University of Windsor
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# University of Windsor Undergraduate Calendar 2001-2002 

University of Windsor

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## STATEMENT OF RESPONSIBILITY OF THE UNIVERSITY

1. The content of this Calendar is provided for the general guidance of the student and is not intended to make any contractual commitments therefor. The Calendar is accurate at the time of printing, but programs, courses, staffing, etc. are subject to change from time to time as deemed appropriate by the University of Windsor in order to fulfill its role and mission, or to accommodate circumstances beyond its control. Any such changes may be implemented without prior notice and, unless specified otherwise, are effective when made.
2. This Calendar represents the University of Windsor's best judgment and projection of the course of conduct of the University of Windsor during the periods addressed herein. It is subject to change due to forces beyond the University of Windsor's control or as deemed necessary by the University of Windsor in order to fulfill its educational objectives.
3. Advisors are provided to assist students in planning their academic programs. Advisors are not authorized to change established policy of the University of Windsor. Students are solely responsible for assuring that their academic programs comply with the policies of the University of Windsor. Any advice which is at variance with established policy must be confirmed by the appropriate Dean's Office.
4. Any tuition fees and/or other charges described herein are good faith projections for the academic year. They are, however, subject to change from one academic term to the next as deemed necessary by the University of Windsor in order to meet its financial commitments and to fulfill its role and mission.
5. There are other fees and charges which are attendant upon a student's matriculation at the University of Windsor. These fees or charges may be determined by contacting the University offices which administer the programs or activities in which the student intends to enroll or engage.
6. The University of Windsor reserves the right to terminate or modify program requirements, content, and the sequence of program offerings from term to term for educational reasons which it deems sufficient to warrant such actions.

Further, the University of Windsor reserves the right to terminate programs from term to term for financial or other reasons which it determines warrant such action. The content, schedule, requirements and means of presentation of courses may be changed at any time by the University of Windsor for educational reasons which it determine's are sufficient to warrant such action. Programs, services, or other activities of the University of Windsor may be terminated at any time due to reasons beyond the control of the University of Windsor.
7. The course descriptions herein are based upon reasonable projections of faculty and faculty availability and appropriate curriculum considerations. The matters described are subject to change based upon changes in circumstances upon which these projections were based and as deemed necessary by the University of Windsor to fulfill its role and mission.

## UNIVERSITY OF WINDSOR



## UNDERGRADUATE CALENDAR 2001-2002

Federated and Affiliated Institutions

$$
\begin{aligned}
& \text { ASSUMPTION UNIVERSITY } \\
& \text { HOLY REDEEMER COLLEGE } \\
& \text { CANTERBURY COLLEGE } \\
& \text { IONA COLLEGE }
\end{aligned}
$$

The University is a full member of
THE ASSOCIATION OF UNIVERSITIES AND COLLEGES OF CANADA
THE ASSOCIATION OF COMMONWEALTH UNIVERSITIES THE INTERNATIONAL ASSOCIATION OF UNIVERSITIES

## TABLE OF CONTENTS

THE UNIVERSITY
Calendar of the Academic Year ..... 1.1
History of the University ..... 1.2
Coat of Arms ..... 1.3
Board of Governors ..... 1.4
Senate ..... 1.5
Officers of Administration ..... 1.6
Federated and Affiliated Institutions ..... 1.7
University Library System-Staff ..... 1.8
University Professors ..... 1.9
ACADEMIC INFORMATION
Programs of Study ..... 2.1
Application Information ..... 2.2
Admission Requirements ..... 2.3
Undergraduate Degree Regulations ..... 2.4
Registration ..... 2.5
Examination and Grading Procedure ..... 2.6
Graduation ..... 2.7
Fee Regulations and Schedule ..... 2.8
FACULTY OF ARTS AND SOCIAL SCIENCES
Degree Programs ..... 3.1
General, Arts and Social Sciences Courses ..... 3.2
Classical and Modern Languages, Literatures, and Civilizations ..... 3.3
Communication Studies ..... 3.4
Dramatic Art ..... 3.5
English Language and Literature ..... 3.6
Family and Social Relations ..... 3.7
French Language and Literature ..... 3.8
Geography ..... 3.9
History ..... 3.10
Intemational Relations and Development Studies ..... 3.11
Labour Studies ..... 3.12
Language and Logic ..... 3.13
Liberal and Professional Studies ..... 3.14
Music ..... 3.15
Philosophy ..... 3.16
Political Science ..... 3.17
Psychology ..... 3.18
Social Work ..... 3.19
Sociology and Anthropology ..... 3.20
Visual Arts ..... 3.21
Women's Studies ..... 3.22
Certificate Programs ..... 3.23
FACULTY OF SCIENCE
Degree Programs ..... 4.1
General Courses, Faculty of Science ..... 4.2
Biological Sciences ..... 4.3
Chemistry and Biochemistry ..... 4.4
Computer Science ..... 4.5
Earth Sciences ..... 4.6
Economics ..... 4.7
Mathematics and Statistics ..... 4.8
Physics ..... 4.9
ODETTE
SCHOOL OF BUSINESS ADMINISTRATION
Programs of Study ..... 5.1
Course Descriptions ..... 5.2
FACULTY OF EDUCATIONGeneral Information6.1
Regulations ..... 6.2Programs of Study
Course Descriptions6.36.4
FACULTY OF ENGINEERING
Academic Regulations ..... 7.1
Co-operative Program in Engineering ..... 7.2
Program of Studies-Bachelor of Applied Science ..... 7.3
Course Descriptions-General Engineering ..... 7.4
Civil and Environmental Engineering ..... 7.5
Electrical and Computer Engineering ..... 7.6
Industrial and Manufacturing Systems Engineering ..... 7.7
Mechanical, Automotive, and Materials Engineering ..... 7.8
FACULTY OF HUMAN KINETICS
Programs of Study ..... 8.1
Course Descriptions ..... 8.2
FACULTY OF LAW
General Information ..... 9.1
Awards and Financial Aid ..... 9.2
Special Lectures ..... 9.3
Law Service Courses ..... 9.4
FACULTY OF NURSING
Foreword ..... 10.1
Admissions ..... 10.2
Program Requirements ..... 10.3
Programs of Study ..... 10.4
Course Descriptions ..... 10.5
FACULTY OF GRADUATE STUDIES AND RESEARCH
Structure ..... 11.1
Degrees Offered ..... 11.2
Application Procedures ..... 11.3
Programs of Study ..... 11.4
AWARDS AND FINANCIAL AID
Procedures and Regulations ..... 12.1
Summary of Awards ..... 12.2
Details of Awards Administered by the University ..... 12.3
Details of Awards Not
Administered by the University ..... 12.4
Ontario Student
Assistance Program ..... 12.5
Loans and Other Forms of Aid ..... 12.6
GENERAL INFORMATION
University Services ..... 13.2
Student and Academic Services ..... 13.3
GENERAL INDEX ..... 14
GLOSSARY ..... 15

### 1.1 CALENDAR OF THE ACADEMIC YEAR

## 2001

| August 3 | Deadline for recom- <br> mending an external ex- <br> a miner for an oral <br> defense on the last day <br> for Fall Convocation. <br> Civic Holiday (statutory <br> holiday) (no classes). |
| :--- | :--- |
| August 6 | Fall term fees are due |
| September 3 15 | Fabl payable. <br> Labour Day (statutory <br> holiday). |

$\begin{array}{ll}\text { September 4,5 } & \text { Windsor Welcome } \\ \text { September } 6 & \text { All classes begin, day }\end{array}$ and evening. Field work begins in Social Work.
September 19 Last day for late registration and change of course for Fall term day and evening. Last day for full tuition refund.
September 21 Last day for the oral defense of dissertations, theses and major papers for Fall Convocation.
September 28 Last day to deposit dissertations, theses and major papers for Fall Convocation.
October 8 Thanksgiving Day (statutory holiday) (no classes).
October 13
October 31

Fall Convocation
Last day to withdraw voluntarily from courses. After this date students remain registered in courses and receive final grades as appropriate. Last day for partial tuition refund.

December 6
December 6 Fall term examinations begin except Law and Education.
December 8 Examinations begin in Law.
December 17 Winter term fees are due and payable.
December 24
to January 1

## 2002

January $2 \quad$ University offices reopen.

January $7 \quad$ All classes begin, day and evening. Field work begins in Social Work.
January 18 Last day of registration and change of course for Winter term courses, day and evening. Last day for full tuition refund.
February 1 Final day for application to Year 3 in Social Work.
February 15 Last day to file application for Spring graduation,
February 25 to Study week for all faculMarch 1

March 1 University offices closed.
March $8 \quad$ Last day to withdraw voluntarily from courses. After this date students remain registered in courses and receive final grades as appropriate. Last day for partial tuition refund.

March 29

April 12

April 15

April 20
May 13

May 17 Last day for late registration and change of course for Intersession. Last day for full tuition refund for In tersession courses.

May 17

May 20
May 24 Last day for registration and change of course, 12 -week session and Summer Co-op. Last day for full tuition refund for 12-week session and Summer Co-op courses.
May 24 Last day to deposit dissertations, theses and major papers for Spring Convocation. mending an external examiner for an oral defense on the last day for Spring Convocation.
Good Friday (statutory holiday) (no classes).

Last day for oral defense of dissertations, theses and major papers for Spring Convocation.
Victoria Day (statutory holiday) (no classes).

June 7
Last day to withdraw voluntarily from Intersession courses. After this date students remain registered in courses and receive final grades as appropriate. Last day for partial tuition refund for Intersession courses. Summer Session fees are due and payable.
June 7, 8,9 Spring Convocation.
June 17

June 21
June 24

June 28

July 1

July 2
July 8

July 15
Summer Session fees are due and payable.
Intersession classes end.
Intersession examinations begin. Mid-term break for 12-week session and Summer Co-op.
Last day to file application for Fall graduation.
Observance of Canada Day. University offices closed.

Summer Session classes begin.
Last day for Summer Session late registration and change of course. Last day for full tuition refund for Summer Session courses.
Last day to withdraw vol- untarily from 12-week session and Summer Coop term courses. After this date students remain registered in courses and receive final grades as appropriate. Last day to receive partial refund for withdrawal from 12-week session and Summer Coop term courses.

| July 29 | Last day to withdraw vol- <br> untarily from Summer <br> Session courses. After <br> this date students remain <br> registered in courses and <br> receive final grades as <br> appropriate. Last day for <br> partial tuition refund for <br> Summer Se s sion <br> courses. |
| :--- | :--- |
| Deadline for recom- |  |
| August 2 | mending an external ex- <br> aminer for an oral <br> defense on the last day <br> for Fall Convocation. <br> Civic Holiday (statutory <br> holiday) (no classes). |
| August 5 5 | Last day of classes for <br> Summer Session, 12- <br> week session, and Sum- <br> mer Co-op term. |
| August 13 |  |




### 1.2 History of the University of

 WindsorOn July 1, 1963, the new, non-denominational University of Windsor inherited an educational complex founded in 1857 as Assumption College, developed since 1870 by the Basilian Fathers (the Congregation of St. Basil) and expanded to independent University status in 1953. The transition from an historic Roman Catholic university to a nondenominational institution was unprecedented. This transformation began, in 1956, with the affiliation of Essex College, the first provincially-assisted public institution of higher education.
The new institution included Assumption University as a federated member, which operated residences on campus for men and women and held in abeyance its own degree-granting powers, except in the graduate Faculty of Theology. All of the facilities and teaching faculty of Assumption University were absorbed into the University of Windsor, as were those of its federated, nondenominational Essex College, which ceased to exist as a separate corporation when it joined Assumption in a petition to incorporate the University of Windsor to assume responsibility and control for all academic operations. The President of Assumption University, Rev. E.C. Lebel, CSB, became the first President and Vice-Chancellor of the new University and Dr. F.A. DeMarco, the Principal of Essex College, became the Vice-President.

## Heritage

Assumption College opened its doors on February 10,1857 , largely through the efforts of Rev. Pierre Point, S. J., pastor of Assumption Parish in Sandwich; this parish was established as a mission in 1748 and made a parish in 1767, the oldest in Canada west of Montreal. M. Theodule Girardot was the first instructor. The College was incorporated by an Act of the Legislature of the Province of Canada which received Royal Assent

August 16, 1858, during the Superiorship of Rev. Joseph Malbos, a Basilian who guided it for one year. The College was directed successively by Jesuits, Benedictines and secular clergy until the Basilians returned in 1870.

During the early years, the curriculum consisted of classical and commercial courses which provided a complete high school and Arts program primarily designed to prepare students for theological seminaries, although many alumni entered business and professional spheres. In 1919, Assumption affiliated with Western University, London, Ontario (now the University of Western Ontario), as an integral part of the latter's Faculty of Arts and Science with a broadened curriculum including general and four-year major courses in Arts and Science leading to Bachelor of Arts and Bachelor of Science degrees, graduate work in Philosophy leading to the Master of Arts degree, and pre-professional programs such as Pre-engineering, Pre-medicine and Pre-law.
From 1934 to 1962, Holy Names College, conducted by the Sisters of the Holy Names of Jesus and Mary, provided opportunity in higher education for women, and, when it moved to the campus in 1950, it enabled Assumption to become co-educational. The Sisters then disbanded the College, while continuing to teach at the University, and Assumption took over its women's residence, which was renamed Electa Hall.

## University Development

On July 1, 1953, Assumption College ended its affiliation with the University of Western Ontario and obtained its own university powers through an Act of the Ontario Legislature. In 1954 it was admitted to full membership in the National Conference of Canadian Universities and Colleges, to the University Matriculation Board of Ontario, and to the Association of Universities of the British Commonwe alth.
In 1956, the College changed its name to Assumption University by an Act of the Ontario Legislature and accepted as an affiliate the non-denominational Essex College, incorporated in 1954, which assumed responsi-

bility for the Faculty of Applied Science, the Schools of Business Administration and Nursing, and the Departments of Biology, Chemistry, Geology and Geography, Mathematics, and Physics. Holy Redeemer College, the national seminary of the Redemptorist Fathers, located three miles off campus, also affiliated. In 1957, Canterbury College, offering courses in Philosophy, Religious Knowledge and Mediaeval History, became the first Anglican college in the world to affiliate with a Roman Catholic University.
The University of Windsor was incorporated by the Ontario Legislature on December 19, 1962, accepting Assumption University in Federation. During 1963 and 1964, affiliation agreements were made with Holy Redeemer College, Canterbury College and the new Iona College (United Church of Canada).

The University of Windsor assumed control of the campus on July 1, 1963, and became a member of the International Association of Universities in June, 1964.

## Presidents

1963-64: Rev. Eugene Carlisle LeBel, C.S.B., C.D., LL.D.

1964-78: John Francis Leddy, O.C., M.A. B. Litt., M. Litt., D.Phil., D.Litt., D.es L., LL.D., D.C.L., F.R.Hist.S.

1978-84: Mervyn Franklin, B.Sc., Ph.D.
1984-97: Ronald W. lanni, Q.C., B.A., B.Comm., LL.B., C.U.E.C.E.(Dip.), I.H.E.I. (Dip.), Ph.D.

1998-: Ross H. Paul, B.A., M.A., Ph.D.

### 1.3 The Coat of Arms

The form of the Letters Patent, issued in 1963 by Garter, Clarenceux and Norroy-and-Ulster Kings of Arms in granting the armorial bearings, was the first of its kind in the history of armory, using the style and title of Her Majesty Queen Elizabeth II as Queen of Cana da and placing Her Royal Arms of Canada in the centre rather than the traditional Royal Arms of British sovereigns as monarchs of Britain.
Gold and blue, the colours of the University of Windsor, predominate in the bearings. Gold and green had been the colours of the former Essex College, which was absorbed by the new University. Blue, gold and white are the colours of Assumption University, now federated with the University of Windsor.
The Shield of Arms consists of a gold background on which are three piles, or wedgeshaped heraldic charges, emphasizing the Christian origin of the University, as well as the arduous nature of academic endeavour.

Each pile carries an armorial charge: the upper two a Maple Leaf and Fleur-de-Lis, both gold, alluding to the historic nature of the seat of the University and the nationalities of the major population groups in Windsor. The lower pile is charged with a silver lily with gold wings, a device taken from the arms of Assumption University.
Over the whole of the shield stretches a symbolic bridge with twin allusions to the location of the University at the Canadian base of the Ambassador Bridge linking Canada and the United States, Windsor and Detroit, and to the principal aims of the University-to bridge chasms of ignorance and join the firm grounds of truth.
Above the shield is the Helm of the corporation, a closed steel vizor lined with red silk. From the Helm rises the Crest, consisting of a Black Greek Cross recalling the association of the Basilian Fathers (the Congregation of St. Basil) with Assumption almost since its founding in 1857.
The Cross stands in front of two red Seaxes, or notched swords, as a cant (or pun) on Essex, the County in which the University is located. The composition is irradiated with gold rays as a further allusion to the County. the "Sun Parlor of Canada." Around the base of the Crest is a Wreath of the University of Windsor colours, blue and gold, and from this, down either side of the Helm, flows the mantling of the same colours.
The gold Supporters on either side of the Shield are a Canadian Deer and a Moose, alluding to the Supporters of the Arms of Ontario and the derivation of the University's academic authority and principal financial support from the Provincial Legislature, but reversed from those of Ontario. The head of each Supporter is placed in the position known as "guardant," that is, looking toward the viewer, forward-looking.
The whole composition is placed on a green mound, or Compartment, at the base of which is the Motto Scroll, inscribed, "BONITATEM, DISCIPLINAM, SCIENTIAM," words taken from a Latin version of Psalm (118) (119)-"Goodness, Discipline and Knowledge".

### 1.4 Board of Governors

## (as of January, 2001)

## Members ex officio <br> Dr. Ross H. Paul (President of the University)

Mr. Liam McCarthy (President, Society of Graduate and Professional Students)
Mr. Enver Villemizar (President, University of Windsor Students' Alliance) Mr. Jerry McCorkell (President, Organization of Part-time University Students)

## Elected Members

Mr. Ed Brust
Mr. David Cooke
Mr. Bert Desjardins
Mr. Dennis DesRosiers
Ms. Amanda Gellman
Mr. John Harcarufka
Mr. Marty Komsa
Mr. James Murphy
Mr. Chuck Wills (First Vice-Chair)
Members appointed by Assumption University
Ms. Margaret Clarke
Judge Guy DeMarco
Mr. Douglas Lawson Q.C. (Chair)
Rev. Ulysse Paré (Past Chair)
Dr. Anne Winterbottom
Members appointed by the Alumni Association
Ms. Adele Beitler
Ms. Audrey Thibert

## Member appointed by Canterbury College

Mr. Hilary Payne

## Member appointed by lona College Mr. Gordon Boggs

## Members appointed by the Lieutenant Governor-in-Council

Ms. Carol Derbyshire (Second Vice-Chair)
Mr. William Messenger
Judge Micheline Rawlins

## Members elected by the Senate

Dr. Rick Caron
Dr. Linda McKay
Dr. Barbara Thomas
Dr. Graham Reader

### 1.5 The Senate

(as of September 1, 2000)

## Members ex-officio

Dr. R. H. Paul, President (Chair)
Prof. N.Gold, Vice-President, Academic
Mr. E. Harbottle, Vice-President, Administration and Finance
Dr. K. E. McCrone, Executive Dean, Faculty of Arts and Social Sciences
Dr. W. S. Cameron, Dean, Faculty of Graduate Studies and Research
Dr. R. J. Caron, Dean, Faculty of Science
Dr. J. Weese, Dean, Faculty of Human Kinetics
Dr. B. P. Elman, Dean, Faculty of Law
Dr. G. Reader, Dean, Faculty of Engineering
Dr. R. D. Hussey, Dean, Odette School of Business Administration
Dr. S. Dresen, Dean, Faculty of Nursing
Dr. P. Rogers, Dean, Faculty of Education
Dr. J. Corlett, Registrar and
Administrative Dean of Student and Academic Services
Rev. W. H. Irwin, President of Assumption University
Dr. D. T. A. Symons, Principal of Canterbury College
Dr. D. Galston, Principal of Iona College
Ms. G. Ebbett, University Librarian
Mr. J. McCorkell, President, Organization of Part-time Students
Mr. L. McCarthy, President, Society of Graduate and Professional Students

Mr. E. Villamizar, President, University of Windsor Students' Alliance
Dr. A Alfa, Associate Vice-President, Research (non voting)
Dr. M. Salter, Associate Vice-President,
Academic Affairs (non voting)

## Elected Representatives of Faculties (AAUs)

Faculty of Arts and Social Sciences
Prof. T. Blair
Dr. W. Gallant
Dr. F. Hansen
Dr. D. Jacobs
Prof. W. Law
Dr. J. Murray
Prof. D. Palmer
Dr. K. Quinsey
Prof. B. Rintoul
Dr, S. Towson
Dr. S. Wendt-Hildebrandt
Dr. D. Woodyard
Odette School of Business Administration
Dr. A. Forrest
Dr. A. Morgan
TBA
Faculty of Education
Dr. L. McKay
Dr. N. Hurley
Faculty of Engineering
Dr. A. Asfour
Dr. R. Bowers
Dr. S. P. Dutta
Dr. M. Madugula
Faculty of Human Kinetics
Dr.S. Martyn
Faculty of Law
Dr. L. Rotman
Prof. J. L. West
Faculty of Nursing
Dr. L. Carty
Dr. K. Fawdry

Faculty of Science
Dr. R. Aroca
Dr. J. B. Atkinson
Dr. V. Bajic
Dr. D. Britten
Dr. D. Cotter
Dr. A. Jaekel
Dr. C. Rodrigues
Library Representation
To be appointed
To be appointed
Elected Representatives-at-large
Dr. G. Drake
Dr. M. Dufresne
Prof. M. Gold
Dr. S. llcan
Dr. L. Lovett-Doust
Academic Professional
Ms. J. B. White
Board of Governors Representatives
Ms. A. Gellman
Mr. W. Messenger
Elected Representative of the Faculty Association
Dr. D. Leslie
Elected Representative of the Aboriginal Education Council
Mr. T. James
Student Representatives
Mr. J. Callegher (UWSA)
Ms. K. Muzzin (UWSA)
Mr. C. Paterson (UWSA)
Ms. L. Chesnik (UWSA)
TBA (UWSA)
Mr. D. Hillyard(OPUS)
Mr. W. Girard(OPUS)
Ms. J. Baojuan (SGPS)
Mr. D. Cerri (SGPS)

Appointed by the Alumni Association
Mr. P. Antaya
Parliamentarian (non voting)
Prof. J. Whiteside

### 1.6 Officers of Administration

## CHANCELLOR

Frederic L. R. Jackman; B.A., M.A. (Toronto), Ph.D. (Chicago).

