayne Michael Joseph, Halifax, N. S.

Grant, Peter Jude, Milton, Mass.

Harris, Donald Joseph Stephen, Halifax, N. S.

N. S.

Hebert, Joseph Patrick, Pittsburgh, Penn.

Henderson, Stuart Allistair, Trinidad, W. I.

Hollett, Edward Gordon, Dartmouth, N. S.

Horne, Arthur Sylvester, Halifax, N. S.

Kelsie, Wayne Morris, Halifax, N. S.

Kirwin, James J., Jr., Lowell, Mass.

Kunz, Martin Robert, Camp Morton, Man.

LaRose, Mark Joseph, Welland, Ont.

LeBlanc, Joseph Alain, St. Bernard, N. S.

LePage, Raymond Marc, Halifax, N. S.

Lewis, Kingsley Raymond, Halifax, N. S.

Loiselle, Mary Patricia, Halifax, N. S.

Loring, Robert Francis, Jamaica Plain, Mass.

McBrien, Stewart Patrick, Aylmer, Ont.

McCarthy, Michael Patrick, Halifax, N. S.

MacDonald, David J. (*cum laude*), Halifax, N. S.

MacDonald, Gordon Edward, Pictou, N. S.

McDonald, John Alexander, Dartmouth, N. S.

MacDonald, John Carson, Kentville, N. S.

MacDonald, John Joseph (*cum laude*), Halifax, N. S.

McDonald, Joseph A., Halifax, N. S.

MacKenzie, Warren Alexander, Pictou, N. S.

McNutt, Marvin, Halifax, N. S.

Martin, Peter John, Halifax, N. S.

Milligan, J. Patrick (*Honours History*), Halifax, N. S.

Morgan, Cornelia, Armdale, N. S.

Moriarty, David Lawrence, Montreal, P. Q.

Morrison, Albert Charles, Lakeside, N. S.

Murphy, Kevin Jeremiah, Saint John, N. B.

Murphy, Terrence Michael (*magna cum laude*), Halifax, N. S.
 Or, Michael F. K., Hong Kong
 Orr, David Owen, Halifax, N. S.
 Penny, Stephen F. (*cum laude*), Halifax, N. S.
 Perrier, David Conrad (*cum laude*), Spryfield, N. S.
 Purcell, Dennis B., Beaverbank, N. S.
 Purnell, Edward H. J., Ottawa, Ont.
 Quick, Anthony George Worth, Halifax, N. S.
 Reid, John Frederick, Willowdale, Ont.
 Robinson, John Kent, Armdale, N. S.
 Sanford, Wendell Joseph (*cum laude*), Halifax, N. S.
 Scott, Joseph Vincent, Halifax, N. S.
 Shipley, Wayne Robert (*cum laude*), Spryfield, N. S.
 Simmons, Bonita Irene, Halifax, N. S.
 Simms, Jeremy Joseph, Halifax, N. S.
 Smith, Thomas Edward, Halifax, N. S.
 Spicer, Cyril Ensworth, Dartmouth, N. S.
 Stenton, Edward L., Dartmouth, N. S.
 Street, Rudolph Frederick, Sydney, N. S.
 Sullivan, Terrence Sean, Halifax, N. S.
 Thomson, Robert Howard, Truro, N. S.
 Tulk, William Augustus, Dartmouth, N. S.
 van Vulpen, Bert John, Amherst, N. S.
 Wamback, Arthur Louis, Yarmouth, N. S.
 Woods, Robert W., Halifax, N. S.

Bachelor of Science

Archer, John, Trinidad, W. I.
 Aucoin, Marcel Amedee, Halifax, N. S.
 Bowie, Dennis Martin, Dartmouth, N. S.
 Carter, Donald Fullerton, Sackville, N. B.
 Creamer, David Gordon, Saint John, N. B.
 Darrah, James Leonard, Saint John, N. B.
 Gillis, William Richard, Shad Bay, N. S.
 McCarthy, Charles Frederick, Halifax, N. S.
 Matheson, Robert William, Halifax, N. S.
 Matthews, William Richard, Charlottetown, P. E. I.
 Mercer, John Leslie, Fairview, N. S.
 Murray, Morley William, Amherstburg, Ont.
 Sampson, Peter Earl, Halifax, N. S.
 Sandelli, Joseph Richard, Port Colborne, Ont.
 Sheehan, Robert Anthony, Halifax, N. S.
 Sowpel, Gary Stevens, Windsor, Ont.
 Sparkes, Delbert Ross, Lennoxville, P. Q.
 Sullivan, Timothy Matthew, Jr., Milton, Mass.
 Turner, George Sanford, Moncton, N. B.
 Van Auken, Michael J., Morristown, N. J.
 Walker, Kenneth Frederick, Halifax, N. S.

Bachelor of Commerce

Atkinson, Wayne Arthur, Halifax, N. S.
 Brand, Kenneth Melville, Halifax, N. S.