## PRESIDENT AND VICE-CHANCELLOR

Ross H. Paul; B.A. (Bishop's), M.A. (McGill), Ph.D. (London).

## VICE-PRESIDENT, ACADEMIC

Gold, Neil; B.A. (York), LL.B. (Toronto), LL.M. (York), of Osgoode Hall, Barrister-at-Law, also of the Bar of British Columbia.

## Associate Vice-President, Research Alfa, Attahiru; B.Eng.(Ahmadu Bello), M.Sc. (Manitoba), Ph.D. (NSW)

## Associate Vice-President, Academic Affairs

Michael A. Salter; D.P.E. (Sydney), B.P.E., M.A. Ph.D. (Alberta).

## VICE-PRESIDENT, FINANCE AND SERVICES

Eric Harbottle; B.A. (Saskatchewan), M.B.A. (Western Ontario).

SENIOR VICE-PRESIDENT, DEVELOPMENT AND ALUMNI AFFAIRS<br>Paul V. Cassano; B.A. (Windsor), M.A., Ph.D. (Columbia).<br>\section*{SECRETARY AND GENERAL COUNSEL}<br>D. Charles James; B.A. (Southampton), LL.B. (Cambridge).

## EXECUTIVE DEAN, FACULTY OF ARTS AND SOCIAL SCIENCES

Kathleen E. McCrone; B.A.
(Saskatchewan), M.A., Ph.D. (New York U.).

## Associate Executive Dean

Robert R. Orr; B.A. (Valparaiso), M.A., Ph.D. (lowa)

## Associate Executive Dean

Kai Hildebrandt; M.A. (Hamburg), M.A., Ph.D. (Michigan)

DEAN, FACULTY OF SCIENCE
Richard J. Caron; B.M., M.M., Ph.D. (Waterioo).

## Associate Dean

Lesley Lovett-Doust; B.Sc. (Edinburgh), Ph.D. (Wales).

## DEAN, FACULTY OF ENGINEERING

Graham T. Reader; B.Tech. (Bradford), B.A. (O.U.), P.S.C.(M.B.A.) (J.S.D.C.), Ph.D. (Bradford), P.Eng., C.M.E., C.Eng., Eur.Ing., F.I.Mar.E.

## Associate Dean

Philip H. Alexander; B.A.Sc. (Assumption), M.A.Sc., (Windsor), P.Eng.

## DEAN, ODETTE SCHOOL OF BUSINESS ADMINISTRATION

Roger D. Hussey; M.Sc., Ph.D. (Bath).

## Associate Dean

William Wellington; B.Sc. (Western), M.B.A. (Windsor), Ph.D. (Michigan State).

## DEAN, FACULTY OF EDUCATION

Patricia K. Rogers; B.A. (Oxon.), M.Sc. (Toronto), Ph.D. (London)

## DEAN, FACULTY OF LAW

Bruce P. Elman; B.Sc.(McGill), LL.B. (Dalhousie), LL.M. (Harvard)
(Interim) Associate Dean
Brian M. Mazer; B.A., LL.B. (Saskatchewan), LL.M. (Alberta)

## DIRECTOR OF STUDENT

 RECRUITMENTMichael Houston; B.Comm. (Windsor)

## UNIVERSITY LIBRARIAN

Gwendolyn Ebbett; B.A. (Mount Allison), B.L.S. (Alberta), M.L.S. (Dalhousie).

## Associate University Librarian

Cynthia Archer; B.Sc., M.L.S. (Western Ontario).

## DIRECTOR OF CAMPUS POLICE

To be appointed.

## DIRECTOR OF INFORMATION TECHNOLOGY SERVICES

Roger Lauzon; B.A. (Windsor), M.Math. (Waterloo).

## DIRECTOR OF FINANCE

A. Dale Homiachek; B.Sc. (Walla Walla), M.B.A. (York), C.A.

## DIRECTOR OF HUMAN RESOURCES

James S. Butler; H.B.A. (Western Ontario), M.B.A. (Saskatchewan).

## DIRECTOR OF INSTITUTIONAL ANALYSIS

Rosemary Zanutto; B.Comm. (Windsor), C.A.

## DIRECTOR OF THE CENTRE FOR FLEXIBLE LEARNING <br> Mogyorody, Veronika; B.A. (Windsor), M.A. (Wayne State), B.Arch. (Detroit), <br> Ph.D. (Rensselaer) <br> DIRECTOR OF <br> PLANT MAINTENANCE/OPERATIONS

Dennis Hastings; B.H.K., B.Ed., M.H.K. (Windsor).

DIRECTOR OF PSYCHOLOGICAL
SERVICES CENTRE
Barry Taub; B.A. (State U. of N.Y. at Stonybrook), M.A., Ph.D. (Waterloo).

DIRECTOR OF STUDENT AWARDS Aase Cuthbert; B.A. (Windsor).

### 1.7 Federated and Affiliated Institutions

ASSUMPTION UNIVERSITY

OFFICERS OF ADMINISTRATION

## Honorary Chancellor

William H. Somerville; LL.D.

## Chancellor

Most Rev. John M. Sherlock; D.D.

## Administrative Officers

Rev. William H. Irwin; C.S.B., M.A., S.T.L., S.S.D. (President)

Rev. Thomas M. Rosica; C.S.B., B.A., S.T.B., M.Div., S.S.L., Élève Titulaire de

L'École Biblique de Jérusalem. (Vice-President, Academic)
Rev. Robert W. Moslo sky; C.S.B., B.A., M.Div., M.R.E.. (Treasurer)

Moira Bellemore; C.G.A. (Accountant/Business Manager)
Rev. William J. Stoba; C.S.B., B.A., M.A., M.Div. (Vice-President Emeritus)

## Christian Culture Series

Margaret Kapasi(Director)

## Institute of Pastoral and Educational Ministry

Sr. Mary Ann Flanagan; I.H.M., B.A., M.A., M.S.W., Ph.D., (Adjunct Professor).
Anne Shore; B.A., M.A., B.Ed., Dip. Spec. Ed., M.P.S. (Program Director)

## Chaplain for the University

To be appointed

## Board Of Governors

Rev. Mario O. D'Souza; C.S.B., B.A., M.Ed., M.Div., C.A.E.S., Ph.D. (Chair).

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| Deborah Pink | Ph.D. |
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| Joan Carter |  |
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Fred Wacker, Ph.D.

### 1.8 University Library

 SystemTHE LEDDY LIBRARY STAFF

Archer, Cynthia; B.Sc., M.L.S. (Western Ontario). (Associate University Librarian)
Ball, Katharine M.; B.A. (Toronto), M.L.S., M.B.A. (McGill). (Collection Services Librarian)
Baracat, Karen; B.A., M.L.I.S. (McGill). (Collections Librarian)

Dalton, Joan T.; B.A., M.A. (Windsor), M.L.I.S. (Western Ontario). (Reference Librarian)
Ebbett, Gwendolyn; B.A. (Mount Allison), B.L.S. (Alberta), M.L.S. (Dalhousie). (University Librarian)
Elliott, Robert J.; B.A., M.S.L.S. (Wayne State). (Reference Librarian)
Foster, Johanna; B.A. (Windsor), M.S.L.S. (Wayne State). (Head, Collection Services) Jackson, William S.; B.A. (Detroit Institute of Technology), M.S.L.S. (Wayne State). (Reference Librarian)
Jain, Christine H.; B.A. (Goshen), A.M.L.S. (Michigan). (Cataloging Librarian)
Lukasewych, Peter; B.Sc. (Hons.) (Waterloo), M.L.S. (Western). (Head, Acquisitions/Bibliographic Services)
Maskell, Cathy; B.Sc. (McMaster), M.L.I.S. (Western Ontario). (Head, Access Services)
Munro, Sharon C.; B.A. (Toronto), B.S.W., M.S.W., M.L.I.S. (Dalhousie). (Reference Librarian)
Owens, Brian; B.A. (Alberta), M.L. (Washington), M.Phil., Ph.D. (London). (Collections Librarian and Archivist)
Rhyno, Arthur W.; B.A. (St. F.X.), M.L.I.S. (Western Ontario). (Head, Systems)
Staffen, Graham A.; B.A. (Toronto), B.C.S. (Windsor), M.L.S. (Westem Ontario). (Reference Librarian)
Tupling, Donald; B.A. (Windsor), M.S.L.S. (Wayne State). (Cataloging Librarian)
Venkateswarlu, Tadiboyina; B.A., M.A. (Andhra), M.Sc. (Alberta), M.L.S. (Western Ontario). (Collection Services Librarian)
Wallenius, Leila; B.Sc., M.Sc. (Laurentian), M.L.I.S. (McGill). (Head, Reference)

Wolfe, Martha K.; A.B. (Emmanuel College, Boston), M.L.S. (Pittsburgh). (Collection Services Librarian)
Zimmerman, Peter; B.A., B.Ed., M.L.I.S. (Western Ontario) (Reference Librarian)

LAW LIBRARY STAFF

Murphy, Paul T.; B.A., LL.B. (Windsor), M.S.L.S., M.U.P. (Wayne State), of the Ontario Bar. (Law Librarian and Professor)

### 1.9 University Professors

A University Professor is a member of faculty of the rank of professor who has distinguished achievements in teaching and wide national and/or intemational reputation for scholarship or creative or professional accomplishment.
The University of Windsor is proud to recognize the accomplishments of:
Barry Adam-Professor of Sociology, considered a pioneer in the social scientific study of homosexuality and AIDS.
lain Baxter-Professor of Visual Arts, one of the first multi-media artists in Canada who has made a unique and influential contribution to the development of twentieth-century art.
Jatinder Bewtra-Professor of Environmental Engineering, specializing in water and wastewater treatment, and in the treatment of industrial/hazardous waste.
Sheila Cameron-Professor of Nursing, is an expert on how individuals and their families adapt to illness. She is also recognized for her work in intemational development in nursing.
Gordon Drake-Professor of Physics and a recognized researcher in atomic and molecular physics.
Charles Fantazzi-Emeritus Professor of Classical and Modern Languages and Literature is known for his work on the international Erasmus translation project.
Reuben Hackam-Professor of Electrical Engineering whose specialization is in high voltage engineering, electrical power, insulation materials, and related subjects.

Ralph Johnson-Professor of Philosophy, originated the concept of informal logic which is now a basic part of many universities' introductory philosophy programs.

Graham Jullien-Professor of Electrical Engineering, whose work in the design and development of microchips for digital signal processing has led to technical developments in areas such as satellite imaging and manufacturing control systems.
John Kennedy-Emeritus Professor of Civil and Environmental Engineering, whose research in defining load tolerances in skewed and curved bridges has helped to create safer and more cost-efficient structures throughout North America.
Lakshman Marasinghe-Professor of Law and expert on constitutional law who has assisted Third World countries with constitutional development.
William McConkey-Professor of Physics. His studies of electron scattering in atomic and molecular gases have provided basic data used in modelling the earth's atmosphere and in the design and application of gaseous lasers.
Alistair MacLeod-Emeritus Professor of English and Creative Writing and one of Canada's most recognized writers of short fiction.
Byron Rourke-Professor of Psychology and an internationally recognized authority on clinical neuropsychology and the effects of head injuries.
Walter Soderlund-Professor of Political Science. An expert in Caribbean and Central American politics, he is also known for his studies on the influence of media in politics.
David Symons-Professor of Geology. Developed one of the most advanced paleomagnetic facilities in North America.
Dennis Tuck-Emeritus Professor of Chemistry, recognized for his research into the properties of Main Group metals and in non-aqueous electrochemistry.

## 2 ACADEMIC INFORMATION

### 2.1 Programs of Study

### 2.1.1 BACHELOR OF APPLIED SCIENCE

Honours and Co-operative Education programs in Engineering lead to the Bachelor of Applied Science (B.A.Sc.) degree, in the following areas: Civil Engineering, Electrical Engineering with Computer Engineering or Communications Engineering or Electronics option, Environmental Engineering, Industrial Engineering, Mechanical Engineering, and Mechanical Engineering with an Automotive or Materials option.

### 2.1.2 BACHELOR OF ARTS

General programs in Anthropology, Art History, Classical Civilization, Communication Studies, Drama, Economics, English, Family and Social Relations, French, History, Labour Studies, Liberal and Professional Studies, Modern Languages (with options in German, Italian, or Spanish). Multicultural Studies, Music (only with combined major), Philosophy, Political Science, Psychology, Sociology, Visual Arts, and Women's Studies lead to the Bachelor of Arts (B.A.) degree.
Honours degree programs are available in most of these areas and in combinations of them and lead to the Honours B.A. degree.

Honours programs in Criminology, Drama in Education, English and Creative Writing, Intemational Relations, Language and Logic, and Planning also are offered.
A concurrent B.A./B.Ed./Diploma in Early Childhood Education program is offered with St. Clair College.

### 2.1.3 BACHELOR OF COMMERCE

Honours and Co-operative Education programs lead to the degree of Bachelor of Commerce (Honours Business Administration) (B.Comm.). Areas of concentration are Accounting, Management and Labour Studies, Finance, Management Science, and Marketing.
The Joint Business-Computer Science, Honours and Honours Co-operative Education programs lead to the degree of Bachelor of Commerce (Honours Business Administration and Computer Science) (B.Comm.).
The Joint Business-Economics, four-year program leads to the degree of Bachelor of Commerce (Honours Business Administration and Economics) (B.Comm.).
A Bachelor of Business Studies (General)Accounting Track is offered for qualified graduates of colleges of applied arts and technology.
A Certificate in Business Administration is also available.

### 2.1.4 BACHELOR OF COMPUTER SCIENCE

General, Honours, and Co-operative Education programs in Computer Science lead to the Bachelor of Computer Science (B.C.S.) degree.

### 2.1.5 BACHELOR OF EDUCATION

Programs lead to the Bachelor of Education (B.Ed.) for candidates in the Pre-Service Program (Teacher Training), and to the Bachelor of Education (Honours) for qualified teachers who wish to further their professional studies in education.
The Pre-Service B.Ed. is also offered concurrently in a four-year program with the general B.Sc. (General Science) and is also offered in the concurrent B.A./B.Ed./Diploma in Early Childhood Education program with St. Clair College and the concurrent B.Sc./B.Ed./Diploma in Early Childhood Education program with St. Clair College.

### 2.1.6 BACHELOR OF FINE ARTS

Honours programs in Visual Arts and Acting lead to the Bachelor of Fine Arts (B.F.A.) degree.

### 2.1.7 BACHELOR OF HUMAN KINETICS

Honours and Co-operative Education programs lead to the degree of Bachelor of Hu man Kinetics (B.H.K.). Students may major in Movement Science or Leisure and Sport Management.

### 2.1.8 BACHELOR OF LAWS

The Bachelor of Laws (LL.B.) degree requires full-time attendance for three years or part-time attendance for six years.
A Combined Bachelor of Laws/Master of Business Administration program is also offered.

### 2.1.7 BACHELOR OF MATHEMATICS

General and Honours programs in Mathematics lead to the Bachelor of Mathematics (B.Math.) degree. Combined B.Math. (Honours) programs also are offered when Mathematics is combined with a second major.

### 2.1.10 BACHELOR OF MUSIC

Honours programs in Music lead to the Bachelor of Music (B.Mus.) degree in Music Education, Performance, and Individualized areas of specialization.

### 2.1.11 BACHELOR OF MUSICAL ARTS

The general program in Musical Arts leads to the Bachelor of Musical Arts (B.M.A.) degree.

### 2.1.12 BACHELOR OF MUSIC THERAPY

An Honours program leading to a Bachelor of Music Therapy (B.M.T.) is offered.

### 2.1.13 BACHELOR OF OPERATIONS RESEARCH

An Honours Co-operative Education program in Mathematics, Statistics, Computer Science, Economics, Industrial and Manufacturing Systems Engineering and Business Administration leading to the Bachelor of Operations Research (B.O.R.) degree.

### 2.1.14 BACHELOR OF SCIENCE

Honours programs in Biology, Biochemistry, Chemistry, Geology, Environmental Geoscience, Geoinformatics, and Physics and High Technology, lead to the Bachelor of Science (B.Sc.) degree. Combined B.Sc. (Honours) programs also are offered. The interdisciplinary program in Environmental Science also leads to the B.Sc. The Co-operative Education Programs in Environmental Biology, Computers and Multi-Media, Computer Information Systems, Environmental Geoscience, Geology, Physics and High Technology and Software Engineering lead to the B.Sc. (Honours) degree.
Also offered are the three-year B.Sc.(General Science) and the three-year B.Sc. (Science, Technology, and Society) degrees. The B.Sc. (General Science) is also offered concurrently in a four-year program leading to both the B.Sc. degree and the Medical Laboratory Science Diploma from St. Clair College. The B.Sc. (General Science) is also offered concurrently in a four-year program with a B.Ed. degree.
A concurrent B.Sc./B.Ed./Diploma in Early Childhood Education program is offered with St. Clair College.

### 2.1.15 BACHELOR OF SCIENCE IN NURSING

Honours programs in Nursing lead to the Bachelor of Science in Nursing (B.Sc.N.) degree.

### 2.1.16 BACHELOR OF SOCIAL WORK

Honours programs in Social Work lead to the Bachelor of Social Work (B.S.W.) degree.

### 2.1.17 CERTIFICATE PROGRAMS

Certificate programs are available in Arts Management, Criminology and Criminal Justice, Labour Studies, Latin American and Caribbean Studies, Primary Care Nurse Practitioner, Public Administration and Women's Studies.

### 2.1.17 FACULTY OF GRADUATE STUDIES AND RESEARCH

The Faculty of Graduate Studies and Research offers programs leading to the following degrees:
Master of Arts in Economics, English Literature, English and Creative Writing, History, Philosophy, Political Science, Psychology, and Sociology;
Master of Science in Biological Sciences, Chemistry and Biochemistry, Clinical Chemistry, Computer Science, Geology, Mathematics, Physics, and Statistics;
Master of Science in Nursing;
Master of Applied Science in Civil Engineering, Electrical Engineering, Engineering Materials, Environmental Engineering, Industrial Engineering, and Mechanical Engineering;
Master of Business Administration; Integrated M.B.A./LL.B.;
Master of Education;
Master of Fine Arts in Visual Arts;
Master of Human Kinetics in Kinesiology;
Doctor of Philosophy in Biological Sciences, Chemistry and Biochemistry, Civil Engineer-
ing, Educational Studies (Joint Program), Electrical Engineering, Engineering Materials, Environmental Engineering, Manufacturing Systems Engineering, Mathematics, Mechanical Engineering, Physics, Psychology, Sociology (Social Justice), and Statistics;
Postdoctoral Certificate in Adult Clinical Psychology.

### 2.1.18 INTERNATIONAL STUDY PROGRAMS

The University of Windsor is a party to a number of multilateral and bilateral agreements with universities in other countries, which permit University of Windsor students to attend other institutions for periods up to one academic year as part of their degree program at Windsor. Normally, courses taken while participating under one of these agreements are treated as if they were taken at the University of Windsor, and do not need to be authorized in advance by a Letter of Permission.
Many agreements are open as to field of study, while others are intended for students in specific disciplines. In some (but not all) cases proficiency in a second language is required for participation. Other conditions of eligibility also vary from program to program.
Current agreements for international study are listed below, with field of study and language of instruction; for further information contact Windsor International.

## AUSTRALIA

Deakin University - Open - English

## EUROPE

France
Ontario/Rhône-Alpes Exchange - Open -French- 14 Universities in France IFI/ESC Rouen - Business - English, French
Jean Monnet University - Open - French
Germany
Ontario/Baden-Würtemberg Exchange -
Open - German-9 Universities in
Germany
Fachhochschule Bielefeld - Business -
German
Finland
Mikkeli Polytechnic - Open - English
Italy
Università della Calabria - Open - Italian
Netherlands
Amhem Business School - Business -
English
University of Amsterdam - Philosophy -
English
Sweden
Jönköping University - Business,
Communication Studies, Engineering -
English
University of Karlstad - Open - English
United Kingdom
Keele University - Open - English
University of Derby - Social Science,
Business - English
Southampton Institute - Social Science -
English

## AMERICAS

Mexico and USA (Tri-Lateral Programs)-
Engineering - English, Spanish
University of New Brunswick
Marshall University
Kettering University
Universidad Autonoma de Aguascalientes
Instituto Tecnologico y de Estudios
Superiores de Monterrey

Mexico
Autonomous University of Guadalajara Open - Spanish

## USA

University of Akron - Open - English University of Massachusetts - Sport Management - English
University of Central Florida - Open English

## ASIA

## Japan

Daito Bunka University - Open - English, Japanese Intermational Christian University - Open English, Japanese

### 2.1.19 DISTANCE EDUCATION PROGRAM

Many courses in several subjects in Arts, Social Sciences, Science, Nursing, and Business are offered in a Flexible Learning format. A B.Sc. Degree completion program is available for Medical Laboratory Technologists.( see 4.1.3) A B.Comm degree in Accounting is also available entirely through Distance Education. This mode of study is of interest to those students who are unable to attend classes on a weekly basis. Courses employ a combination of texts, study guides, broadcast programs, videos, and audiotapes. Access to instructors is provided by email and telephone consultation. For current information please refer to the Centre for Flexible Learning website at www.uwindsor.ca/flexible.

## Society of Management Accountants

Students are able to fulfill the requirements for admission to the Society of Management Accountants CMA program through Distance Education.

### 2.2 Application Information

### 2.2.1 APPLICATION PROCEDURES

Applicants for full-time, undergraduate studies must apply through the Ontario Universities' Application Centre (O.U.A.C.). Current Ontario secondary school students must obtain the O.U.A.C. 101 application form from their guidance office. All others use the O.U.A.C. 105 application form, which is available at all Ontario universities or via the web at www.ouac.on.ca.
Applicants for part-time studies must use the University of Windsor application form, which may be obtained in person or by request through email at registr@uwindsor.ca or by writing to:

Office of the Registrar
University of Windsor
Windsor, Ontario
Canada N9B 3P4

### 2.2.2 APPLICATION DEADLINES

Candidates from outside continental North America must apply and submit all supporting documents to the Registrar's Office before March 1 for registration in the Fall term.
All other candidates must apply and submit all supporting documents as follows: August 1 for the Fall term; December 1 for the Winter term; and April 1 for the Summer term (Intersession and Summer Session).

### 2.2.3 ENGLISH LANGUAGE PROFICIENCY

Applicants whose native language is not English must take an English Proficiency Test administered by either the English Language Institute of the University of Michigan, or Test of English as a Foreign Language (T.O.E.F.L.).

### 2.3 Admission

 RequirementsThe admission requirements described in this section define the minimum requirements for specific programs. Possession of the minimum requirements guarantees only that the application will be considered.

### 2.3.1 FROM ONTARIO SECONDARY SCHOOLS

## Current OSSD Graduates

The minimum admission requirement for all programs is six Ontario Academic Courses including OAC English I, with an admissions average as established by the University for each program. Applicants for the Bachelor of Mathematics, the Bachelor of Science (Computer Information Systems, Software Engineering) and the Bachelor of Computer Science programs also require a minimum average as established by the University in Mathematics OAC credits. Applicants for Engineering, Nursing and other programs in Science also require a minimum average as established by the University in Mathematics and Science OAC credits. Refer to the outlines below for specific requirements.

## New Curriculum Graduates

The minimum admission requirement for all programs is six Grade 12 " $U$ " or "U/C" Courses, including a Grade 12 "U" English I, with an admissions average as established by the University for each program. Applicants for the Bachelor of Mathematics, the Bachelor of Science (Computer Information Systems, Software Engineering) and the Bachelor of Computer Science programs also require a minimum average as established by the University in prescribed Mathematics Grade 12 " $U$ " credits. Applicants for Engineering, Nursing and other programs in Science also require a minimum average as established by the University in Mathematics and Science Grade 12 " U" credits. Refer to the outlines below for specific requirements.

The length of time taken to complete the OSSD will not of itself be a determining factor in the admission decision.
Applicants are encouraged to achieve as much breadth of preparation as possible in the courses of study leading to the OSSD while also meeting the stated admission requirements of the program to which application is being made.
The University offers early admission in early April on the basis of final grades obtained up to the Fall semester in schools run on a semester schedule or interim marks in schools run on a yearly schedule and principal's recommendations. In the case of students who have doubtful or borderline qualifications, the decision on admission will be deferred until May results are available. In any case, students are expected to complete the requirements for the OSSD. Accordingly, the University reserves the right to withdraw the Offer of Early Admission made to an Ontario secondary school student if the applicant fails to complete diploma requirements with a minimum final overall average of sixty percent in six Ontario Academic Courses.

OSSD Graduates

| DEGREE | OUAC |
| :--- | ---: |
|  |  |
| FACULTY OF ARTS AND SOCIAL |  |
| SCIENCES |  |
| Bachelor of Arts |  |
| -General |  |
| Bachelor of Arts | NA |
| - Honours and |  |
| Combined Honours |  |
| Bachelor of Arts |  |
| -Concurrent B.A./B.Ed./E.C.E. | NAE |
| Diploma (with St. Clair College) |  |
| OACRequirements. 60 OAC credits including |  |
| English I. |  |

New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.
Comments. French majors may require OAC level or Grade 12 " U" courses in French. Students interested in other languages do not need prior language training. Combined Honours Philosophy and Mathematics requires OAC English I, Algebra and Geometry, and Calculus or Grade 12 "U"English I and Grade 12 "U" Advanced Functions and Introductory Calculus, Geometry and Discrete Mathematics. (OAC Finite Mathematics or Grade 12 "U" Data Management is strongly recommended.)
The Concurrent B.A./B.Ed/E.C.E. Diploma program requires completion and submission of a student profile and a successful interview. Enroiment is limited.

Bachelor of Arts
-Criminology NCR
OAC Requirements:6OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.
Comments: Students must re-apply to continue in the Criminology program after Level 2.
Bachelor of Arts
-Drama and
Communication Studies

OAC Requirement: 6OAC credits, including English I.
New Curriculum Requirements: 6 Grade12 "U" or "U/C" courses including Grade 12 " U " English I.
Bachelor of Arts
-Drama in Education NDC
OAC Requirement: 6 OAC credits, including English I and a successful interview with Dramatic Art.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U^{\prime \prime}$ English I and a successful interview with Dramatic Art.

## Bachelor of Arts

-English and Creative Writing NAW OAC Requirements: 6 OAC credits including English I.
New Curriculum Requirements: 6 Grade12 "U" or "U/C" courses including Grade 12 " $U$ " English I.
Bachelor of Arts
-Intemational Relations NJI

OAC Requirements:6OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.

## Bachelor of Arts

-Language and Logic
NAL
OAC Requirements:6OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.
Bachelor of Arts
-Planning
NG
OAC Requirements: $60 A C$ credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.
Bachelor of Arts
-Visual Arts and Art History NFA
Bachelor of Arts
-Visual Arts and Communication NFV
Studies
OACRequirements: 6 OAC credits including
English I.

New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English 1.

## Bachelor of Fine Arts

-Acting
ND
OACRequirements:6OAC credits including English I, and a successful audition which is conducted by Dramatic Art.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I and a successful audition which is conducted by Dramatic Art.
Comments: Candidates for the B.F.A. Acting degree will be limited in number and must show evidence of aptitude in performance by auditioning. Auditions are normally scheduled in the Spring. Audition requirements, dates, and applicable fees are available on request.
Proficiency in the English language is required in Dramatic Art.
Bachelor of Fine Arts
-Visual Art
NF
OAC Requirements: 6 OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I.
$\begin{array}{ll}\text { Bachelor of Music } & \text { NM } \\ \text { Bachelor of Musical Arts } & \mathrm{NL}\end{array}$
OAC Requirements:6OAC credits including English I, and a successful audition which is conducted by Music.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 " U " English I, and a successful audition which is conducted by Music.

Bachelor of Social Work NW
OAC Requirements:6OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English I.
Comments: Students must re-apply to continue in the Social Work program after Year 2.

## FACULTY OF SCIENCE

Bachelor of Arts (Honours and Combined Honours)
-Economics
NAH
Bachelor of Arts (General)
-Economics
NA
OAC Requirements: 6OAC credits including English I.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I.
Comments: Economics (Honours) requires OAC Calculus or Grade 12 "U" Advanced Functions and Introductory Calculus and Grade 11 " $U^{\text {" Functions and Relations. }}$ Combined Honours Economics and Mathematics requires OAC Calculus and Algebra and Geometry or Grade 12 "U" Advanced Functions and Introductory Calculus, Geometry and Discrete Mathematics, and OAC Finite math or Grade 12 "U" Data Management is recommended.
Bachelor of Mathematics (Honours)
-Mathematics NMH
Bachelor of Mathematics (General)
-Mathematics
NMG
Bachelor of Operations Research (Honours Co-op)
-Mathematics NOR
OAC Requirements:6OAC credits including English I, Calculus, and Algebra and Geometry.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English I, Grade 12 " U" Advanced Functions and Introductory Calculus, and Geometry and Discrete Mathematics. Grade 12 " U " Data Management and Physics are recommended. Co-op requires a successful interview.

## Bachelor of Science

-General Science NS
Concurrent Bachelor of Science NSE
(General Science)/Bachelor of Education
Bachelor of Science
-Concurrent B.Sc./B.Ed./E.C.E. NSF Diploma (with St. Clair College)
OAC Requirements:60AC credits including English I, Calculus, and two of Algebra and Geometry, Biology, Chemistry, and Physics.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and two of Geometry and Discrete Mathematics, Biology, Chemistry and Physics; and Grade 11 " U" Functions and Relations. Admission to the Concurrent B.Sc./B.Ed program requires completion and submission of a student profile and a successful interview.
Comments: The General Science program is intended for students who seek a more general background in science, or who have not yet identified a disciplinary major. The Concurrent B.Sc./B.Ed./E.C.E. Diploma requires completion and submission of a student profile and a successful interview. Enrolment limited.

Bachelor of Science
-Biological Sciences NSB
Bachelor of Science
-Biology and Psychology (Behaviour, Cognition and Neuroscience)
OAC Requirements:6OAC credits including English I, Calculus, Chemistry, and Biology.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, Chemistry and Biology.
Comments: A final mark of at least $70 \%$ in Bi ology is strongly recommended. Physics is recommended. Application to the Environmental Biology co-op program takes place during the Winter term of the first year at the University of Windsor.

Bachelor of Science
-Chemistry
NSC
OAC Requirements: 6OAC credits including English I, Algebra and Geometry, Calculus, Chemistry, and one of Physics or Biology.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 " U " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and Geometry and Discrete Mathematics, Chemistry, and one of Physics or Biology.

Comments: Physics is recommended.
Bachelor of Science
-Biochemistry
NSY
OACRequirements:60AC credits including English I, Calculus, Chemistry, and Biology.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, Chemistry and Biology.
Comments: Physics is recommended.
Bachelor of Science
-Computer Information Systems NSI

- Computer Information Systems NSJ (Co-op)
- Computer Science with NSS Software Engineering Option
-Computer Science with NSU Software Engineering Option (Co-op)
- Computers and Multi-Media Option
- Computers and Multi-Media NSD Option (Co-op)
OAC Requirements:6OAC credits including English I, Algebra and Geometry, and Calculus. Co-op requires a successful interview.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and Geometry and Discrete Mathematics.

Bachelor of Science
-Physical Geography
NSH
OAC Requirements:6OAC credits including English I, Calculus, and two of Biology, Chemistry, and Physics.
New Curriculum Requirements: 6 Grade 12 " U" or "U/C" courses including Grade 12 "U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and two of Biology, Chemistry, and Physics.

Bachelor of Science
-Environmental Resource
NSR Management
OAC Requirements: 6OAC credits including English I, Calculus, Biology, and Chemistry
New Curriculum Requirements 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, Biology and Chemistry.
Comments: OAC Algebra and Geometry or Grade 12 "U" Geometry and Discrete Mathematics is also recommended.

Bachelor of Science
-Geology NSG
-Environmental Geoscience NSV
OAC Requirements: 6OAC credits including English I, Calculus, and Chemistry, and either Biology or Physics.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I and Grade 12 "U" Advanced Functions and Introductory Calculus, and Chemistry, and either Biology or Physics.
Comments: OAC Algebra and Geometry or Grade 12 " U" Geometry and Discrete Mathematics is recommended. Biology is strongly recommended for Environmental Geoscience students.

## Bachelor of Science

-Geoinformatics
NGI
OAC Requirements: 6OAC credits including English I, Calculus, Algebra and Geometry, and one of Chemistry, Biology, or Physics.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, Geometry and Discrete Mathematics and one of Chemistry, Biology, or Physics..
Comments: Chemistry would be required for students who wish to become professionally licensed geoscientists in geology, and both Chemistry and Biology would be required for students who wish to become professionally licensed in environmental geoscience.

Bachelor of Science
-Physics and High Technology NSP
Bachelor of Science
-Physics and High Technology NPT Co-op
OAC Requirements: 6OAC credits including English I, Algebra and Geometry, and Calculus.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, Geometry and Discrete Mathematics.

Comments: Physics and Chemistry are recommended.

Bachelor of Science
-Science, Technology and Society)

OAC Requirements: 6 OAC credits, including English I, Calculus, and two of Biology, Chemistry, Physics or Algebra and Geometry.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and two of Biology, Chemistry, Physics and Geometry and

Discrete Mathematics; and Grade 11 " U " Functions and Relations.
Bachelor of Science
-General Science with Medical NST Laboratory Science Diploma (concurrent with St. Clair College).
OAC Requirements: 6 OAC credits, including English I, Calcuius, and two of Biology, Chemistry, Algebra and Geometry, and Physics.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " $U$ " English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and two of Biology, Chemistry, Geometry and Discrete Mathematics, and Physics; and Grade 11 "U" Functions and Relations.
Comments: Also required are completion and submission of a student profile and a successful interview with representatives from both the Faculty of Science at the University and the Department of Health Technology at St. Clair College. Enrolment in this program is limited.

## Bachelor of Science <br> -Environmental Science NSN

OAC Requirements: 6OAC credits including English I, Calculus, and two other sciences. Biology and Chemistry are recommended.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I, Grade 12 " $U$ " Advanced Functions and Introductory Calcuilus, and two other sciences. Biology and Chemistry are recommended.

Bachelor of Computer Science
OAC Requirements:6OAC credits including English I, Calculus, and Algebra and Geometry.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 " U " EnglishI, Grade 12 "U" Advanced Functions and Introductory Calculus, Geometry and Discrete Mathematics.

## ODETTE SCHOOL OF BUSINESS ADMINISTRATION

## Bachelor of Commerce

- Business Administration

NC
-Business Administration Co-op
NCC
OAC Requirements: 6 OAC credits including English I and one Mathematics course. Co-op requires a successful interview.

New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I and one of Grade 12 "U" Data Management or Advanced Functions and Introductory Calculus. Both are recommended. Co-op requires a successful interview

## Bachelor of Commerce

-Business Administration and NCE Economics

OAC Requirements: 6 OAC credits including English I and one Mathematics course.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U " English I and Grade 12 "U" Data Management and Advanced Functions and Introductory Calculus.

Bachelor of Commerce
-Business Administration and NCD Computer Science
Bachelor of Commerce
-Business Administration and NCB Computer Science Co-op
OAC Requirements: 6 OAC credits including English I, Calculus, and Algebra and Geometry. Co-op requires a successful interview.

New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 " U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and Geometry and Discrete Mathematics. Co-op requires a successful interview.

## FACULTY OF ENGINEERING

Bachelor of Applied Science NE
OACRequirements:6OAC credits including English I, Calculus, Algebra and Geometry, Chemistry, and Physics.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I, Grade 12 "U" Advanced Functions and Introductory Calculus, and Geometry and Discrete Mathematics, Chemistry, and Physics.
Comments: Application to the Co-op degree occurs during the first term at the University of Windsor.

## FACULTY OF HUMAN KINETICS

Bachelor of Human Kinetics NP
OAC Requirements:60AC credits including English I and Biology.
New Curriculum Requirements. 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I and Grade 12 "U" Biology.
Comments: Physics and Chemistry are strongly recommended. Application to the Co-op degree occurs during the first term at the University of Windsor.

## FACULTY OF NURSING

Bachelor of Science in Nursing
NN
OAC Requirements: 6 OAC credits including English I, Chemistry, and Biology.
New Curriculum Requirements: 6 Grade 12 "U" or "U/C" courses including Grade 12 "U" English I, Chemistry, and Biology.
Comments: One Mathematics is recommended.

## CERTIFICATE PROGRAMS

OACRequirements: $60 A C$ credits including English I.
New Curriculum Requirements. 6 Grade 12 " U " or "U/C" courses including Grade 12 " U " English I.
Comments: These programs are designed primarily for part-time students.

### 2.3.2 FROM OTHER CANADIAN PROVINCES

Applicants completing the following levels of education are considered equivalent to OSSD graduates.

Alberta
Grade 12
British Columbia
Grade 12
Manitoba
Grade 12
New Brunswick
Grade 12
Saskatchewan
Grade 12
Nova Scotia
Grade 12 or First Year at a Nova Scotia university after Junior Matriculation

Prince Edward Island
Grade 12
Newfoundland
Grade 12
Quebec
Grade 12 or completion of the first year of a General Program at a C.E.G.E.P. (minimum of 12 semester subjects)

Northwest Territories
Grade 12
Yukon
Grade 12
Subject requirements for specific programs equivalent to the OAC courses must be included in the above curricula.

### 2.3.3 FROM THE UNITED STATES

In order to qualify for admission an applicant must present scholastic records indicating good preparation and ability to undertake a university degree program. Graduates of accredited high schools will normally qualify for admission if the cumulative high school grade point average is 2.75 (B-) or above.
Each applicant must present scores from either the American College Testing Program Assessment (ACT) or the Scholastic Aptitude Test (SAT) offered by the College Entrance Examination Board. Advanced Placement Examinations in certain prerequisite subjects also may be required.
The student must receive a favourable recommendation from the high school Principal, and should rank in the upper third of the class.
Highly qualified applicants from the United States will be given final acceptance after the first term marks of the final year of high school have been received if the applicant meets the admission requirements at that time, provided that the graduation certificate is presented.

### 2.3.4 INTERNATIONAL ADMISSIONS

The minimum admission requirements for applicants to First Year are listed below.
Applicants from overseas must send the official documents of their secondary education indicating subjects taken and grades obtained. Notarized English translations are necessary if the documents are not in English. Photocopies are not accepted.

## United Kingdom and Commonwealth

Five Passes on the General Certificate of Education including two at the Advanced Level

## or

Four passes on the General Certificate of Education, including three at the Advanced Level. A minimum grade of $D$ is required in the Advanced Levels.
Science must include Advanced Level Mathematics, Physics and Chemistry.
Engineering must include Advanced Level Pure and Applied Mathematics, Physics and Chemistry.
Nursing must include Advanced Level English, Biology and Chemistry. Commerce must include Advanced Level Mathematics.

## Bangladesh

Higher Secondary Certificate/Intermediate Certificate

## Europe

The Senior Matriculation Certificate as required by a recognized university in that country.

## Central and South America

The Senior Matriculation Certificate as required by a recognized university in that country.

## India

All-India Senior School Certificate awarded by CBSE (after twelve years)/Indian School Certificate (awarded by ICSE).

## Malaysia

Sijil Tinggi Persekolahan Malaysia (STPM) ; Certificate of Unified Examination of the Malaysian Independent Chinese Secondary Schools System (MICSS)

## Pakistan

Intermediate/Higher Secondary School Certificate.

## Middle East

The Senior Matriculation Certificate as required by a recognized university in that country.

## Africa and Asia

Countries following the British System - Advanced level standing on the GCE or equivalent as listed under the United Kingdom.
Other African and Asian Countries - Senior Matriculation and/or completion of First Year at a recognized university depending upon country.

## International Baccalaureate

Six subject passes in the IB examination including three at the Higher Level with a total grade of 28 and no mark less than four.

### 2.3.5 MATURE STUDENT

Applicants who have completed an OSSD or equivalent but do not possess the published minimum requirements for admission (see 2.3.1, 2.3.2, and 2.3.3) may be considered under the Mature Student policy if, prior to their proposed date of enrolment, they will be a minimum of twenty years of age and have been away from formal, full-time secondary education for two calendar years. Those applicants who have not completed the OSSD or equivalent must submit a student profile.
Applicants must submit proof of age and official transcripts from their secondary school(s) and from any post-secondary institution which they may have attended.
Note: Applicants who have attempted uni-versity-level studies are evaluated as university transfer students and are not eligible for admission under the Mature Student policy.
Successful candidates will be admitted as non-degree students.
A student admitted on the basis of the University's mature student policy is permitted to declare a major for which the student is eligible after completing two courses with a minimum average of $7.0(\mathrm{C}+$ ) or after completing five courses with a minimum average of 5.0 (C-). The academic record of all candidates admitted under the Mature Student policy will be reviewed after eight course attempts. Students who achieve a cumulative G.P.A. of 5.0 or better will be considered for
admission to the appropriate program and will receive the appropriate credit for courses successfully completed. Students who do not achieve the required G.P.A. will normally be required to withdraw from the University.
Admission to many programs is competitive, and the University reserves the right to limit admission to such programs.
Direct entry is available to most programs within the Faculty of Arts and Social Sciences, although some require specific OAC prerequisites. Auditions are required in Acting and Music programs. Programs within the Faculty of Science, Facuity of Engineering, and the Odette School of Business Administration require prerequisite courses at the OAC level.
Only Canadian citizens and Permanent Residents of Canada are eligible for admission under the Mature Student policy.

### 2.3.6 TRANSFER STUDENT

## From Another College or University

An applicant who wishes to transfer (at any level) from another college or university must arrange for a complete transcript of record to be sent to the Office of the Registrar by each institution previously attended.
A student will normally be granted credit for any course which has been completed with a minimum C-standing at another Ontario university. The total number of credits granted will be dependent upon the individual program requirements of each faculty.
A transfer student will be required to complete at least one full year (ten semester courses) or the equivalent at this University before qualifying for a degree. Refer to each faculty section for the appropriate residency requirements.
A student who has been required to withdraw from his/her previous institution will not be accepted to the University of Windsor during the period of his/her disbarment. If a student is eligible to apply to another faculty or program at his/her previous university, the student is eligible to apply to a similar program at the University of Windsor. In any case, should the student's record be such
that he/she would have been required to withdraw at the University of Windsor, he/she shall not be eligible for transfer unless authorized by the appropriate Academic Standing Committee.
Students transferring from another university shall not be given credit for those courses in which they have received a grade lower than C- unless authorized by the relevant Academic Standing Committee.

## From a College of Applied Arts and Technology

Applicants who have completed two years of a three-year program with a cumulative average of B will be considered for admission to First Year of an appropriate program. Applicants who have graduated from a twoyear program with a cumulative average of $B$ will be considered for admission to First Year of an appropriate program. Applicants who have graduated from a three-year program with a cumulative average of B will be considered for admission to Second Year of an appropriate program.

### 2.3.7 ARTICULATION AGREEMENTS WITH COLLEGES OF APPLIED ARTS AND TECHNOLOGY

Formal articulation agreements, which are described below, are in place with Colleges of Applied Arts and Technology. Applicants who are pursuing other programs at the College level in Ontario will be considered for admission according to the transfer policies described in 2.3.6.