Burke, Kenneth P., Rockingham, N. S.
 Byrne, Allister Ross, Halifax, N. S.
 Campbell, Paul Ritchie, Stellarton, N. S.
 Connolly, Michael T., Ottawa, Ont.
 Connolly, Paul Joseph, South Portland, Me.
 Covert, Peter Robert, Halifax, N. S.
 Crosby, David Raymond, Sherbrook, N. S.
 Dean, James Michael, Dartmouth, N. S.
 Doherty, Edward Joseph, Halifax, N. S.
 Ferguson, Brian David, Enfield, N. S.
 Foley, Thomas J., Halifax, N. S.
 Ford, David Alexander, Halifax, N. S.
 Guy, George Edward, Halifax, N. S.
 Hall, Kevin O., River Hebert, N. S.
 Hornby, Michael E. J., Dartmouth, N. S.
 Horne, Kenneth Hugh, Halifax, N. S.
 Howe, Paul Edward, Montreal, P. Q.
 Hughes, Ronald Adrian, New Glasgow, N. S.
 Levangie, John Russell, Halifax, N. S.
 McCarthy, John Falke, Portsmouth, N. H.
 McKenzie, Lauchlin C., Halifax, N. S.
 MacKinnon, J. Alan, B.A., Dartmouth, N. S.
 MacRae, Kenneth John, Dartmouth, N. S.
 Mason, Paul Frederick, Halifax, N. S.
 Maynard, James Christopher, Rockingham, N. S.
 Moran, Peter David (*cum laude*), Halifax, N. S.
 Morehouse, Garry Leighton, Moncton, N. B.
 Murray, John Bruce (*magna cum laude*), Armdale, N. S.
 Rogers, Ronald David, Halifax, N. S.
 Sayeau, Charles Michael, Cardinal, Ont.

Shaw, Robert William (*cum laude*),
Fredericton, N. B.
Sutherland, William Alexander, Halifax,
N. S.
Thompson, Reginald Stanley, Fairview, N. S.
Turner, Eric S., Halifax, N. S.

Diploma in Engineering

Bernier, Peter Oliver, Halifax, N. S.
Burke, Keith William, Halifax, N. S.
Chow, Mariano, Trinidad, W. I.
Colville, David Cameron, Halifax, N. S.
Gabriel, Frederick Victor, Halifax, N. S.
LeBlanc, Francis Nelson, Halifax, N. S.
Rogers, Bernard Joseph, Halifax, N. S.
Rohland, Terry A. (*with distinction*),
Halifax, N. S.
Ross, George Alexander, Halifax, N. S.
Ryan, Paul Carey (*with distinction*),
Halifax, N. S.
Sutherland, Fraser Allan, Alma, N. S.
van Dyer, David Bir, Trinidad, W. I.
Woods, John Edward, Halifax, N. S.

Bachelor of Education

Ashok, Uma, B.A., India
Bishop, Murray Francis, B.A., Halifax,
N. S.
Brown, Eva Claire, B.A. (*cum laude*),
Halifax, N. S.

Donahoe, Christopher Robert, B.A.,
Armdale, N. S.
Driscoll, Patrick Joseph, B.E., Glace Bay,
N. S.
Dulong, Joseph Laur  n  , B.A., Halifax,
N. S.
Fitzgerald, Paul Douglas, B.A., Dartmouth,
N. S.
Gallagher, Graham Edward, B.A., Halifax
N. S.
Groves, Frances Lynn, B.A., Dartmouth,
N. S.
Guyette, Mary Jacqueline, B.A., Elmsdale,
N. S.
Ishmael, Rasheed Anthony, B.Sc. (*cum
laude*), Trinidad, W. I.
Jolemore, Ronald Leonard, B.A., Fairview,
N. S.
Joudrey, Charles George LeRoy, B.Sc. (*cum
laude*), Lunenburg, N. S.
Kent, Michael Robert, B.Sc. (*cum laude*),
Fairview, N. S.
Khan, Walter S., B.A., Dartmouth, N. S.
Leahey, Margaret P., B.A. (*cum laude*),
Halifax, N. S.
Lind, Annie Frances, B.A., Dartmouth, N. S.
MacGillivray, Colin William, B.A., (*cum
laude*), Halifax, N. S.
McGlone, Thomas Michael, B.Sc.,
Rockingham, N. S.
McGrath, Emmett Wayne, B.A. (*cum
laude*), Lower L'Ardoise, N. S.
MacKinnon, Gregory Malcolm, B.A., Sydney,

N. S.
Meagher, Thomas Francis, B.A., Halifax,
N. S.
Nicholson, Wayne James, B.A., Halifax,
N. S.
Schumph, Bernard, B.Sc., Stephenville,
Nfld.
Stenton, Murray William, B.Comm.,
Halifax, N. S.
Vaughan, Michael S., B.Sc. (*cum laude*),
Armdale, N. S.
Webb, Thomas Brophy, B.A., B.Ph.,
Halifax, N. S.