## ALL COLLEGES OF APPLIED ARTS AND TECHNOLOGY

1) Bachelor of Business Studies
(General)-Accounting Track: Graduates of three-year diploma programs with an accounting major and a minimum cumulative average of $B$ ( 70 percent) will receive twenty unspecified semester course equivalents towards this thirty-three course degree.
For details of the B.B.S. (General) program requirements, see the Odette School of Business Administration section, 5.1.5.
2) General Arts and Science Program: Graduates of the two-year Arts and Sci-
ence programs may receive transfer credit for up to ten courses. Transfer credit is awarded for approved courses with a minimum grade of $B$.
3) Early Childhood Education Program: A student may enter a Bachelor of Arts program after completing the two-year Diploma in Early Childhood Education. Depending upon the selected level and area of study, the student may receive the equivalent of ten course equivalents. Transfer credit is awarded for approved courses with a minimum grade of $B$.
4) Business Programs: Graduates of threeyear diploma programs in business from any college of applied arts and technology may transfer to the Odette School of Business Administration at the University of Windsor subject to the following:
(a) Applicants will be granted a maximum of four terms' credit towards the Bachelor of Commerce program.
(b) A remedial course in Calculus may be necessary in order for transfer students to pursue the first-year Mathematics course required in the Bachelor of Commerce program.
5) Business Programs: Graduates of twoyear diploma programs in business from any college of applied arts and technology may transfer to the Odette School of Business Administration at the University of Windsor subject to the following:
(a) Applicants will be granted a maximum of two terms' credit towards the Bachelor of Commerce program.
(b) A remedial course in Calculus may be necessary in order for transfer students to pursue the first-year Mathematics course required in the Bachelor of Commerce program.

FANSHAWE COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Fine Art Program: Graduates of Fanshawe College who have completed a threeyear Fine Art program may apply for transfer into an appropriate level of the Honours Bachelor of Fine Arts (Visual Arts) program (see 3.21.3). Transfer students must satisfy University regulations for transfer from CAATs and meet the academic requirements and standards of the B.F.A. program. Completion of the B.F.A. program in Visual Arts will normally require four terms of academic work or the equivalent at the University of Windsor. For further information, contact Visual Arts. 2) Developmental Services Worker Program: Graduates of the Fanshawe College Developmental Services Worker program who have a cumulative grade point average equivalent to $B$ or better may receive credit equivalent to six courses ( 18.00 credits) consisting of non-major, in-troductory-level courses toward a B.A. or B.S.W. degree.

## GEORGIAN COLLEGE OFAPPLIED ARTS AND TECHNOLOGY

1) Automotive Marketing Program: Graduates of the three-year Automotive Marketing program at Georgian College with a cumulative average of seventy-eight percent or better may transfer to the Odette School of Business Administration at the University of Windsor subject to the following:
(a) Applicants will be granted a maximum of four terms' credit towards the Bachelor of Commerce program;
(b) A remedial course in Calculus may be necessary in order for transfer students to pursue the first-year Mathematics course required in the Bachelor of Commerce program;

## HUMBER COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Theatre Performance Program: Graduates of Humber College who have completed the three-year Theatre Performance program may apply for transfer to the Bache-
lor of Fine Arts (Acting) program. Completion of the B.F.A. (Acting) normally will require four terms of academic work at the University of Windsor. Applicants must have a minimum average of B in their Humber College courses and be recommended in writing by the Artistic Director of the Humber College Theatre Performance program. They will also be subject to a placement audition prior to acceptance. Applicants from Humber College who graduated more than one year prior to their audition are not necessarily covered by this agreement.
Candidates should contact Dramatic Art regarding audition requirements, dates, applicable audition fees, and tuition fees.

## LAMBTON COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Chemical Engineering Technology Program: A student may enter a Bachelor of Science program after completing the three-year Diploma in Chemical Engineering Technology. Depending upon the selected level and area of study, the student may receive the equivalent of seventeen courses from Chemistry and Biochemistry.
2) Environmental Technology Program: A student may enter a Bachelor of Science program after completing the three-year Diploma in Environmental Technology. Depending upon the selected level and area of study, the student may receive the equivalent of nineteen courses from Chemistry and Biochemistry.
3) Industrial Hygiene Technology Program: A student may enter a Bachelor of Science program after completing the three-year Di ploma in Industrial Hygiene Technology. Depending upon the selected level and area of study, the student may receive the equivalent of sixteen courses from Biological Sciences, and twenty courses from Chemistry and Biochemistry.
4) Medical Laboratory Science Program: Graduates of the three-year Diploma in Medical Laboratory Science with a 3.0 G.P.A. ( 75 percent or equivalent) may receive the equivalent of seventeen semester course credits towards the Bachelor of Sci-
ence degree in Biological Sciences, Biochemistry, or General Science.
5) Sports Facilities and Recreation Administration Program: A student may enter a Bachelor of Human Kinetics (Leisure and Sport Management) program after completing the three-year Diploma in Sports Facilities and Recreation Administration with a cumulative average equivalent to $\mathrm{a} B$ or better. Students may receive up to the equivalent of fifteen course credits from the Kinesiology core curriculum and up to the equivalent of five course credits from the Leisure and Sport Management major.
6) Police Foundations Program: A graduate of the two-year Diploma in Police Foundations program with a cumulative average grade of B or better and at least a grade of B - in specified College courses may receive up to one year (ten courses) of credit towards a B.A. or B.S.W. degree program in the Faculty of Arts and Social Sciences.

## MOHAWK COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Medical Laboratory Technology Program: Graduates of the three-year Diploma in Medical Laboratory Technology with a 3.0 G.P.A. ( 75 percent or equivalent) may receive the equivalent of seventeen semester course credits towards the Bachelor of Science degree in Biological Sciences, Biochemistry, or General Science.

## ST. CLAIR COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Journalism and New Media Program: A student may enter a Bachelor of Arts after completing a two-year diploma with a cumulative average of 2.7 (B) and may receive the equivalent of ten semester courses from Communication Studies.
2) Chemical Engineering Technology Program: A student may enter a Bachelor of Science Program after completing the three year Diploma in Chemical Engineering Technology. Depending upon the selected level and area of study, the student may receive the equivalent of seventeen semester course credits from Chemistry and Biochemistry.
3) Medical Laboratory Science Program. Graduates of the three-year Diploma in Medical Laboratory Science with a 3.0 G.P.A. ( 75 percent or equivalent) may receive the equivalent of seventeen semester course credits towards the Bachelor of Science degree in Biological Sciences, Biochemistry, or General Science.
4) Developmental Services Worker: Graduates of the Developmental Services Worker program (formerly the Mental Retardation Counsellor and Resident Counsellor/Mental Retardation program) at the Thames Campus may receive transfer credit for up to six courses towards a Bachelor of Arts or a Bachelor of Social Work degree.
Students with University of Windsor degrees, wishing to pursue one of the above mentioned diplomas, should contact St. Clair College in order to determine the equivalency credits to be used toward the diploma.
5) Computer Science Information System Technology: Graduates of the three-year Diploma in Computer Science Information System Technology with a 3.0 G.P.A. or better, are eligible within ten years of graduation for admission to the three-year General Bachelor of Computer Science degree program. Students who graduated more than ten years before application to the General B.C.S. degree will be considered on an individual basis, and their acceptance will require approval of the Dean of Science. Students may receive the equivalent of seventeen semester course equivalents.
6) Business Administration Information Systems: Graduates of this program with a 3.0 G.P.A. or better, who have completed specific courses will be considered for admission to the General Bachelor of Computer Science on an individual basis, subject to the approval of the Dean of Science, and may receive up to seventeen semester course equivalents.
7) Police Foundations Program: A graduate of the two-year Diploma in Police Foundations program with a cumulative average grade of $B$ or better and at least a grade of

B - in specified College courses may receive up to one year (ten courses) of credit towards a B.A. or B.S.W. degree program in the Faculty of Arts and Social Sciences.
8) International Trade Management Program: Students who are admissible to the B.Comm degree program and who have completed the Six Month Post-Graduate Certificate in International Trade Program with a cumulative G.P.A. of B or better, will be granted advanced standing for five nonspecific 200 level Business semester courses towards an Honours (four-year, 40 course) Bachelor of Commerce degree.
9) Mechanical Engineering Technology Automotive Product Design Program: Graduates of the Mechanical Engineering Technolagy - Automotive Product Design program in the year 2001 or later, with a cumulative G.P.A. of $B$ or better, with $B$ grades in the fifteen core diploma program subjects, and with no grades below $C$ on their College record will be granted advanced standing in fifteen-seventeen semester courses towards the Bachelor of Applied Science in Mechanical Engineering (Automotive Engineering Option) degree.

## SHERIDAN COLLEGE OF APPLIED ARTS AND TECHNOLOGY

1) Craft and Design Program. Graduates of Sheridan College who have completed a three-year Craft and Design program may apply for transfer into an appropriate level of the Honours Bachelor of Fine Arts (Visual Arts) program (see 3.21.3). Transfer students must satisfy University regulations for transfer from CAATs and meet the academic requirements and standards of the B.F.A. program. Completion of the B.F.A. program in Visual Arts will normally require four terms of academic work or the equivalent at the University of Windsor. For further information, contact Visual Arts.

### 2.3.7 FORMAL ARTICULATION AGREEMENTS WITH OTHER INSTITUTIONS

## United States <br> OWENS COLLEGE

A student who completes an Associate degree at Owens Community College with a grade point average of 2.7 or higher will be accepted by the University of Windsor with advanced standing in up to 20 semester courses in a Bachelor's degree program.

## Malaysia <br> OLYMPIA COLLEGE

A student who completes an Advanced Diploma in either Accounting, Marketing or Business Administration with a minimum average of $70 \%$ be accepted by the University of Windsor with advanced standing of 20 semester courses in the Bachelor of Business Studies program.

## TAYLOR'S COLLEGE

A student who completes the American Degree Program at Taylor's College with a G.P.A. of 2.7 (B-) or higher will be accepted by the University of Windsor with advanced standing in up to 20 semester courses in an appropriate Bachelor's degree program. Excluded from this agreement is any provision for transier from the Engineering Stream in the American Degree Program to the Bachelor of Applied Science degree at the University of Windsor.

## Academy Of Learning

Graduates of selected Academy of Leaming diploma programs with a cumulative average of seventy-five percent or better may receive advanced standing (transfer credit) for specified courses in Computer Science and/or Business Administration provided that they qualify for admission under any of the policies listed in section 2.3.

### 2.3.8 RETURNING STUDENTS

Since the overall number of spaces available in a program may be limited, previous registration does not guarantee re-admis-
sion to that or any other program if a student has interrupted his or her studies.
Students who have missed the Winter term must apply for re-admission to Intersession by April 1st; to Summer Session by June 1st; or to the Fall term by August 1st. Students who missed the Fall term must apply for readmission to the Winter term by December 1st.
Individual programs may have other deadlines which will be indicated in the appropriate program section of this calendar.
Students applying for re-admission, and who are also requesting a change in program should refer to 2.4.16.
Students who have had an interruption of studies for a prolonged period will have their previous academic work assessed by the faculty concerned to determine whether credit may be retained in specific courses.
Students may apply for re-admission on the web using the Student Self Service page at http://www.uwindsor.ca or may request the Returning Student Application form at the Office of the Registrar.

### 2.4 Undergraduate Degree Regulations

Students are responsible for becoming familiar and complying with the general regulations of the University as contained in this section. Additionally, students must be familiar and comply with the regulations of the Faculty in which they are enrolled. These particular requirements may be found in the Faculty and program sections of this Calendar.
Students also are directed to read the "Statement of Responsibility" on the inside front cover, and the calendar of important dates and deadlines in Section 1.1.

### 2.4.1 CLASSIFICATION OF STUDENTS

A full-time student is one who is registered in four or more undergraduate courses in a term.
A part-time student is one who is registered in fewer than four undergraduate courses in a term.

A regular student is one who has met the average requirements for admission or the minimum average requirements for continuation in his or her program of studies.

A conditioned student is one who, at the time of admission, does not have standing in a required subject or subjects.
A visiting student is one who takes courses for credit for the purpose of transferring the credit to the university at which he or she was previously registered. Normally, visiting students are advised to have written permission from the home university in order to register for courses.

A special or non-degree student is one who is taking courses for credit but not proceeding to a degree at this University.
An audit student is one who attends a course(s) but does not receive any grade(s) or credit for the course(s) towards a degree. Such a student will not be allowed to write examinations and may not be graded in any way, but will be required to pay the regular fees for the course(s).
A student on academic probation is one who has not met the full admission requirements to a program or a student who, once admitted, has shown unsatisfactory progress at the conclusion of each term. (See the regulations pertaining to each faculty.)
Academic probation is removed if a student demonstrates satisfactory progress by the end of the probationary period. Normally, a student will be required to withdraw from a faculty if performance is not satisfactory at the conclusion of the academic probationary period.
For regulations pertaining to the possible readmission of students who have been re-
quired to withdraw, see the regulations pertaining to each faculty.

### 2.4.2 ACADEMIC ADVISING

The responsibility for becoming familiar and complying with the requirements for degrees and with academic regulations rests primarily with the student. Every student can access a "Degree Audit Report" on the Student Self Service page at http://www.uwindsor.ca which reports a student's progress towards fulfilling degree requirements. An unofficial transcript is also available on the web.
In addition, academic advising is strongly recommended for all students. Academic units provide individual assistance to students both in the selection of their programs of studies and in the choice of courses in keeping with program requirements. General questions normally should be addressed to the Associate Dean of the Faculty.
Students are strongly urged to seek course and program advising to ensure that they understand degree requirements. It is recognized that many students may not have decided on their major areas or on their final career goals prior to entering University. Consequently, it is not unusual for students to change their programs of study after taking several courses. Every effort is made to assist such students, within the limits of the requirements of the various programs.
Students who are considering program changes may request assistance from advisors within their proposed area of study. Application forms for a change of program are available on the web on the Student Self Service page at http://www.uwindsor.ca or from the Office of the Registrar or the Student Information Resource Centre (SIRC); completed forms should be submitted to the Office of the Registrar.
Students are required to have declared a major by the time they have successfully completed ten semester courses.

### 2.4.3 RESIDENCY REQUIREMENTS

The number of courses required for the attainment of any degree or certificate is indicated in each program. These requirements may be reduced through the transfer of credit from another university (2.3.6). However, a student will be required to complete successfully, at the University of Windsor, a minimum of ten courses (thirty semester hours) numbered 200 or higher to qualify for a degree from the University of Windsor. Residency requirements can be met by University of Windsor courses taken either oncampus, at off-campus sites or through Distance Education. These ten courses must include a minimum of four courses in the major field(s) of study to qualify for a three-year major degree or a minimum of eight courses in the major field of study to qualify for a four-year Honours or Major or professional degree except in the Faculty of Engineering where a student must complete at least $50 \%$ of the total number of weighted units required for the Bachelor of Applied Science.

A student will be required to complete successfully a minimum of five courses (fifteen semester hours) to qualify for a certificate offered in the Faculty of Arts and Social Sciences and six courses (eighteen semester hours) to qualify for a certificate offered in the Odette School of Business at the University of Windsor.
To qualify for a Minor, a minimum of two courses counting toward the Minor must be successfully completed at the University of Windsor.

### 2.4.4 ADVANCED STANDING

The granting of advanced standing reduces the total number of courses a student must complete for a degree.
By Transfer. A student who has successfully completed a course with a minimum grade of C - at a recognized institution of higher learning may be granted credit for that course. (See also 2.3.6.) The grade will not be shown on the University of Windsor tran-
script. The transfer of credits from another institution will be evaluated by the Office of the Registrar in consultation with the appropriate academic unit. Students should begin this process as early as possible in order to ensure appropriate placement in their program. An official transcript (and translation, if necessary) and a copy of course descriptions should be submitted to the Office of the Registrar at the time of application. Students who feel that the evaluation of prior academic work is not appropriate must appeal their evaluation to the Office of the Registrar within one term after admission to their program of study.
By Examination: A student may acquire knowledge of the subject matter of a course in a manner which does not provide a basis for credit by transfer. Such a student may request to write an examination for advanced standing within one term after admission to a specific program. If such request is approved and the examination is administered, a minimum grade of C - is required for the granting of advanced standing. Success in such examinations will be recorded as "Advanced Standing by Examination" with the credit value of the course and a grade of "Pass". A student who is unsuccessful in attaining advanced standing after an initial examination will not be permitted a second attempt. Contact the Office of the Registrar for application forms and additional information.
By Prior Learning Assessment: A student may acquire knowledge of the subject matter of a course in a manner which does not provide a basis for credit by transfer. Such a student should contact the Prior Learning Assessment Co-ordinator in the Student Information Resource Centre for application forms and additional information within one term after admission to their program of study.

### 2.4.5 LETTERS OF PERMISSION

A student who wishes to take one or more courses of his or her program at another university must request a "Letter of Permission" in advance of registration to ensure that the
course(s), if completed successfully, will be credited towards his or her degree program.
Application for a "Letter of Permission" will be made at the Office of the Registrar. Approval shall be based on the applicant's overall academic record, the appropriateness of the particular course to the applicant's program and on any other factors deemed relevant. Students on academic probation will not usually qualify for a "Letter of Permission". The appropriate fee will apply.
Following approval of the application, the Registrar shall issue a "Letter of Permission" to the applicant and the university concerned.
Upon completion of the course(s) the student must request the visited institution to submit an official transcript for any course(s) attempted to the Office of the Registrar. The course(s) successfully completed with a grade of C - or better will be credited towards the degree, but the grade(s) received will neither be recorded nor used in the calculation of University of Windsor averages.

### 2.4.6 ADDITIONAL UNDERGRADUATE DEGREES

The following regulations apply to students who have been granted degrees from either the University of Windsor or any other accredited university.
Students with a generalB.A. or B.Sc. degree may not receive a second, general B.A. or B.SC. degree in a second major area of study. Students in the Faculty of Arts and Social Sciences should refer to Letters of Equivalency in Section 3.1.4. Students in the Faculty of Science should refer to Section 4.1.15.

Students with a general B.A., B.Sc., B.C.S. or B. Math. may be granted advanced standing towards the fulfillment of graduation requirements for the Honours or four-year Major of the respective degree.
Students with a general degree may be granted advanced standing for a maximum of twenty courses towards the fulfillment of
graduation requirements for a different, general degree or a professional degree.
Students with a four-year Major degree may not receive an Honours degree in the same area of study.
Students with an Honours or four-year Major B.A., B.Sc., B.C.S., or B.Math. degree may not receive a general B.A., B.Sc., B.C.S., or B.Math. degree in a second area of study.

Students with an Honours or four-year Major degree in a particular area of study may not receive a further combined Honours or fouryear Major degree in that area and another. Students with an Honours or four-year Major B.A., B.Sc. B.C.S. or B.Math. degree may be granted advanced standing for a maximum of thirty courses to wards fulfillment of graduation requirements in a second Honours or four-year Major B.A., B.Sc., B.C.S, or B.Math. degree in another area of study.

Students with a professional degree may be granted advanced standing for a maximum of twenty courses towards fulfillment of graduation requirements for a general degree and thirty courses for an Honours or four-year Major degree.

### 2.4.7 CERTIFICATE AND DIPLOMA PROGRAMS

Students in the Faculty of Arts and Social Science who wish to apply credits received in a certificate or diploma program toward a degree program may be granted advanced standing for all of the courses from the certificate program towards the fulfillment of graduation requirements for a degree. However, once a student registers in a degree program, only $50 \%$ of the courses from subsequent certificates or diploma programs may be counted toward the degree requirements.
All other students who wish to apply credits received in a certificate or diploma program toward a degree program may be granted advanced standing for a maximum of $50 \%$ of the courses from the certificate program towards the fulfillment of graduation requirements for a degree. As well, those who wish to apply credits received in a degree pro-
gram toward a certificate or diploma program may be granted advanced standing for a maximum of $50 \%$ of the courses required for the certificate or diploma.
All students who wish to apply credits received in a certificate or diploma program towards an additional certificate or diploma program may be granted advanced standing for a maximum of four courses towards the fulfillment of requirements for the additional certificate or diploma.

### 2.4.8 DEFINITION OF COURSES AND SESSIONS

The word "course" generally refers to a 3.00 credit hour offering which is given over one term. Each term includes approximately thirteen weeks of classes. During each regular academic year (September to April), the Fall term runs from early September to early December and the Winter term runs from early January to mid-April. Each term concludes with final examinations. Additionally, the University schedules courses in a Summer term which includes Intersession (May - June) and Summer Session (July - August), each of which are approximately six weeks in duration. Courses given in these sessions carry the same credit as those in the Fall and Winter terms. Some courses offered in the Summer Term run from May - August (12 weeks).
In some areas, courses also may be offered for 1.50 credit hours, or for 6.00 credit hours. Courses of any credit hour value may be offered over multiple terms or over a part of a term.
In a few cases a course may be "linked" with another course in the sense that credit is granted only when both courses have been completed successfully. Course descriptions indicate "linked" courses. Unless otherwise indicated, such courses must be taken in successive terms.
The time required to complete programs can vary according to the student's choice. If courses are taken exclusively in the Fall and Winter terms, a general degree normally is completed in three years and a four-year Honours, Major or professional degree in
four years of full-time study. Students may choose to accelerate their programs by attending Summer term, Intersession and/or Summer Session, or may spread their programs over a longer period by attending as part-time students. Some programs place a time limit on degree completion. Refer to individual Faculty and program regulations for such limits.

### 2.4.9 COURSE CONTENT

Information regarding the content and the hours of instruction per week for all courses is to be found in the individual subject area listings. The time schedule for classes can be obtained at the Office of the Registrar.
The University does not attempt to impose uniformity in methods of course presentation. Therefore, methods of course presentation vary and may involve lectures, lectures combined with class discussion, small group or tutorial instruction, seminars, or other combinations of the above. In all cases, the method(s) to be used will be explained early in the course.

### 2.4.10 COURSE NUMBERING SYSTEM

Each course is identified by a three-part number. The first part refers to the Faculty, the second part to the subject area, the third to the level of the course. Thus, the course $02-46-220$ would be a course in the Faculty of Arts and Social Sciences (02-), in the subject area of Psychology (46-) and would be at a level that places it among courses in the 200 series. The series 100, 200, 300, and 400 numbers are intended to indicate progressively more demanding content and correspondingly increasing background and competence on the part of the students enrolled in the course.
Numbers in the range 100-199 are ordinarily used for the introductory courses in most disciplines. Within the range, however, a lower number does not necessarily signify more elementary content.
It is important that students planning their courses have clearly in mind the significance of these numbers so that they may guard
against undertaking course work at levels for which they are insufficiently prepared. A number of courses have stated prerequisites which are prior requirements for entry to a course. Students who do not satisfy the prerequisite for a course, or who in the opinion of the instructor do not possess an equivalent background to that of the stated prerequisite, may not register for the course, and may be removed ifthey register inappropriately.