Master of Social Work

Johnston, Michael Kenneth, B.A., Halifax,
N. S.
O'Neill, Maureen W., B.A., Dartmouth,
N. S.
Ruotolo, Patricia Finlay, B.A., Halifax,
N. S.
Sutherland, Betty Ann, B.A., St. John's,
Nfld.
Tyler, Douglas Vincent, B.A., Dartmouth,
N. S.

Master of Arts

Conrod, Carole W., B.A., B.Ed., East
Chezzetcook, N. S.
Davis, Darrell Charles, B.A., B.Ed.,
Spryfield, N. S.
Verma, Dharendra, B.Sc., M.Sc., B.Ed.,
Bareilly, India

Graduates — October 3, 1968

Bachelor of Arts

Adams, Elsie Winnifred, Dartmouth, N. S.
Ahern, Robert Leith, Halifax, N. S.
Airoldi, Louis Andrew, Jr., Lee, Mass.
Aubin, Roger Felix, Manchester, N. H.
Bowers, Neal P., Spryfield, N. S.
Brownlow, Daniel Patrick, Jr., Dartmouth,
N. S.
Buckley, Everett George, West Chezzetcook,
N. S.
Burt, George James, North Sydney, N. S.
Byers, Walter Conrad, Parrsboro, N. S.
Campbell, Faber Romanus, Halifax, N. S.
Capstick, Helen, Glace Bay, N. S.
Carruthers, Gregory Huntingdon (*magna
cum laude*), Halifax, N. S.
Cole, David Kenneth, Halifax, N. S.
Fraser, Edith C. (*cum laude*), Halifax, N. S.
Gallant, James Joseph, Dartmouth, N. S.
Grandy, Brian Joseph, Halifax, N. S.
Hartt, Andrew Douglas, Dartmouth, N. S.
Kane, Robert Joseph, Saint John, N. B.
Langan, Michael John, Dartmouth, N. S.
LaRocque, Roger Marc, Halifax, N. S.
Loiselle, Richard Theodore, Halifax, N. S.
McDonald, John Gregory Ignatius, Glace
Bay, N. S.
McLean, Anthony Edward Stanton,
Halifax, N. S.
MacNeil, John R., Halifax, N. S.

Makoon-Singh, Owen Joseph Lal, Trinidad,
W. I.
Maund, Mona Mitchell, Dartmouth, N. S.
Minichiello, Richard Robert, Brighton, Mass.
Murrant, Robert Charles, Halifax, N. S.
O'Neill, Alfred James, Armdale, N. S.
Roy, Audrey Kathleen, Rockingham, N. S.
Ryan, Matthew Joseph, Port Hawkesbury,
N. S.
Sheehan, Hazel MacLeod Hefler (*cum
laude*), Dartmouth, N. S.
Spicer, Roland Clayton, Dartmouth, N. S.
Taylor, James A., Canso, N. S.
White, Douglas Roy, Souris, P. E. I.
White, Thomas Norbert, Bedford, N. S.

Bachelor of Science

Bowlby, Ronald Berton, Halifax County,
N. S.
Brackett, Bernard Vaughan, Halifax, N. S.
Colville, David Cameron, Halifax, N. S.
DeVerteuil, Jacques Jean Louis, Trinidad,
W. I.
Foreman, Lawrence Arthur, Stanley, N. B.
Harrigan, Kenneth R., Atlantic City, N. J.
Holmes, Robert James, Halifax, N. S.
Lai Fatt, Delano Hubert, Jamaica, W. I.
Maroun, Gregg M., Halifax, N. S.
Slabe, Frank, Fairview, N. S.

Bachelor of Commerce

Copp, John Gary, Halifax, N. S.

Dyer, Paul James H., New York, N. Y.
Geary, Peter Richard, Sarnia, Ont.
MacGillivray, Robert Hilary, Halifax, N. S.
MacKinnon, Robert Lewis, Halifax, N. S.
Mahar, Gerald Joseph Anthony, Halifax,
N. S.
O'Keefe, Michael James, St. John's, Nfld.
O'Neill, Garry Joseph, Kentville, N. S.
Polito, Joseph John, Islington, Ont.
Puma, Paul Alfred, Toronto, Ont.
Varela, Manuel Vilar, Caracas, Venezuela
Wayland, Paul Douglas, Halifax, N. S.
Westhaver, Garnet A., Halifax, N. S.

Diploma in Engineering

Christensen, Einar Norman, New Glasgow,
N. S.

Bachelor of Education

Asa, Jeremiah Festus, B.D., Accra, Ghana
Caseley, William Jerome, B.A., Bridgewater,
N. S.
Glenister, Peter Gerard, B.A., Halifax, N. S.
LaPierre, Edouard Joseph, B.A., Halifax,
N. S.

Master of Arts (in Education)

Chowdhury, Rupa Singh, B.A., B.T.,
Rockingham, N. S.

Master of Arts (in Philosophy)

Ring, James Robert, B.A., Halifax, N. S.



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