### 2.4.11 COURSE EQUIVALENCY

With the permission of a program advisor in the major area, a student may substitute one course for another of equivalent content. While this equivalent course(s) satisfies the requirement, it does not reduce the number of courses required in the major area.

### 2.4.12 REPETITION OF COURSES

Any failed or passed course may be repeated only once. Students who have twice failed any course which is required for graduation in a particular area of study must withdraw from that program. In the Facuity of Engineering passed courses may be repeated only in the final year of study as may be allowed by the Faculty.

### 2.4.13 MAXIMUM COURSE LOAD AND OVERLOAD

Overload courses are deemed to be courses taken in addition to the prescribed term load for a given program. These could include a) courses repeated or taken in lieu of failed courses, b) courses taken to accelerate the time to completion of degree requirements or c) courses taken in addition to those required for the program in which the student is registered.
Students in Semesters 1 and 2 may not register in any course overload. Senior students (Years 2 - 4) who are not on academic probation may register in only one overioad course during the Fall and Winter terms. In the Faculty of Science course overload requests must be approved by the Associate

Dean of the Faculty of Science. In the Faculty of Engineering course overload requests must be approved by the Associate Dean of the Faculty of Engineering.
Students should not take overload courses unless absolutely necessary since the result may be poorer overall performance.
All three-year programs require the completion of thirty courses and most Honours or four-year Major programs require the completion of forty courses. For such programs, therefore, the normal course load during the Fall and Winter terms is five courses.
Certain Honours or four-year Major programs require more than forty courses for completion of the degree. For these programs the prescribed term load is indicated in the program section of the calendar.
A student may take up to three six-week courses in either Intersession or Summer Session, but no more than a total of five courses over the combined Intersession and Summer Session time period.
The normal course load for Co-op programs which include a summer study term is included in the program section of the calendar (see 2.8.2 Overload Course Fee).

### 2.4.14 OPTIONS

Options are courses in subjects other than the major subject. For the purpose of meeting option requirements the University categorizes its courses as follows:

## ARTS

## Art History

Oriental Studies
Classical Civilization
Dramatic Art
English and Creative Writing
General Courses, Faculty of Arts and
Social Sciences (01)
Intercultural Studies
Multicultural Studies
Music-Academic Studies
Music-Performance Studies
Philosophy
Visual Arts

## LANGUAGES

French*
German*
Greek
Hebrew
Italian*
Japanese
Latin
Ojibwe
Russian*
Spanish*

- The following courses will not satisfy the Languages option: French 29-280, German 15-230, 15-234, 15-260, 15-261, 15-262, 15-360; Italian 21-230, 21-260, 21-261, 21356; latin 14-230; Spanish 23-235, 23-260, 23-261; Russian 17-230, 17-231, 17-232, 17-260, 17-261, 17-265, 17-266 or any other culture courses or courses taught in English. These courses do satisfy Arts options


## SOCIAL SCIENCES

## Anthropology

Communication Studies

## Economics

General Courses, Faculty of Arts and Social Sciences (02)
Human Geography (42-) and Physical
Geography (67-)**
History
Labour Studies
Planning
Political Science
Psychology
Social Work
Sociology
Women's Studies**

## SCIENCE

Biology
Biochemistry
Chemistry
Computer Science
Environmental Science
General Courses, Faculty of Science (03)
Geology
Mathematics
Physical Geography (67-)***

Physics
Statistics
Women's Studies**
*" Women's Studies $53-220$ will satisty either a Social Science or a Science option requirement, 53-106 and 53-215 can satisfy either a Social Science or an Arts option requirement.
** While any Geography (42-) or Physical Geography (67-) course will satisfy a Social Science option, only Physical Geography 67-100, 67-102, 67-205, 67-210, 67-220, 67-221, 67-301, 67-302, 67-310, 67-367, $67-370,67-402,67-410,67-443$, and 67444 will satisfy a Science option requirement.

## PROFESSIONAL

Business Administration
Education
Engineering
Kinesiology
Law
Nursing

### 2.4.15 MINOR

A minor is not required but is available in most subject areas. See the individual program sections for availability of a minor in a specific discipline. A minor normally requires the completion of six courses as specified by the regulations of individual programs, and a minimum average of C - $(5.0)$ in all minor courses. The exception is the minor in Business Administration which is only available to Engineering and Science students and comprises eight courses. Courses completed to fulfill the major requirements cannot be counted toward a minor, but courses completed for other and option requirements under the major degree can be used to fulfil the minor requirements. Courses counted toward a minor cannot be counted toward a second minor. An 'Application for Minor Form' is available in the department of the minor program; it should not be completed until a student is applying to graduate.

### 2.4.16 PROGRAM TRANSFERS

A student who wishes to transfer to a new program may apply on the web on the Student Self Service page at http://www.uwindsor.ca or may complete the appropriate transfer application form at the Office of the Registrar. All program transfers and conditions for transfer are subject to the approval of the Dean in accordance with regulations established by the Faculty into which the student wishes to transfer.

1) Normally a student who has a cumulative G.P.A. of 5.0 or greater in the previous program, and who meets the admission requirements of the intended program will be permitted to transfer and credit will be granted for all courses completed that apply to the intended program.
2) If a student has been required to withdraw from a program, the student normally will be considered for admission to the new intended program on the same basis as students who have been required to withdraw from the program.
3) All courses that are transferable, whether passed or failed, will be considered in calculating both the cumulative and major averages (where appropriate) in the new program.

### 2.4.17 COMBINED MAJOR

Students wishing to combine two areas of study from the Arts, Languages, Social Sciences, or Science within a single four-year Honours B.A. or B.Sc program may do so if the areas of study concemed have provided for this possibility in their respective sections of the Calendar. Such programs require a total of forty courses usually including a minimum of sixteen courses in each area to be selected in accordance with the regulations of each area of study as defined in the appropriate section of the calendar.

### 2.4.18 SENIOR-LEVEL COURSE REQUIREMENTS

Three-year degree programs require a minimum of sixteen courses at or above the 200 level. All four-year programs require a minimum of twenty-six courses at or above the 200 level. Consequently, no student will be able to count more than fourteen 100 -level courses towards a degree.

### 2.4.19 STANDING REQUIRED FOR CONTINUATION IN PROGRAMS

1) The requirements for continuation "in good standing" are as follows, unless otherwise specified in the program section of the calendar:
A cumulative G.P.A. of 5.0 and a major G.P.A. of 5.0 in all General and Honours B.A.and B.Sc.degree (with major) programs except for the Honours B.Sc. Degrees offered in Computer Science, B.C.S.(General), B.Math,(General), B.Comm.(Honours Business Administration), B.Comm. (Honours Business Administration and Economics), B.M.A., B.Sc.N.;
A cumulative G.P.A. of 5.0 and a major G.P.A. of 8.0 in the B.Comm. (Honours Business Administration and Computer Science), B.F.A., B.M.T., B.Mus., B.Sc. (Honours) programs offered in Computer Science, B.S.W. , B.C.S.(Honours), B.Math (Honours) and B.O.R;
A cumulative G.P.A. of 5.0 in the following programs: three-year general B.Sc. degree (without major) programs, B.A.Sc., B.H.K.
2) An appropriate Academic Standing Committee within each Faculty reviews the academic record of each student and makes academic decisions as appropriate in light of the cumulative and major averages achieved. In most programs this evaluation occurs at the conclusion of the Winter term. In certain programs (such as Co-operative Education programs and Kinesiology), this evaluation may occur at the conclusion of any term, depending upon the structure of the program.
3) A student will automatically be placed on probation if he/she has not met the minimum cumulative and major average requirements at the end of any term in which his/her record is not being formally reviewed,
4) A student's record will be referred to an appropriate Academic Standing Committee within the Faculty for decision if he/she has not met the minimum cumulative or major average at the end of the term when the record is being reviewed.
(a) If the cumulative and major average requirements are 5.0 and if the student has achieved an average between 4.0 and 4.9, the student normally will be allowed to continue on probation until the next evaluation period. By the subsequent evaluation period both the cumulative and major averages must be raised to at least a 5.0 or the student may be required to withdraw from the program.
(b) If the major average requirement is 8.0 and if the student has achieved a major average below 8.0 , the student will be placed on probation and will be allowed to continue on probation until the next evaluation period. By the subsequent evaluation period the major average must be raised to at least 8.0 or the student may be required to withdraw from the program.
(c) If the cumulative average is below 4.0 the student will be required to withdraw.
5) Notification of the requirement to withdraw is included on the final grade report. Students who have been required to withdraw may appeal. The appeal must be in writing to the Office of the Dean of the Faculty and must be submitted with any supporting documentation within six weeks of the release of final grade reports by the Office of the Registrar. Appeals are considered by the Academic Standing Appeals Committee; only circumstances of an extraordinary nature will result in rescinding the requirement
to withdraw. Students may contact the appropriate Office of the Dean for information concerning appeals procedures.
6) A student who has been required to withdraw may not register in the program from which he or she has been required to withdraw for twelve months.
The student must apply for readmission through the Office of the Registrar by the appropriate deadline date for the term desired and must include with the application a statement of rationale, and documentation of academic success elsewhere.

Readmission to a program is not automatic and will be dependent upon an assessment of the applicant's prospects for successful completion of the program.
If readmitted, the student will be placed on probation and must raise the cumulative and major averages to 5.0 or higher by the next evaluation period and must satisfy any additional conditions of readmission which may have been imposed. If the student fails to meet such requirements, he or she normally will be required to withdraw.
A student who has been required to withdraw a second time will not be eligible for readmission under any conditions.

### 2.4.20 STANDING REQUIRED FOR GRADUATION

In order to graduate a student must obtain minimum Grade Point Averages as follows:
A cumulative G.P.A. of 5.0 and a major G.P.A. of 5.0 in all three-year B.A.(General), B.Sc.(General with major), B.C.S.(General), B. Math (General) degree programs, B. Comm. (Honours Business Administration), B.Comm. (Honours Business Administration and Economics), B.M.A., B.Sc.N.;
A cumulative G.P.A. of 5.0 in three-year B.Sc. (General without major) degree programs, B.A.Sc., B.H.K.;
A cumulative G.P.A. of 5.0 and a major G.P.A. of 8.0 in all Honours B.A. and Honours B.Sc. degree programs. (Students completing the Honours degree with a cumulative G.P.A. of at least 5.0 and a major
G.P.A. of at least 5.0 but less than 8.0 will be awarded the four-year Major degree, where applicable);
A cumulative G.P.A. of 5.0 and a major G.P.A. of 8.0 in the B.Comm. (Honours Business Administration and Computer Science), B.F.A., B.M.T., B.Mus., B.P.A., B.S.W., B.C.S.(Honours), B.Math (Honours) and B.O.R

### 2.4.21 INTRODUCTORY STATISTICS COURSES

Credit may not be given for more than one introductory statistics course, regardless of from which faculty they are taken. Students in Arts and Social Science will normally take the General Faculty course 02-250. Students in Business will normally take 73-105 and students in Science will normally take 65-205.

### 2.4.22 POLICY ON PLAGIARISM

Plagiarism is defined as: "The act of appropriating the literary composition of another, or parts of passages of his or her writing, or the ideas or language of the same, and passing them off as the products of one's own mind." (Black's Law Dictionary)
It is expected that all students will be evaluated and graded on their individual merit and all work submitted for evaluation should clearly indicate that it is the student's own contribution.
Students often have to use the ideas of others as expressed in written or published work in preparing essays, papers, reports, theses and publications. It is imperative that both the data and ideas obtained from any and all published or unpublished material be properly acknowledged and their sources disclosed. Failure to follow this practice constitutes plagiarism and is considered to be a serious offence. Thus, anyone who knowingly or recklessly uses the work of another person and creates an impression that it is his or her own, is guilty of plagiarism.
Plagiarism also includes submitting one's own essay, paper, or thesis on more than
one occasion. Accordingly, it is expected that a thesis, essay, paper or a report has not been and is not concurrently being submitted for credit for any other course. In exceptional circumstances and with the prior agreement of the instructor, a student may use research completed for one course as part of his or her written work for a second course.
A confirmed incident of plagiarism will result in a sanction ranging from a verbal warning, to a loss of credit in the course, to expulsion.

### 2.4.23 POLICY ON UNACCEPTABLE USE OF COMPUTER RESOURCES

Clients within the University community using computing resources are entitled to the basic human rights of privacy and academic freedom. This privacy and academic freedom extends from the security on individual computer accounts and files, to the non-interference in legitimate computer use for University activities.
The holder of a computer user ID and password will protect the campus computing facilities from unauthorized access by keeping his/her password confidential and by changing it regularly.
Notwithstanding the foregoing principle on individual privacy and academic freedom, certain uses of computing resources are unacceptable. In any case, the campus network services are subject to the acceptable-use guidelines established by regional and national networks (e.g.,ONet and the Intemet); the applicable guidelines are available from Information Technology Services.
In general, six major areas of unacceptable use are identified:
(a) Uses that violate federal or provincial laws, or University bylaws and policies such as those concerning information confidentiality.
(b) Any uses that unduly interfere with the work of others or with the work of host systems. This includes, but
is not limited to the unauthorized use of a computer user ID or password; the seeking of information about, or the attempt to modify the University's computer security system; and the knowing propagation of computer viruses or electronic chain letters.
(c) Unauthorized copying of proprietary software, publications, or files.
(d) Uses of commercial software that in any way violates the applicable licensing agreement.
(e) Uses related to commercial activities including, but not limited to the distribution of advertising material, the offering of network information and services for sale or personal gain, or to private enterprises.
(f) Computer information that portrays either men or women or their body parts in a pornographic or derogatory manner.

A confirmed incident of unacceptable use will result in a sanction ranging from a verbal warning, to revocation of computing privileges, to expulsion, and to criminal prosecution.

### 2.5 Registration

### 2.5.1 TIME AND PLACE OF REGISTRATION

Each student must register at the beginning of each term/session in the manner designated by the Registrar. Although the courses selected may be offered in different Faculties of the University, all students register through the Registrar's Office only.
Deadline dates for fee payment vary from term to term (see 2.8.1 and 1.1, "Calendar of the Academic Year'). Astudent who maintains an active course registration on the first day of term is obligated to make fee payments in accordance with the procedures in section 2.8.1. The non-payment policies in 2.8 .4 will be applied to a student who has not
made satisfactory fee arrangements with the cashier. (See 2.8.4).

### 2.5.2 PROVISIONAL REGISTRATION

A student whose application is not complete by the regular registration period may be allowed to register provisionally. All required forms and documents must be submitted before the last day of late registration.

### 2.5.3 WITHDRAWAL

1) Full-time undergraduate students who intend to withdraw completely from the University are required to undergo an interview, and complete the appropriate forms at the Educational Development Centre.
The status of a student who withdraws from full-time studies is left to the decision of the Faculty in which the student is registered and will be reported to the student through the Office of the Registrar.
Part-time students who find it necessary to withdraw from a course or from the University may drop their courses over the web on the Student Self Service page or must notify the Registrar in person or by registered mail.
2) Students wishing to withdraw from a course or courses may do so over the web using the Student Self Service page or may use the "Course Change Form" which is available from the Office of the Registrar.
Students must withdraw from a course or courses within the withdrawal periods as indicated below. Specific dates vary from term to term and are indicated in the "Calendar of the Academic Year" (see 1.1). Withdrawal periods for courses in other sessions are normally set at approximately two-thirds of the course length. The withdrawal will be entered on the student's transcript as VW, (Voluntary Withdrawal), which is defined as "Withdrawal in good standing. No academic credit."
Students may not withdraw from a course or courses after the appropriate designated withdrawal period. After the voluntary withdrawal period for a course, students remain
registered and will be assigned grades as appropriate.
A student who wishes to drop a course or courses after the appropriate withdrawal period based on medical or compassionate grounds should refer to section 2.6 .5 or to Senate Bylaw 51 which is available in the Office of the Registrar or at the University website.
3) The dates for withdrawal from courses which may result in partial tuition refunds vary from term to term. See 1.1, "Calendar of the Academic Year" for appropriate dates and 2.8.7, "Withdrawal and Refund Policy". The Cashier's Office will make the appropriate adjustment of fees where applicable.

## WITHDRAWAL PERIODS

One-term course offered during Fall or Winter term - within eight weeks of beginning of the term.
Two-term course offered during Fall and Winter term - within four weeks of beginning of the Winter term.

Summer term (Intersession/Summer Session):
Three-week course - within two weeks of beginning of the session.
Six-week course - within four weeks of beginning of the session.
Eight-week course - within five weeks of beginning of the session.
Twelve-week course - within eight weeks of beginning of the session.

### 2.6 Examination and Grading

 Procedures
### 2.6.1 TESTING PROCEDURE

The following applies to all undergraduate programs except in the Faculty of Law and the Faculty of Education.
It is expected that all courses will have some type of non-optional, meaningful, final test-
ing procedure (written test, oral interview, essay, take-home test, etc.) during the examination period.
Three-hour evaluation periods will be scheduled in the formal final examination periods in each term of the regular year for all courses which terminate in that term. All final testing procedures as indicated above will take place or fall due during the three-hour period so scheduled. The actual duration of testing procedures during the scheduled period may be less than three hours at the discretion of the individual instructor.
If oral or other special types of examinations can not be accommodated in the three-hour period, notice will be given to the Registrar by the Dean (or delegate) of the Faculty involved, and special arrangements will be made.

The Office of the Registrar will complete the foregoing scheduling for the Fall term prior to September 1, and for the Winter term prior to January 1 , so that it is available to students before they finalize their course selections.
The last week of lectures in each term must be free from any type of testing procedures. This regulation does not apply to routine laboratory tests or normal field work evaluations which are part of a series. Courses that are presented by a specialized teaching method such as self-paced methods or modularized methods where the testing procedures are an integral part of the instructional process shall be exempt from this regulation subject to approval of the Dean of the Faculty in which the course is given.
If the final testing procedure takes the form of an oral interview, a take-home test, an essay, etc., it must take place or become due during the examination period.
It is left to each academic area to set the range of the weights of the final testing procedures.
The following applies to all undergraduate faculties.
Each instructor must inform his or her students, by the end of the second week of each course, concerning the following:
(a) all procedures for determining the final grade in a course, including those for the conversion of raw scores into letter grades and the procedures by which students are evaluated by observers or supervisors, rather than by written examinations or submitted assignments;
(b) the approximate dates for tests, essays, etc.

Alterations of the announced dates under (b) above may be made by the instructor with the consent of the majority of the registered class. Instructors may not alter the date of final examinations if scheduled by the Office of the Registrar.

### 2.6.2 OFF-CAMPUS EXAMINATIONS

A student with a cogent reason may be granted permission to write an examination at an off-campus centre. Application forms are available in the Registrar's Office. To allow sufficient time for arrangements and mailing, approved applications must be submitted, along with the appropriate fee, to the Registrar's Office at least one month prior to the date on which the examination is to be written.

### 2.6.3 GRADING

Grades assigned and their significance are as follows:

| $\mathrm{A}^{+}, \mathrm{A}, \mathrm{A}-$ | Excellent |
| :--- | :--- |
| $\mathrm{B}^{+}, \mathrm{B}, \mathrm{B}-$ | Good |
| $\mathrm{C}^{+}, \mathrm{C}, \mathrm{C}-$ | Fair |
| $\mathrm{D}^{+}, \mathrm{D}, \mathrm{D}-$ | Pass |
| $\mathrm{F}, \mathrm{F}-$ | No Credit |
| Inc | Incomplete |
| IP | In Progress |
| NR | No Report |

For the purpose of calculating a grade point average, the following numerical equivalents are used:

| $\mathrm{A}^{+}$ | 13 | A | 12 | $\mathrm{~A}-$ | 11 |
| :--- | ---: | :--- | ---: | :--- | ---: |
| $\mathrm{~B}^{+}$ | 10 | B | 9 | $\mathrm{~B}-$ | 8 |
| $\mathrm{C}^{+}$ | 7 | C | 6 | $\mathrm{C}-$ | 5 |
| $\mathrm{D}^{+}$ | 4 | D | 3 | $\mathrm{D}-$ | 2 |
| F | 1 | F | 0 | NR | 0 |

A student's progress within a program will be evaluated on the basis of the grade point average. For purposes of calculation, the grade point earned in a 6.00 credit hour course will be double the weight of that earned in a regular 3.00 credit hour course. A grade point earned in a 1.50 credit hour course will be given one-half the weight earned in a 3.00 credit hour course.

## Example:

| Letter <br> Grade | Grade <br> Points | Credit <br> Weight |  |  |  |
| :--- | ---: | ---: | ---: | :--- | ---: |
| A | 12 | $\times$ | 1.5 | $=$ | 18 |
| B | 9 | $\times$ | 3 | $=$ | 27 |
| B- | 8 | $\times$ | 6 | $=$ | 48 |
| C $^{+}$ | 7 | $\times$ | 3 | $=$ | 21 |
| F- | 0 | $\times$ | 1.5 | $=$ | 0 |
|  |  |  | -15 |  | 114 |

Average: $(114 \div 15)=7.6$
Some programs calculate weighted averages based upon the number of contact hours for each course. In these programs, the average is calculated as follows:

| Letter <br> Grade | Grade <br> Points | Course <br> Weight |  |
| :--- | ---: | ---: | ---: |
| A | $12 \times 2.50=$ | $=30.00$ |  |
| B | 9 | $\times 3.00=$ | $=27.00$ |
| B- | 8 | $\times 4.25=34.00$ |  |
| C $^{+}$ | 7 | $\times 6.00=$ | $=42.00$ |
| F- | 0 | $\times 8.00=$ | 0.00 |
|  |  |  | - |
|  |  |  | 23.75 |

Weighted Average: $(133.00+23.75)=5.6$
Courses in which an F or F-grade is received will be recorded on the student's tran-
script and may be factored into the Grade Point Average but will carry no credit toward a degree. A grade of IP is recorded at the end of the first term of a two-term course.
A grade of NR is assigned to students who although registered in a course have neither attended regularly nor submitted assignments. In computing a student's average, $N R$ is equivalent to $F$-.
Subject to regulations laid down by the faculty or school, a grade of "Incomplete" may be assigned to a student who so requests at the discretion of the instructor and academic unit head. Such a grade may be granted to a student who has not been able to complete all course requirements by the date of the final evaluations. The grade of "Incomplete" could be used in situations such as:
(i) the missing of an examination or test for a valid reason,
(ii) the failure to complete required projects or assignments in the allocated time owing to circumstances beyond the student's control.
A grade of "Incomplete" must be changed to a letter grade not later than six weeks after the last date of the examination period. If no grade has been assigned by that date, a final grade of F is automatically entered in the student's record by the Office of the Registrar.

### 2.6.4 CALCULATION OF AVERAGES

The marks obtained in all courses taken at the University of Windsor are used to calculate a cumulative average. Similarly, all marks obtained in courses in the major area of study are used to calculate major averages. Provided that the course is available in a subsequent registration period, a student may repeat a course only once for purposes of upgrading a major or cumulative average. Both the original mark and the upgraded mark obtained will remain on the student's official record. However, except in the Faculty of Engineering, only the mark received in the second attempt is used in calculating the cumulative and major averages. In the Faculty of Engineering both the origi-
nal mark and the upgraded mark will be used to compute the cumulative average.

### 2.6.5 APPEALS

Before exercising their right of appeal against a grade, students should consult Senate By-Law 51, Examination Procedures, copies of which are available at the Office of the Registrar or at the University website. Students registered in the LL.B. program should consult the Academic Status regulations of the Faculty of Law.
All appeals must be made in writing to the appropriate Faculty through the Office of the Registrar, no later than three weeks after the final mark has been released by the Registrar. The official release dates are posted on the web. The appeal must be accompanied by a $\$ 20$ fee which will be refunded to the student if the appeal is successful. Students must submit a letter of rationale for the appeal, including relevant supporting documents.
Aegrotat Standing: A student who wishes to receive consideration on medical or compassionate grounds should communicate with the Office of the Registrar as soon as possible. A letter of rationale and supporting documents (e.g., the attending physician's letter) must be submitted to the Registrar forthwith.

### 2.7 Graduation

Registration in any program does not constitute an application for a degree, certificate, or diploma.
An official application for graduation must be filled out and filed in the Registrar's Office approximately three months prior to the Convocation at which the applicant hopes to graduate (see 1.1, "Calendar of the Academic Year").
Applications received after the deadline dates will be held for the next Convocation.
In cases where credit is sought for work done elsewhere, all official transcripts or other documents as required by the Regis-
trar's Office, but not already submitted, must be conveyed to the Registrar's Office no later than six weeks before Convocation. Failure to comply with these regulations will disqualify the student from graduation at the Convocation concemed (see 2.4.20 "Standing Required for Graduation").

### 2.8 Fee Regulations and Schedule

The University reserves the right to make changes without prior notice in the various fee scheduies, as well as changes in rules and regulations and the revision or cancellation of particular courses and programs. The acceptance of fees does not necessarily imply approval of registration.
The following regulations apply to all students.

### 2.8.1 PAYMENT OF FEES

Fees are due and payable before the commencement of regular term classes. (see 1.1, "Calendar of the Academic Year" for specific dates). As a convenience, students may pay their tuition fees at any time prior to the appropriate due date. It is the responsibility of the student to ensure that deadlines are met.

Cheques or other remittances must be made payable to The University of Windsor and must be received by the Cashier's Office prior to the due date. The student's name, identification number, address and telephone number should be recorded in the upper portion of the form of the remittance to ensure that the records are properly credited.
Students may pay their fees at any chartered bank in Canada by using a bank payment form available at the Cashier's Office. If a student has a grant and/or loan (e.g.. OSAP), the loan must be assigned to the University to pay the fees. Any known difference between the amount of the award and the fees must be paid on or before the due date.

Students who are unable to complete payment of fees by the prescribed due date must arrange a fee deferment. Daily interest charges may apply. Deferments are permitted under the following circumstances:
(a) a student has evidence of having been awarded a Canada Student Loan or an Ontario Student Loan.
(b) a student has evidence of having been awarded a scholarship, bursary or similar award, which may be used to pay the fees.

Students who are sponsored and require invoices to be sent for collection of fees must bring the appropriate documentation to the Accounts Receivable Office, 1st Floor, Chrysler Hall North.
Notes:

1) It is the responsibility of the student to accurately report his or her academic status and correctly calculate the amount owing to the University for fees and other charges. Where calculations are incorrect or full payment is not made, daily interest will be charged on balances outstanding after the payment due date. Students should check all calculations thoroughly.
Any errors in a student's academic program, level, and status in Canada must be reported to the Office of the Registrar. Any errors which result in the incorrect calculation of fees owing do not relieve the student of the responsibility for payment of these fees. Students will be responsible for any additional charges incurred as a result of changes in their academic profile for all terms that are applicable.
2) It is the responsibility of the student paying his or her fees by cheque to ensure that sufficient funds are available to cover any cheques made payable to the University of Windsor. Cheques returned by the student's bank for any reason will incur return cheque penalties plus other penalties.
3) Every effort is made to process payments in a timely manner; however, cheques are valid for a period of only six months and may be cashed at any time during that period.

### 2.8.2 OVERLOAD COURSE FEE

Students who enrol in a course overload as defined in 2.4.13 will be assessed an overload course fee.

### 2.8.3 INTEREST CHARGES ON OUTSTANDING ACCOUNTS

A daily interest charge will be calculated on all outstanding accounts. The interest will be compounded monthly.
A student who has failed to comply with the above regulations may have his or her registration cancelled as of the date on which the unpaid fees were due.

### 2.8.4 NON-PAYMENT OF FEES AND CHARGES

Information concerning a cademic results of any student who has an overdue debt owing to the University shall be withheld until the debt is settled.
Students who are graduating and who have an outstanding debt will be permitted to attend Convocation, but they will not receive their diplomas until all their debts are settled.
Any student who has an overdue debt owing to the University may not be permitted to reregister until the debt is settled.
A student who has not made a satisfactory fee arrangement by the appropriate fee payment due date (see above, 2.8.1) may be subject to cancellation of his/her registration. Students will be notified by mail of any cancellations due to non-payment using the most recent address available. Appropriate charges will be assessed effective the date of cancellation.
Note: Non-payment of fees does not automatically result in the cancellation of registration in a course or courses.
Any student whose registration has been cancelled for default of payment is required to apply for reinstatement of registration at the Office of the Registrar. If the application is approved, a $\$ 50.00$ reinstatement fee is added to any other assessable charges.

Overdue accounts must be paid by cash, certified cheque, or money order.
Any student who has an unresolved grievance concerning fees or other charges may present an explanatory letter with appropriate official documentation (e.g. doctor's notes, etc.) to the Credit Manager, Cashier's Office.

### 2.8.5 TUITION AND EDUCATION CREDIT CERTIFICATE (T2202A)

A special certificate in a form acceptable to Revenue Canada authorities is required in order that the student may claim a tax credit for eligible tuition fees for income tax purposes. This certificate will be mailed out by February 28 to all students whose accounts were paid in full by December 31 of the previous year. It is the responsibility of students to ensure that their addresses are correct on the Student Records System.

### 2.8.6 SCHOLARSHIPS

Undergraduate scholarships and other awards paid to students through the Finance Office are usually credited to the student's account on the basis of one half payable in each term. A cheque for any balance owing to the student will be available to the student at the Cashier's Office.

October 31-First Instalment
February 28-Second Instalment

### 2.8.7 WITHDRAWAL AND REFUND POLICY

Graduate students who, for any reason, wish to withdraw from the University must notify, in writing, the Office of Graduate Studies and Research, as otherwise resumption of graduate study at this University may be difficult or impossible.
Full-time undergraduate students who intend to withdraw completely from the University are required to undergo an interview and complete the appropriate forms at the Office of Student Development and Support.

## 2 ACADEMIC INFORMATION

Part-ime undergraduate students who find it necessary to withdraw from a course or from the University entirely are required to notify the Registrar in person or by registered mail and to give their reasons for withdrawal.
Notice by telephone is not acceptable. Failure to attend classes does not constitute a withdrawal. Full refund will be given to parttime students enrolled in a course that has been cancelled by the University. Full- and part-time students withdrawing from regular courses during the periods indicated below will be assessed fees as indicated.

## WITHDRAWAL <br> DURING FALL OR WINTER TERM

| Week(s) One and Two | None |
| :--- | :---: |
| Week(s) Three through | Partial Fees |
| Eight | Payable |
| After Week Eight | Full fees for <br> the <br> appropriate <br> program pay- <br> able |

Refunds resulting from withdrawals will be available on request.

### 2.8.8 FREE TUITION FOR STUDENTS 60 YEARS OF AGE AND OVER

The University of Windsor offers an incentive of free tuition and incidental fees for students sixty years of age and over. It is felt that people in this group might wish to avail themselves of the University facilities, not only for degree purposes, but perhaps for personal enrichment and the fuller utilization of their leisure time. If you feel that your needs can be served according to this program, we encourage and invite you to contact the Student Information Resource Centre. This applies to Canadian citizens or Permanent Residents of Canada only.

### 2.8.9 SCHEDULE OF FEES

The Board of Govemors reserves the right to make changes without notice in the publish-
ed schedule of fees and charges if, in its opinion, circumstances so require. Any such changes will be reflected in the Self-Assessment form issued through the Cashier's Office before registration. It is the responsibility of the student to obtain this information.
The schedule of fees changes annually. Contact the Cashier's Office for information on the current schedule of fees, which outlines tuition, incidental, and other fees.
The following miscellaneous fees and charges are payable as incurred:
Undergraduate part-time studies $\$ 25.00$
application fee

Letter of Permission $\$ 27.00$
Undergraduate change of course $\$ 5.00$
Overload course Part-time per course tuition fee

| Special and supplemental exam (per course) |  |
| :---: | :---: |
| Regular time, on campus | \$10.00 |
| Outside regular time, on campus | \$20.00 |
| Off campus | \$40.00 |
| Evaluation of documents | \$40.00 |
| Transcript of record | \$8.00 |
| Duplicate T2202A |  |
| Current year | \$3.00 |
| Previous year | \$5.00 |
| Late registration (full-time students) | \$30.00 |
| Returned cheque charge | $\$ 25.00$ <br> per cheque |
| Registration reinstatement | \$50.00 |

For information regarding residences, meal plan, residence deposits, deposit refund policies, and University houses, please contact the Office of Residence Services, Room 49, Vanier Hall, University of Windsor, Windsor Ontario, N9B 3P4, telephone 519-2533000 , ext. 3379 or 3380 .

## 3 FACULTY OF ARTS AND SOCIAL SCIENCES

## Executive Dean

Kathleen E. McCrone; B.A. (Saskatchewan), M.A., Ph.D. (New York University).

## Associate Executive Deans

Robert R. Orr; B.A. (Valparaiso), M.A., Ph.D. (Iowa).
Kai Hildebrandt; M.A. (Hamburg), M.A., Ph.D. (Michigan).

Students are directed to become familiar and to comply with the general regulations of the University as described in 2.4 which apply to all students. Additionally, programs within the Faculty of Arts and Social Sciences may have particular regulations. Students enrolled in programs in the Faculty of Arts and Social Sciences also must comply with these particular requirements as found in this Calendar

Students also are directed to read the "Statement of Responsibility" on the inside front cover.

### 3.1 Degree Programs

Three-year General programs provide a moderate concentration in a specific subject, as well as a broad educational background. Students in these programs are encouraged to extend their studies over a wide range of subjects. Students are also encouraged to take courses which specifically address diversities of human experience, including culture, ethnicity, gender, or sexual orientation.
Four-year Honours programs require the completion of a larger number of courses with greater concentration in a specific subject area than do three-year General programs.

### 3.1.1 BACHELOR OF ARTS-FOUR-YEAR HONOURS PROGRAMS

Total courses: A student will qualify for the Honours B.A. degree by passing forty courses, with standing as specified in 2.4.20.

Major requirements: Specific major requirements for the four-year Honours programs vary depending upon the area of study. Individual programs, which may provide for specialization in a single subject or in a combination of related subjects, are outlined under the heading "Programs of Study" in each subject area.
Other requirements: Honours and combined Honours programs in each area of study may identify courses in areas of study other than the major that must be completed. These are specified under the heading "Programs of Study" in each subject area.

### 3.1.2 BACHELOR OF ARTS-THREE-YEAR GENERAL PROGRAMS

Total courses: A student will qualify for the General B.A. degree by passing thirty courses with standing as specified in 2.4.20.
Major requirements: At least ten and not more than sixteen courses must be chosen from one subject, which constitutes the major field. The specific requirements for a major are listed separately for each area of study. Normally, at least two courses from the major field should be included among the first ten courses taken.
Other requirements: General B.A. degree programs in each area of study may identify courses in areas of study other than the major that must be completed. These are specified under the heading "Programs of Study" in each subject area.
Students are advised to fulfill these requirements by the end of their second year.

### 3.1.3 CONCURRENT BACHELOR OF ARTS (OR BACHELOR OF SCIENCE)/BACHELOR OF EDUCATION/DIPLOMA IN EARLY CHILDHOOD EDUCATION

The Concurrent Bachelor of Arts (or Bachelor of Science)/Bachelor of Education/Diploma in Early Childhood Education Program is offered jointly over five years by the Faculty of Arts and Social Sciences (or the Faculty of Science), and the Faculty of Education, and in co-operation with St. Clair College. The aim is to provide the opportunity and training to individuals who wish to teach at the preschool and Primary-Junior levels.

Graduates of this program will receive two degrees and a diploma and will acquire the necessary skills and knowledge to fulfill the requirements for certification by the Ontario College of Teachers.

## PROGRAM REQUIREMENTS

All students are required to complete the thirty-course requirement of the University of Windsor General B.A. (or B.Sc.) degree program, in addition to the Education courses 80-203 ( 48 hours), 80-204 (48 hours), $80-$ 205 ( 48 hours), and 80-301 (144 hours), and 45 days (225 hours) of Practice Teaching (80-499). The St. Clair College Early Childhood Education component will consist of eleven courses, ED 117, ED 120, ED 130, ED 209, ED 210F, ED 310, ED 402F, ED 408, ED 409, and 640 hours of Field Placement. Requirements can also be met for teaching in the Roman Catholic school system. With additional study in the University's Summer Session, students may be able to accelerate the completion of their B.A or B.Sc. program. With Summer and and/or additional Fall/Winter studies, they may pursue four-year B.A. or B.Sc. programs as well.

## COURSE SEQUENCE

FIRST YEAR
Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; plus the B. Ed course 80-301 (Language Arts and Math); and the E.C.E. course ED 210F (Curriculum Methods).
Spring Term: two weeks of E.C.E. Preschool and two weeks of B.Ed. Primary Grades practice teaching ( 150 hours total).

## SECOND YEAR

Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-203 (Educational Psychology); and the E.C.E. course ED 120 (Child Behaviour Management).
Spring Term: four weeks of B.Ed. JK/SK practice teaching ( 150 hours total).

## THIRD YEAR

Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-301 (Art/Music/Phys. Ed.); and the E.C.E. course ED 130 (Child Development).
Spring Term: four weeks of B.Ed. Primary Grades practice teaching (150 hours total).

## FOURTH YEAR

Fall Term: the E.C.E. courses ED 310 (lnfant/Toddler) and ED 402F (Atypical Child); and the B.Ed course 80-204 (Exceptional Child).
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-301 (Social Studies/Science/Computers); and the E.C.E. course ED 117 (Introduction to E.C.E.).
Spring Term: four weeks of E.C.E. Infant/Toddler practice teaching ( 150 hours total).

## FIFTH YEAR

Fall Term: three B.A. (or B.Sc.) courses; the B.Ed.course 80-205 (Educational Admini-
stration); and the E.C.E. course ED 409 (Parent Ed.).
Winter Term: the E.C. E courses ED 209 (Curriculum Development) and ED 408 (Assessment); the B.Ed. Primary Grades Practice Teaching course 80-499 (45 days/225 hours).
Spring Term: four weeks of E.C.E. Infant/Toddler practice teaching ( 150 hours total).

## STANDING REQUIRED FOR CONTINUATION

Students must comply with the general university regulations (see 2.4.19), and with the academic regulations of their particular B.A. or B.Sc. program. In addition candidates who obtain a final grade of less than a C in (a) practice teaching, or (b) three or more Education courses in the program, will not be recommended for centification. Students may repeat only one B.Ed. course for upgrading throughout the program, excluding 80-499.

## GRADUATION

Graduates of the program will receive both the Bachelor of Arts (or the Bachelor of Science) and the Bachelor of Education (General) degrees from the University of Windsor, and the Diploma in Early Childhood Education from St. Clair College.
The Faculty of Education does not issue a teaching certificate. The Ontario Certificate of Qualification is issued by the Ontario College of Teachers upon recommendation of the Dean of the Faculty of Education. Only Canadian citizens or Permanent Residents of Canada qualify for this certificate. Under certain conditions, the Ontario College of Teachers may grant a non-Canadian citizen a Interim Certificate of Qualification.

### 3.1.4 OTHER DEGREE PROGRAMS

In addition to the Bachelor of Arts degree, several other degrees are offered by areas of study within the Faculty. Specific requirements for these degrees will be found as follows:

Bachelor of Musical Arts (see 3.15.2);
Bachelor of Music (see 3.15.2);
Bachelor of Music Therapy (see 3.15.2);
Bachelor of Fine Arts
-Acting (see 3.5.2);
-Visual Arts (see 3.21.2);
Bachelor of Social Work (see 3.19.2).

### 3.1.5 LETTTER OF EQUIVALENCY

A student completing a second major aread study in a three-year General Bachelor d Arts program may not receive an additiona B.A., but may request a "Letter of Equiva lency" upon completion of the program requirements for the major as well as at leas five courses beyond the thirty courses required for the B.A. degree.

### 3.2 General Courses, Faculty of Arts and Social Sciences

The following courses are offered through the Office of the Executive Dean of Arts and Social Sciences. The content and focus $d$ the courses listed span several disciplines, rather than being confined to a single area

## 01-120. Introduction to Biblical Hebrew I

An introduction to the alphabet, orthography, vocalization, and basic grammar of biblical Hebrew. Emphasis on elementary reading skills.

## 01-121. Introduction to Biblical Hebrew II

A study of biblical Hebrew grammar and reading of selected prose passages from the Hebrew bible. (Prerequisite: 01-120 or consent of the instructor.)

## 01-190. First-Year Seminars

First-Year Seminars delve deeply into particular problems or topics related to the research interests of the instructor. The Seminars are designed to provide closer in:
teraction with an instructor in a challenging intellectual environment in which students are introduced to the issues, literature, and study methods of the topic area. (Restricted to students in Semesters 1 and 2 of programs in the Faculty of Arts and Social Sciences.) (May not be used to satisfy Major requirements for programs in the Faculty of Arts and Social Sciences.) (May not be repeated for credit.) (Also offered as 02-190.) (3 lecture hours a week.)

## 01-204. Health-Care Ethics through the Life-Span

Explores ethical issues of general interest which arise during the life-span, from conception until death, including methods to prevent contraception, methods to aid in reproduction, medical treatment for children, organ transplantation, research on human subjects, foregoing life-sustaining treatment, advance directives, assisted suicide, and euthanasia. This course is not directed specifically to health professionals.

## 01-207. Health-Care Ethics: Professions and Health Policy

The relationships of individuals, professions, and governments to the health-care system and to public health policy are explored. Normative concepts and dominant metaphors are examined, as well as factors which support ethically responsible individuals and organizations. These factors include the commitment to ethical standards, the role of ethics consultation, organizational ethics policies, and on-going ethics education.
01-208. The Ethics of Everyday Life
Examines the ethical dimensions of how we conduct ourselves in our family life, workplace, and as citizens. Topics may include: the food we eat; conceiving and raising children; consumer/business issues; sports; employment; and care of the elderly.

## 01-209. Ethics in the Professions

Examines what constitutes a profession, its legitimacy, and its authority from society. The responsibilities of professionals to their clients, professions, and society are mapped. Codes of ethics and other statements of ethical standards, conflict of interest, and the roles of regulatory bodies and
governments are examined and related to practice through relevant case studies.

## 01-212. Science and Technology: Religious Perspectives

Issues raised by the impact of science and technology in the modern world. In judging the benefits and detriments, the advantages and disadvantages of science and technology, what role do religious perspectives play? Why do science and technology take the direction they do? Can we effectively influence their direction for greater human benefit?
01-250. Exploring the Hebrew Scriptures An introduction to reading Hebrew biblical literature. Develops the basic skills for investigating literary, historical, and religious dimensions of the text and uses these skills to explore passages selected from the Torah, Prophets, and Writings.

## 01-252. The Social World of Ancient Israel

An examination of the society of ancient Israel, focusing on the role of religion in the formation and development of the community from the exodus and the tribal confederacy, through the monarchy, to the emergence of Judaism in the post-exilic period. (This course is recommended to be preceded or accompanied by 01-250.)

## 01-350. Literary Dimensions of the Hebrew Bible

An exploration of the Hebrew bible as a literary text; the focus is on forms, styles, themes, and their literary functions. Selected examples from narrative and poetic books are examined with the aid of contemporary literary-critical-biblical theories and methods of analysis. (This course is recommended to be preceded or accompanied by 01-250.)

## 01-360. Principles and Practices of Arts Administration

Structures of arts organizations. Examination of core competencies as applied to arts organizations: fund raising, board and volunteer management, labour-management issues, program and publicity design, marketing and promotion, computer applications.

## 02-100. Introduction to Canadian Studies

This course emphasizes the transition of Canada from a European colonial society to an immigrant, multicultural society. A multidisciplinary approach will be taken in dealing with the specific problems facing Canada today.
02-101. The Transition to University An introduction to the purposes and processes of university education, emphasizing the skills and strategies needed to make a successful transition to the academic and cultural environment of the University of Windsor. (Open to Semester 1 and Semester 2 students only.) (3 lecture hours a week.)

## 02-190. First-Year Seminars

First-Year Seminars delve deeply into particular problems or topics related to the research interests of the instructor. The Seminars are designed to provide closer interaction with an instructor in a challenging intellectual environment in which students are introduced to the issues, literature, and study methods of the topic area. (Restricted to students in Semesters 1 and 2 of programs in the Faculty of Arts and Social Sciences.) (May not be used to satisfy Major requirements for programs in the Faculty of Arts and Social Sciences.) (May not be repeated for credit.) (Also offered as 01-190.) (3 lecture hours a week.)

## $\mathbf{0 2 - 2 5 0}$. Basic Quantitative Methods in the Social Sciences

Introduction to measurement of variables, organization and description of numerical data, testing hypotheses, inference, and interpretation of findings in the Social Sciences. Topics include descriptive statistics, normal distribution, probability, sampling, hypothesis testing, t -tests, correlation, and chi-square tests.

## 02-260. Creating with the Computer

Introduction to creating graphics, music, and interactive applications. Students will learn the basics of each type of application and then produce work in an area of interest in a studio environment. (Prerequisite: 60-104 or elementary wordprocessing ability.)

02-300. Remembering Canada in the Global Village
An examination of how Canada was constructed as a modern technological society. The course explores how this has been critcally analyzed in terms of dependency, both economic and cultural, challenges the analysis, and presents other images and possibilities for being Canadian in the emerging global technological order.

# 3.3 Classical and Modern Languages, Literatures, and Civilizations 

(Ext. 2873)
OFFICERS OF INSTRUCTION

## Professors Emeriti

Fantazzi, Charles; A.B., M.A. (Catholic U. of America), Ph.D. (Harvard)-1960. (Classics and Italian)
Sarkar, Kalyan Kumar; B.A., M.A. (Calcutta), Ph.D. (Paris)-1970. (Oriental Studies)
Mehta, Mahesh; B.A., M.A., LL.B., Ph.D. (Bombay)-1969. (Asian Studies)

## Professors

King, J. Norman; B.A., M.A. (Toronto), S. T.B. (Laval), Ph.D. (U. of St. Michael's College, Toronto)-1964. (Religion and Culture)
Bertman, Stephen; B.A. (New York), M.A. (Brandeis), Ph.D. (Columbia)-1967. (Classics)
Bird, Harry W.; B.A. Dipl. Ed., M.A. (Cambridge), M.A. (McMaster), Ph.D. (Toronto)1969. (Classics)

Whitney, Barry L.; B.A. (Carleton), Ph.D. (McMaster)-1976. (Religion and Culture)

## Associate Professors

Primorac, Berislav; B.A. (Assumption), M.A. (Middlebury), Ph.D. (Michigan)-1968. (Spanish and Italian)
Majhanovich, Ljubo D.; B.A., M.A. (Toronto), Ph.D. (Illinois)-1970. (Slavic Studies)
Temelini, Walter J.; B. A., M.A., Ph.D. (Toronto)-1970. (Italian)
Titiev, Janice G.; A.B., M.A., Ph.D. (Michi-gan)-1971. (Spanish)
Wendt-Hildebrandt, Susan; B.A., M.A., Ph.D. (Michigan)-1974. (German) (Head of the Department of Languages, Literatures, and Cultures/Langues, littératures et cultures)

Lage, Dietmar, B.A. (Manitoba), M.A., Ph.D. (McGill)-1983. (Religion and Culture)
Feldman, Linda; B.A., M.A., Dipl. Ed., Ph.D. (McGill)-1991. (German)
Vitale, Rosanna; B.A. (Loyola of Montreal), M.A. (Western Ontario), Ph.D. (California, Santa Barbara)-1992. (Italian and Spanish)

## Sessional Lecturer

Helbing, Ingrid; Staatsexamen (Bonn), B.A., B.Ed. M.S.W. (Windsor), M.A. (Wayne State)-1980. (German)

### 3.3.1 PROGRAM REGULATIONS

Classical Studies are devoted to the examination, analysis, and understanding of the languages, literatures, and history of the ancient Near East, Greece and Rome, and to an exploration of their cultural and linguistic legacies to modern society.
The Modern Languages program is devoted to the study and analysis of world languages in the context of their literary and cultural traditions. Sequenced, skills-based language courses and detailed analyses of language and culture provide students with the requisite skills to confront increasing glo balization successfully.
The Multicultural Studies program is based on the study of world languages, literatures, and civilizations in the context of Canadian diversity and world pluralism.
Not all courses listed (see below, 3.3.3 to 3.3.11) will be offered in each term. The programs reserve the right to limit enrolment in language courses and to place students in courses deemed appropriate to their level of language competence.
Native speakers must consult a program advisor for placement. All majors should plan their programs in consultation with an advisor.
Language courses numbered 100/101, 200/201, 220/221, and 300/301 must be taken in sequence unless special permission is obtained from a program advisor.

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

### 3.3.2 PROGRAMS OF STUDY

A minor, general, combined general, Honours, and combined Honours degree programs are offered in Classical Studies.
Minor, general, combined general, and combined Honours degree programs are offered in Modern Languages, with German, Spanish, and Italian language options.
In Multicultural Studies, a minor and a general degree program are offered.
A minor is available in Russian language.

## Minor Requirements

In Modern Languages, at least six language, literature, and/or civilization courses in one language option area (other than the major) are required.
In Russian, a minor consists of 17-100, 17101, two civilization courses, and two Russian literature courses.
In Classical Studies, at least six courses must be from the designated area.
Not more than two courses at the 100 level may count towards the minor in any area.

## CLASSICAL STUDIES

Requirements for degree programs in Classical Studies make reference to the following groups of courses:
Classical Civilization: 11-125, 11-160, 11 161, 11-162, 11-231, 11-260, 11-265, 11-$266,11-350,11-351,11-370,11-371$, 11-460.
Greek and Roman History: 12-261, 12-262, 12-281, 12-282, 12-285, 12-286.
Greek Language: 13-100, 13-101, 13-200, 13-201.
Greek Literature: 13-450.
Latin Language: 14-100, 14-101, 14-200, 14-201.
Latin Literature: 14-230, 14-233, 14-450.
Philosophy 34-270 and 34-271 (Greek Philosophy) will be accepted toward the B.A. degree in Classical Civilization in lieu of courses in Classical Studies.

## General Classical Civilization

## Total courses: thirty.

Major requirements: twelve courses in Classical Civilization (11-), Greek and Roman History (12-), Greek Language and Literature (13-), or Latin Language and Literature (14-), including 11-161, 11-162; plus two of 13-100, 13-101, 13-200, 13-201, 14-100, 14-101, 14-200, and 14-201; and at least one course in each of any three of the following four areas:
(a) Art and Archaeology: 11-265, 11-266;
(b) Greek and Roman History: any course numbered 12 -;
(c) Literature: 11-231, 11-350, 11-351;
(d) Mythology and Religion: 11-370, $11-$ 371.

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements:
(a) four other courses from Arts, Languages, Social Sciences, or Science, including Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature;
(b) two more courses from Arts, Languages, Social Sciences, or Science, excluding Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature;
(c) six courses from any area of study excluding Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature.

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

## Honours Classical Civilization (Greek or Latin Option)

Total courses: forty.
Major requirements: twenty courses, consisting of four Greek or Latin Language and Literature courses; plus 11-161, 11-162; and fourteen additional Classical Civilization (11-), Greek and Roman History (12-), Greek Language and Literature (13-), or Latin Language and Literature (14-) or Greek Philosophy courses (34-270 and/or 34-271), including at least one in each of the following four areas:
(a) Art and Archaeology: 11-265, 11-266;
(b) Greek and Roman History: any course numbered 12-;
(c) Literature: 11-231, 11-350, 11-351;
(d) Mythology and Religion: 11-370, 11371.

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Other requirements:
(a) four other courses from Arts, Languages, Social Sciences, or Science, including Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature;
(b) four more courses from Arts, Languages, Social Sciences, or Science, excluding Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature;
(c) six courses from any area of study, excluding Classical Civilization, Greek and Roman History, Greek Language and Literature, and Latin Language and Literature.

## Combined Honours Classical Civilization

Total courses: forty.
Major requirements-Classical Studies; sixteen courses in Classical Civilization (11-), Greek and Roman History (12-), Greek (13-) or Latin (14-) Language and Literature or Greek Philosophy (34-270 and/or 34-271), including 11-161 and 11-162; plus four of 13 100, 13-101, 13-200, 13-201, 14-100, 14101, 14-200, and 14-201; and at least one course in each of the following four areas:
(a) Art and Archaeology: 11-265 or 11-266;
(b) Greek and Roman History: any course numbered 12-;
(c) Literature: 11-231 or 11-350 or 11351;
(d) Mythology and Religion: 11-370 or 11-371.

Major requirements-Other Subject: as prescribed by that program.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements: plus additional options, if necessary, to a total of forty courses.

## MODERN LANGUAGES

## General Modern Languages

Total courses: thirty.
Major requirements: twelve courses, including 07-120, 08-160, and ten courses in one language area as outlined below:
German option: 15-210, 15-211, and five additional German language courses; plus one German civilization course, and one German literature course; and one further language or literature course.

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

Italian option: six Italian language courses, two Italian civilization courses, and two Italian literature courses.
Spanish option: 23-205 (or 23-206), 23-260, 23-261, 23-320, 23-330 (or 23-331), and five additional Spanish courses. Native speakers may not take 23-205 or 23-206 and will substitute another course in consultation with a program advisor.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Other requirements:
(a) four more courses from Arts, Languages, Social Sciences, or Science, including German, Russian, Italian, or Spanish;
(b) two more courses from Arts, Languages, Social Sciences, or Science, excluding the area of the language option;
(c) six courses from any area of study, excluding the area of the language option.

## Combined General Modern Languages

Total courses: thirty.
Major requirements: twenty-two courses, including 07-120, 08-160, and ten courses in each of two language areas as outlined above for the General Modern Languages degree.

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Other requirements:
(a) two more courses from any area of study, including Classical and Modern Languages.

## Combined General Modern Languages and Multicultural Studies

Total courses: thirty.
Major requirements: twenty-three courses, including 07-120 and the twelve courses prescribed below for the General Multicultural Studies degree; plus ten courses in one language area as prescribed above for the General Modern Languages degree Courses in the chosen language area may not be used to satisfy the requirements of the Multicultural Studies component.
Option requirements (see 2.4.14 for subjed areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.
Other requirements:
(a) one more course from any aread study, including Classical and Modern Languages.

## Combined General Classics and Modem Languages

Total courses: thirty.
Major requirements: twenty-four courses, in cluding 07-120, 08-160, and ten courses in one language area as prescribed above in the General Modern Languages degree plus the twelve courses prescribed above for the General Classical Civilization degree.
Option requirements (see 2.4.14 for subjed areas):
(a) two courses from Social Sciences,
(b) two courses from Science;
(c) two courses from Arts, Lan guages, Social Sciences, or Sci ence. These need not be selected from the same category.

## Combined Honours Modern Languages

 Total courses: forty.Major requirements: sixteen courses, including 07-120, 08-160, and fourteen courses in one language area as outlined below:

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

German option: 15-210, 15-211, and six additional German language courses; plus two German civilization courses, and two German literature courses; and two further language or literature courses.
Italian option: eight Italian language courses, two Italian civilization courses, and three Italian literature courses; and one further language or literature course. (Majors are strongly urged to take 21-350.)
Spanish option:23-205, 23-206, 23-260, 23261, 23-320, 23-330, 23-331, and seven additional Spanish courses. Native speakers may not take 23-205 or 23-206 and will substitute two other courses in consultation with a program adivisor. Combined four-year Honours programs will normally repeat 23 330 and/or 23-331.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Major requirements-Other Subject: as prescribed by that area of study.
Other requirements:
(a) additional options, if necessary, to a total of forty courses.

## Combined Honours Modern Languages with Two Language Options

Total courses: forty.
Major requirements: thirty-two courses, including $07-120,08-160$, and fifteen courses in each of two language areas as outlined below:

German option: 15-210, 15-211, and six additional German language courses; plus two German civilization courses, and two German literature courses; and three further language or literature courses.
Italian option: eight Italian language courses, two Italian civilization courses, and three Italian literature courses; and two further language or literature courses. (Majors are strongly urged to take 21-350.)

Spanish option:23-205, 23-206, 23-260, 23261, 23-320, 23-330, 23-331, and eight additional Spanish courses. Native speakers may not take 23-205 or 23-206 and will substitute two other courses in consultation with a program advisor. Combined four-year Honours programs will normally repeat 23 330 and/or 23-331.

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

## Other requirements:

(a) two additional courses from any area of study, including Classical And Modern Languages.

## MULTICULTURAL STUDIES

## General Multicultural Studies

Total courses: thirty.
Major requirements: twelve courses, including:
(a) 08-160 and either 08-260 or 08360 ;
(b) six courses in a single area of concentration (i.e., Classical Studies, German language, Russian language, Italian language, Spanish language, or French language), consisting of four courses in the same language and two courses in its civilization (Note: In the case of French, 29-260, 29-270, four language courses above the 29-114 or OAC level are required.);
(c) two additional civilization courses in an area of study other than that chosen in (b);
(d) two more civilization courses in an area of study other than as taken in (b) or (c); or a civilization course from an

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

area other than as taken in (b) or (c) and 08-350/11-350/21-350, "The Classical Tradition."

Civilization courses are listed separately in each area and are numbered in the ranges 160-189, 260-289, and 360-389.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

## Other requirements:

(a) five courses from Arts, Languages, Social Sciences, or Science, including any of the offerings in Classical and Modern Languages, Literatures, and Civilizations ( $06-$ through $23-$ ), with the other of either 08-260 or 08-360 being strongly recommended in addition to the minimum requirement as stated above in "Major requirements," subsection (a);
(b) two more courses from Arts, Languages, Social Sciences, or Science, excluding any of the offerings in Classical and Modern Languages, Literatures, and Civilizations ( 06 - through 23-);
(c) five courses from any area, excluding any of the offerings in Classical and Modern Languages, Literatures, and Civilizations (07through 23-).

Note: Multicultural Studies majors should consult an advisor for a list of suggested options.

## Minor in Multicultural Studies

Required: six courses, of which only two may be at the 100 level (not including 08160). Courses must include: 08-160 and either 08-260 or 08-360, two courses in the same language, and two courses in the civilization of that language.

### 3.3.3 COURSE DESCRIPTIONSABORIGINAL STUDIES

06-100. Introduction to Ojibwe I Introduces the basic elements of Ojibwe language structure. Students will learn to converse at a basic level using present, past, and future tenses. The emphasis is on using language for describing typical activities and experiences. Extensive oral practice is provided. One specific orthography will be taught.

## 06-101. Introduction to Ojibwe II

A continuation of 06-100. (Prerequisite: 06 100 or consent of instructor.)

### 3.3.4 COURSE DESCRIPTIONSINTERCULTURAL STUDIES

## 07-100. Religion and Culture

An introduction to the nature and important functions of religion and religious beliefs in contemporary culture.

## 07-101. Critical Issues in Religion and Western Culture

Critical issue sin religion and religious beliefs in contemporary Westem Culture.
07-103. Religion and the Human Story An examination of key stages and experiences of human life: birth, growth, maturity, work, play, friendship, old age, death, joy, anxiety, and hope. A consideration of the questions they raise, their depth, dimension, and meaning, and their relationship to religious beliefs and practices.

## $07-120$. Universals of Language

An introduction to the study of language, including sounds and sound systems, grammatical terminology, and language families. (Required of all Modern Languages majors, this course should normally be taken as a corequisite to the first language course in the area of option taken at the University.)

## 07-201. Culture and Ideas I

An interdisciplinary introduction to European cultural tradition from Antiquity through the Renaissance, examining representative works of literature, visual art, music, drama, religion, and philosophy. Training in the methodology of different forms of cultural ex-

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

pression and their social and cultural context. Contemporary forms of analysis will equip students for active critical engagement with this and other cultures. Open to students from any area of study in the University.

## 07-202. Culture and Ideas II

An examination of representative literary, religious, and philosophical texts and examples from art, music, and drama that focus on the period from the Scientific Revolution through the Nineteenth Century. Training in methods of interpretation and criticism proper to different disciplines will help the student to understand the interplay between talent, aesthetics, artistic tradition, and social and cultural context. Open to students from any area of study in the University.

## 07-203. Culture and Ideas III

An examination of representative literary, religious, and philosophical texts and examples from art, music, and drama that focus on the period from the turn of the century to the present day. The interplay of talent, aesthetics, and artistic tradition will be viewed in its social and cultural context. Cultural theory and contemporary critical perspectives will equip students for active engagement with the complexity and diversity of twentiethcentury cultures. Open to students from any area of study in the University.

## 07-221. Introduction to Philosophy of Religion

Introduction to some of the issues and debates in religion and culture, such as: traditional religions versus new religions, cults, and the New Age; the dialogue between Christianity and other world religions; challenges to religious belief; the justification of religious beliefs; the problem of evil; religion and science; miracles, immortality, parapsychology.
07-222. Models of Christian Community A study of the lived experience, diverse theological models and actual forms of Christian community: their life, nature, structure, function, and mission; dialogue among vanous church groups, co-operative ventures, response to contemporary issues.

## 07-223. Spirituality in Contemporary Western Culture

An examination of recent directions in understanding authentic ways of life, the visions of reality they contain, and the means to express and sustain them. Focus upon personal growth, interpersonal compassion, and social justice. Works of authors such as Thomas Merton, Matthew Fox, Gustavo Gutierrez, Elizabeth Johnson, Thomas Berry.

## 07-224. Christian Ritual in Western Culture

A study of the personal and social dimensions of word, symbol, and rite, with a focus on their roots in human experience, their historical development, their expression in story, symbolic action, doctrine, and the arts.

## 07-225. Christianity and Contemporary Culture

An examination of major Christian thinkers and movements of the twentieth century.
07-226. God and Human Experience
An exploration of the profound human experiences which have led people to affirm an ultimate Reality or Presence: such as, wonder and awe, joy and anxiety; meaning; evil and death; freedom and conscience; solitude and love; guilt and forgiveness; plurality and unity. Consideration of images and ideas used to interpret such experience and their religious and moral implications.

## 07-227. Christianity: The Modern Age

Resistance, confrontation, adoption, and adaptation by Christianity of new cultural movements, trends, and ideas during the nineteenth and twentieth centuries.

## 07-228. Religious Belief in Contemporary Culture

An examination of contemporary theological and philosophical understandings of the attributes and nature of God.

## 07-230. Christianity: Early Church to the Reformation

The history of Christianity from its origins in Hebrew culture in the first century; its transformation by Greek culture; its persecution within Roman culture; and the cultural dominance of the Holy Roman Empire to the sixteenth century.

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

## 07-231. Christianity: Reformation to the Modern Age

The break-up of Christendom and the founding of new religious denominations during the Protestant Reformation of the sixteenth century; the spread of European culture through colonialism; the impact of new cultural developments in the political, scientific, and economic realms to the nineteenth century.
07-232. Religion in a World of Science An examination of the conflict between the religious beliefs and the rise of modern science (especially cosmology and evolutionary biology), including various attempts to reconcile religion and science.
07-233. Religion and Modern Literature
An examination of ultimate human questions conceming life, death, meaning, value, and God, as expressed in selected short stories, novels, popular literature, and/or poetry.

## 07-235. To Auschwitz and Beyond: Reflections on the Meaning of the Holocaust

An examination of responses to key issues raised by the Holocaust as reflected in postwar culture both in Canada and abroad.

## 07-322. God and Atheism in Western Culture

An examination of claims for belief in God, atheism, and postmodern skepticism, including the nature of religious faith, rational arguments for God's existence, revelation, and religious experience.
07-323. God and Evil in Western Culture An examination of traditional and contemporary attempts to reconcile the world's suffering and anguish with the existence of God. (This course is recommended to be preceded or accompanied by 07-221.)

## 07-326. Major Figures in Modern Religious Thought

An examination of religious themes in the thought of significant nineteenth- and twen-tieth-century authors. (Since content varies from year to year, students may repeat this course for credit, with permission.)

## 07-327. Process Philosophy and Theology

An introduction to Process philosophy and its implications for understanding the reality of God and new interpretations of various theological issues: Christ, death, immortality, freedom, suffering, ethics, etc. (This course is recommended to be preceded or accompanied by 07-221.)

### 3.3.5 COURSE DESCRIPTIONSMULTICULTURAL STUDIES

## 08-160. Foundations of Civilization

A study of the origin and meaning of civiliza. tion, including an examination of the values and achievements of the earliest civilizations of the Mediterranean and the Orient in the context of Canadian multicultural reality and policy.

## 08-260. Perspectives on Multicultural Studies

Guided readings and discussion with a faculty tutor on topics specific to the student's areas of concentration. (Prerequisite: 0 160 or consent of a program advisor in Multicultural Studies.)

## 08-350. The Classical Tradition

A study of the continuity of the Classics through the ages, the evolution of the various genres, and the impact of the Classics upon the modern world in art, literature, and language. (Prerequisites: Two courses in Classical Civilization or consent of a program advisor in Multicultural Studies ) (Also offered as 11-350 and 21-350.)
08-360. Seminar in Multicultural Studies A study of the contributions various cultures have made to today's civilizations and the influences they have exerted upon each other. Topics will include cultural interaction and multiculturalism. (Prerequisites: 08-160 and two other civilization courses, or consent of a program advisor in Multicultural Studies.)

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

### 3.3.6 COURSE DESCRIPTIONSORIENTAL STUDIES

Language: 10-100, 10-101, 10-200, 10-201. Oriental Literature, Culture, and Religion: 10-226, 10-227, 10-317, 10-409.

## 10-100. Japanese for Beginners I

Provides a co-ordinated approach to the basic language skills of listening, speaking. reading, and writing. The elements of the writing system, Hiragana and Katakana, and a limited number of Chinese characters (Kanji ) are progressively introduced. (Laboratory work.) (Only for students with no prior knowledge of Japanese.)

## 10-101. Japanese for Beginners II

Continuation of 10-100. (Prerequisite: $10-$ 100 or equivalent.)
10-200. Intermediate Japanese I
Review and further study of grammar. Emphasis on mastery of new characters (Kanji) and reading of selected texts. (Laboratory work.) (Prerequisite: $10-101$ or equivalent.)

## 10-201. Intermediate Japanese II

Continuation of 10-200. (Prerequisite: $10-$ 200 or equivalent.)

## 10-226. Yoga

An introduction to the theory and practice of India's greatest achievement in the area of physical, mental, and spiritual awareness. Topics include: psychology of Yoga, postures, breathing practices, relaxation techniques, diet, concentration and meditation, Kundalini, and also Bhakti Yoga, and Karma Yoga (ways of devotion and social action.)

## $10-227$. Hinduism and Buddhism

An understanding of the nature and meaning of human existence in terms of the religious perspectives of Hinduism, Buddhism, and related traditions of India (Jainism, Sikhism); their philosophical ideas, ethics, spiritual practices, gods, and goddesses with their myths and meanings. (Audio-visuals, field trips, practicum.)

## 10-317. World Religions: Eastern

A comparative introduction to the doctrines, rituals, and ethics of Hinduism, Buddhism, Taoism, Confucianism, Shinto, Zen Buddhism, and selected tribal religions. (Slides
and field trips.) (Also offered as Political Science 45-260.)

## 10-409. Directed Readings in Oriental Studies

(May be repeated for credit with approval of Classical and Modern Languages.)

### 3.3.7 COURSE DESCRIPTIONSCLASSICAL STUDIES

## CLASSICAL CIVILIZATION

## 11-125. The Romance of Words

A study of the Greek and Latin roots of English vocabulary, families of words, and development of meaning. Attention will also be given to medical, legal and scientific terminology.

## 11-160. Land of the Pharaohs

An introduction to the civilization of ancient Egypt. Topics will include Egyptian tombs and their treasures, hieroglyphic writing, the mystery of the pyramids, mummification, religious beliefs, and famous personalities from the Egyptian past.

## 11-161. Introduction to Greek Civilization

An introduction to the cultural values and achievements of the ancient Greeks. Topics will include geography, history, mythology, and religion, language and literature, art and daily life. (Recommended for prospective Classical Civilization majors.)

## 11-162. Introduction to Roman Civilization

An introduction to the cultural values and achievements of the ancient Romans. Topics will include geography, history, mythology and religion, language and literature, art and daily life. (Recommended for prospective Classical Civilization majors.)

## 11-231. Greek Drama

The origin and development of the Greek theatre. Students will read, analyze, and discuss representative plays of the major dramatists of ancient Greece.

## 11-260. Socrates

The life and times of one of the most fascinating and enigmatic personalities of Western History, studied through the writings of

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

his disciples and his detractors. Students will discuss the modern relevance of issues raised by Socrates' questioning spirit. (Prerequisite: 11-161 or consent of a program advisor.)

## 11-265. Greek Art and Archaeology

A study of the artistic masterpieces and monuments of ancient Greece. Topics will include the search for Troy, the spirit of Greek sculpture, and Athens in the Golden Age. Presented with colour slides. (Prereqvisite: 11-161 or consent of a program advisor.)

## 11-266. Roman Art and Archaeology

A study of the artistic masterpieces and monuments of ancient Rome. Topics will include the tombs of the Etruscans, the treasures of Pompeii and Rome in the days of the Caesars. Presented with colour slides. (Prerequisite: 11-162 or consent of a program advisor.)

## 11-350. The Classical Tradition

A study of the continuity of the Classics through the ages, the evolution of the various genres, and the impact of the Classics upon the modern world in art, literature, and language. (Prerequisites: Two courses in Classical Civilization or consent of a program advisor.) (Also offered as 08-350 and 21-350.)

## 11-351. Myth and Literature

The use and development of myth from ancient to contemporary literature. Thematic treatment of several key figures selected from the following: Orpheus, Prometheus, Ulysses, Oedipus, Electra. (Prerequisite: Two courses in Classical Civilization or consent of a program advisor.)

## 11-370. Greek Mythology

The myths and legends of ancient Greece, with particular attention to the heroic, tragic, and erotic elements. Modem theories about the nature and function of myths are employed in analyzing the Greektales. (Prerequisite: 11-161 or consent of a program advisor.)

## 11-371. Religion in the Ancient World

An introduction to the religions of ancient Greece, Rome, and the Mediteranean world, including early Christianity. (Prereq-
uisite: 11-161 or consent of a program advisor.)

## 11-460. Directed Readings in Classical Civilization

Designed for the advanced student who wishes to explore a special area of interest with the aid of a faculty advisor. (May be repeated for credit if content changes.) (Hours by arrangement.)

## GREEK AND ROMAN HISTORY

## 12-261. History of Ancient Greece

The formation of the polis and its culture to the end of the Hellenic period. (Also offered as History 43-281.) (Prerequisite: 11-161 or an introductory History course.)

## 12-262. Hellenistic Greece

The post-classical period, the decline of the polis, the rise of Macedon and Alexander the Great, the age of the Diadochoi. (Prerequisite: 11-161 or an introductory History course.)

## 12-281. Roman History of the Republican Period I

A study of Roman civilization from its early foundations to the destruction of Carthage in 146 B.C. The social and political problems of the Romans will be examined in comparison with those of modern times. (Also offered as History 43-283.) (Prerequisite: 11-162 or an introductory History course or consent of a program advisor.)

## 12-282. Roman History of the Republican Period II

A study of Roman history and institutions from the destruction of Carthage to the death of Caesar and the collapse of the Republic. (Prerequisite: 11-162 or an introductory History course or consent of a program advisor.) (Also offered as History 43-284.)

## 12-285. Roman History of the Imperial

 Period IAn exploration of the personalities of the first twelve emperors and the social, political and economic situation of the Roman Empire during their reigns. (Prerequisite: 11 162 or an introductory History course or consent of a program advisor.) (Also offered as History 43-285.)

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

## 12-286. Roman History of the Imperial Period II

An exploration of the social, political, economic, and religious aspects of the Roman Empire from the reign of Trajan to that of Constantine the Great. (Prerequisite: 11162 or an introductory History course or consent of a program advisor.) (Also offered as History 43-286.)

## GREEK LANGUAGE AND LITERATURE

13-100. Introduction to Ancient Greek I
Designed to equip the beginner with the basic skills needed for reading ancient Greek literature, including the New Testament.
13-101. Introduction to Ancient Greek II Designed to equip the beginner with the basic skills needed for reading ancient Greek literature, including the New Testament. (Prerequisite: 13-100.)

## 13-200. Intermediate Greek I

Review of vocabulary and grammar. Readings from classical prose, poetry, or the New Testament. (Prerequisite: 13-101.)
13-201. Intermediate Greek II Continuation of 13-200. (Prerequisite: 13200.)

## 13-450. Directed Readings in Greek Literature

Designed for the student who wishes to explore a special area of interest with the aid of a faculty advisor. (May be repeated for credit if content changes.) (Hours by arrangement.)

## LATIN LANGUAGE AND LITERATURE

## 14-100. Introductory Latin I

Designed for the student with little or no background in Latin. Emphasis on attainment of reading skills prerequisite for Latin courses numbered 200-and above, and for practical use in theology, philosophy, medieval studies, linguistics, and comparative literature.

## 14-101. Introductory Latin II

Continuation of 14-100. (Prerequisite: 14 100 or consent of an advisor in Classics.)

## 14-200. Intermediate Latin I

Designed for students who have previously studied Latin at school or have completed Latin 14-101. Review of forms, syntax, and grammar. Selected passages from the works of Latin authors may be read.

## 14-201. Intermediate Latin II

Review of forms, syntax, and grammar. Selected passages from the works of Latin authors. (Prerequisite: 14-200 or consent of an advisor in Classics.)

## 14-230. Introduction to Literature

A general introduction for foreign language students to forms and structures of literary language including a study of genres, styles, and rhetorical figures. Readings will be in English and in Latin. (Also offered as $15-$ 230, 17-230, and 21-230.) (Prerequisite: 14201 or OAC Latin or consent of a program advisor.)

## 14-233. Medieval Latin

An exploration of the poetical, spiritual, philosophical, and historical writings of the Middle Ages. (This course is exempt from the normal prerequisites and may be taken by anyone who has completed Grade 12 Latin, or equivalent.)

## 14-450. Directed Readings in Latin Literature

Designed for the advanced student who wishes to explore a special area of interest with the aid of a faculty advisor. (May be repeated for credit if content changes.)

### 3.3.8 COURSE DESCRIPTIONSGERMAN LANGUAGE OPTION

Requirements for degree programs in German make reference to the following groups of courses:
German Language: 15-100, 15-101, 15200, 15-210, 15-211, 15-220, 15-221, 15-$300,15-301,15-310,15-311,15-312$, 15-329. (Laboratory work may be required in language courses.)
German Literature: 07-235, 15-230, 15-234, 15-336, 15-337, 15-338, and 15-490. (Certain literature courses may be taken twice for credit, provided that the subject matter differs. 15-211 or consent of a program advisor

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

are prerequisite for 300 - and 400 -level literature courses. Unless otherwise noted in the Calendar or course outline, all literature courses at the 300 or 400 level will be taught in German.)
German Civilization: 15-260, 15-261, 15262, 15-360.

## 15-100. German for Beginners I

Basic skills of listening, speaking, reading, and writing. (Only for students with no prior knowledge of German.)
15-101. German for Beginners II
A continuation of 15-100. Basic skills of listening, speaking, reading, and writing. (Prerequisite: $15-100$ or consent of a program advisor.)
15-200. Intermediate German I
Review and further development of basic skills. (Prerequisite: 15-101 or equivalent.)

## 15-210. German Conversation

A course to develop oral and aural skills. (Prerequisite: 15-200 or consent of a program advisor.)
15-211. An Introduction to German Texts A course to develop reading and writing skills. (Prerequisite: 15-200 or consent of a program advisor.)

## 15-220. Intermediate German III

Continued development of written and spoken German. (Prerequisite: $15-200$, or OAC German, or equivalent.)

## 15-221. Intermediate German IV

Continuation of 15-220. (Prerequisite: 15220 , or consent of a program advisor.)

## 15-230. Introduction to Literature

A general introduction for foreign language students to forms and structures of literary language including a study of genres, styles, and rhetorical figures. Readings will be in English and in German. (Also offered as 14 230, 17-230, and 21-230.) (Prerequisite: 15200, or OAC German, or consent of a program advisor.)

## 15-234. Great Works of German Literature

A study of selected outstanding works representative of a single theme or a single grnre (drama, novella, novel). Topics may vary from year to year. (Taught in English. No
prerequisite.) (May be repeated for credit if content changes.)

## 15-260. German Culture and Civilization I

An interdisciplinary introduction to political, social, and cultural developments in Germanic nations from ancient times to 1500 . (Taught in English. No prerequisite.)

## 15-261. German Culture and Civilization II

An interdisciplinary introduction to political, social, and cultural developments in Ger-man-speaking countries from 1500-1880. (Taught in English. No prerequisite.)

## 15-262. German Culture and Civilization III

An interdisciplinary introduction to political, social, and cultural developments in Ger-man-speaking countries from 1880 to the present. (Taught in English. No prereq. uisite.)

## 15-300. Advanced German I

Further study of grammar and syntax. (Prerequisite: $15-221$ or equivalent.)
15-301. Advanced German II
Continuation of 15-300. (Prerequisite: 15 300 , or consent of a program advisor.)
15-310. German for Business Purposes
(Prerequisite: 15-221 or consent of a program advisor.)

## 15-311. Translation for Business Purposes

(Prerequisite: 15-221 or consent of a program advisor.)
15-312. History and Development of the Germanic Languages
(Taught in English.)

## 15-329. Special Topics in German Language

(May be repeated for credit if content changes.)
15-336. Themes in German Thought and Culture I
The individual and society as reflected in lit. erary and non-literary texts and other media. (Prerequisite: 15-234, or consent of instruo. tor.)

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

## 15-337. Themes in German Thought and Culture II

Visions of the nation in the German-speaking world as reflected in literary and non-literary texts and other media. (Prerequisite: 15-234, or consent of instructor.)

## 15-338. Themes in German Thought and Culture III

The impact of globalization as reflected in literary and non-literary texts and other media. (Prerequisite: 15-234, or consent of instructor.)

## 15-360. The Reformation

An examination of the religious reformations and counter-reformation of the sixteenth century.

## 15-490. Directed Readings in Germanic Studies

(Prerequisite: 15-211 or consent of a program advisor.)

### 3.3.9 COURSE DESCRIPTIONSRUSSIAN

Requirements for the minor in Russian make reference to the following groups of courses:
Russian Language: 17-100, 17-101, 17200, 17-201, 17-225.

Russian Literature: 17-235.
Russian Literature Taught in English: $17-$ 230, 17-231, 17-232, 17-332, 17-333, 17345, 17-350. (Certain literature courses may be taken twice for credit, provided that the subject matter differs.)
Slavic Civilization: 17-260, 17-261, 17-265, 17-266.
17-100. Russian for Beginners I
Basic language skills of listening, speaking, reading and writing. (Laboratory work.) (Only for students with no prior knowledge of Russian.)

## 17-101. Russian for Beginners II

 Grammar review; reading of selected texts; conversation. (Laboratory work.) (Prerequisite: 17-100.)
## 17-200. Intermediate Russian I

A review of the morphology and phonetics of Russian. Composition, conversation and
selected readings. (Laboratory work.) (Prerequisite: 17-101.)

## 17-201. Intermediate Russian II

Reading of literary selections and non-fiction. Conversation based on readings and topics of current interest. (Laboratory work.) (Prerequisite: 17-200.)

## 17-225. Special Topics in Russian Language

An analysis of phonological and morphological structures; word-building, accentology, stylistics. Since content varies from year to year, students may repeat this course for credit with permission.) (Prerequisite: 17201 or consent of a program advisor.)

## 17-230. Introduction to Literature

A general introduction for foreign language students to forms and structures of literary language including a study of genres, styles and rhetorical figures. Readings will be in English and in Russian. (Also offered as 14 230, 15-230, 21-230.) (Prerequisite: 17-201 or OAC Russian or consent of a program advisor.)

## 17-231. Masterpieces of Russian Literature I

A study of works from Pushkin to Chekhov: reading, lectures and discussions of representative works (short stories and a play) by Pushkin, Gogol, Turgenev, Dostoevsky, Tolstoy, and Chekhov. This course is intended for students not majoring in Russian who wish to take a single course orientation in the field of nineteenth-century Russian literature. (Taught in English.)

## 17-232. Masterpieces of Russian Literature II

A study of representative works from 1917 to the present. Selections will be made from the works of Babel, Bulgakov, Nabokov, Pasternak and Solzhenitsyn. This course is intended for students not majoring in Russian who wish to take a single course orientation in the field of twentieth-century Russian literature, (Taught in English.)
17-235. Masterpieces of Russian Drama A study of Russian dramatic works by Fonvizin, Pushkin, Gogol, Turgenev, Ostrovsky and L. Tolstoy or by Chekov, Gorky, Bulgakov, Aleshin and Mayakovsky.

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

## 17-260. Studies in South Slavic Civilization and Culture

The evolution of South Slavic cultural identities; pagan and Christian traditions; South Slavic folk heritage; Bulgarian, Croatian and Serbian contributions to the world of art and architecture, literature, music and science. Reflections of South Slavic culture in North America. (Taught in English.)

## 17-261. Studies in West Slavic Civilization and Culture

The evolution of West Slavic cultural identities; the heritage of Christianity; folkloric traditions; Polish, Czech and Slovak contributions to the world of art and architecture, literature, music and science. Reflections of Czech, Polish and Slovak culture in North America. (Taught in English.)

## 17-265. Foundations of Russian Civilization

An introduction to the civilization of pre-revolutionary Russia: cultural values, geopolitics, history, religion, art and literature. (Taught in English.)

## 17-266. Modern Russian Civilization

Introduction to twentieth-century Russian civilization: the coming of the Revolution and its aftermath; new social structures; the restoration of democratic tendencies under Gorbachev and Yeltsin. (Taught in English.)

## 17-332. The Russian Novel of the Nineteenth Century

A study of some major Russian novels by Pushkin, Gogol, Turgenev, Dostoevsky, and L. Tolstoy. (Taught in English.)

## 17-333. The Russian Novel of the Twentieth Century

The study of the contemporary Russian novel including works by the Nobel Prize winners Bunin, Sholokhov, Pasternak, and Solzhenitsyn. (Taught in English.)

## 17-345. Special Topics in Russian Literature

An examination of specific figures, authors and themes in Russian literature. Since the content varies from year to year, students may repeat this course for credit with permission. (Prerequisite: two courses in any literature at the 200 level or above, or consent of a program advisor.) (Taught in English.)

## 17-350. Contemporary Russian Literature

A survey of the principal Russian prose and poetry writers of the period. (Taught in English.)

### 3.3.10 COURSE DESCRIPTIONSITALIAN LANGUAGE OPTION

Requirements for degree programs in Italian make reference to the following groups of courses:

Italian Language: 21-100, 21-101, 21-200, 21-220, 21-221, 21-225, 21-300, 21-301, 21-310, 21-311, 21-410, 21-411, 21-415. (Laboratory work may be required in language courses.)
Italian Literature: 21-230, 21-231, 21-331, 21-348, 21-350, 21-352, 21-355, 21-356,
21-450, 21-490. (Certain literature courses may be taken twice for credit, provided that the subject matter differs. Either 21-220 or consent of a program advisor is a prerequisite for 300 - and 400 -level literature courses taught in Italian.)
Italian Civilization: 21-260, 21-261.

## 21-100. Italian for Beginners I

Basic language skills of listening, speaking, reading, and writing. (Only for students with no prior knowledge of Italian.)

## 21-101. Italian for Beginners II

Continuation of 21-100. (Prerequisite: 21 100 or consent of a program advisor.)

## 21-200. Intermediate Italian I

Review of grammar and further development of basic language skills. Written work, conversation, and readings. (Prerequisite: 21-101 or equivalent.)

## 21-220. Intermediate Italian III

Continued development of written and spoken Italian. Grammar review and readings. (Prerequisite: 21-200, or OAC Italian, or equivalent, or consent of a program advisor.)

## 21-221. Intermediate Italian IV

Continuation of 21-220. (Prerequisite: 21 220 or equivalent.)
21-225. Italian Conversation
(Prerequisite: 21-200.)

21-230. Introduction to Literature
A general introduction for foreign language students to forms and structures of literary language including a study of genres, styles and rhetorical figures. Readings will be in English and in Italian. (Also offered as 14230, 15-230, and 17-230.) (Prerequisite: OAC Italian, 21-200, or consent of a program advisor.)
21-231. Introduction to Italian Literature A survey of major literary and intellectual movements, with readings of some representative literary works in Italian. Various aspects of genre, style, rhetorical devices and metrics will also be studied. (Prerequisite: 21-200 or equivalent.)
21-260. Italian Culture and Civilization I The cultural traditions of Italy from early times to the end of the Middle Ages. (Taught in English.) (Italian majors will be expected to do assigned work in Italian.)
21-261. Italian Culture and Civilization II The cultural traditions of Italy from the Renaissance to modern times. (Taught in English.) (Italian majors will be expected to do assigned work in Italian.)

## 21-300. Advanced Italian I

Further study of phonology, morphology, and syntax. (Prerequisite: 21-221 or equivalent.)

## 21-301. Advanced Italian II

Continuation of 21-300. (Prerequisite: 21 300 or equivalent.)

## 21-310. Italian Translation

(Prerequisite or co-requisite: 21-300.)

## 21-311. From the Text to the Rule

The reading and analysis of representative texts chosen from a variety of sources (literature, joumalism, advertising, etc.). (Prerequisite: 21-221 or consent of a program advisor.)

## 21-331. Literature and Thought of the Twentieth Century

Readings from Verga, Pirandello, Svevo, D'Annunzio, Moravia, Pratolini, Pavese, Calvino, and selections from modern poetry. Focus of the course may vary. (May be repeated for credit once if content changes.)

## 21-348. Literature and Thought of the Seventeenth and Eighteenth Centuries

From the baroque cuit of the form and the birth of modern science, to the rediscovery of the classical balance of content and form (or from Marino to Parini, and from Galileo to Vico). Focus of the course may vary. (May be repeated for credit once if content changes.)

## 21-350. The Classical Tradition

A study of the continuity of the Classics through the ages, the evolution of the various genres, and the impact of the Classics upon the modern world in art, literature, and language. (Prerequisites: Two courses in Italian Literature or consent of a program advisor.) (Also offered as 08-350 and 11-350.)

## 21-352. Nineteenth-Century Literature

Neo-classicism and romanticism. Selected readings from Manzoni, Leopardi, Carducci, Pascoli, D'Annunzio.

## 21-355. The Renaissance

Topics may include Castiglione, II cortegiano; Machiavelli, II principe; epic theatre; or lyric poetry. Students may repeat this course for credit with permission.

## 21-356. Renaissance Thought

A study of selected works. Topics may vary from year to year. (Taught in English.)

## 21-410. History of the Italian Language I

(Prerequisite: 21-300 or 21-301.)
21-411. History of the Italian Language II
Continuation of 21-410. (Prerequisite: 21 410 or equivalent.)

## 21-415. Advanced Translation

English to Italian and Italian to English. (Prerequisite: 21-310 or consent of a program advisor.)
21-450. Literature of the Middle Ages
The dolce stil novo poets; Dante Alighieri, Vita Nuova, Convivio, Divina Commedia; F. Petrarca, Canzoniere; G. Boccaccio, Decaneron. Selected redings to illustrate the transition from a God-centred world to a hu-man-centred world and the birth of Renaissance humanism. May be offered in English if indicated in the course outline. Focus of

### 3.3 Classical and Modern Languages, Literatures, and Civilizations

the course may vary. (May be repeated for credit once if content changes.)

## 21-490. Directed Readings

Designed for the advanced student who wishes to explore a special area of interest in Italian literature. (May be repeated for credit if content changes.)

### 3.3.11 COURSE DESCRIPTIONSSPANISH LANGUAGE OPTION

Requirements for degree programs in Spanish make reference to the following groups of courses:
Spanish Language: 23-100, 23-101, 23200, 23-205, 23-206, 23-220, 23-221, 23300, 23-301, 23-310, 23-311, 23-320, 23-330, 23-331, 23-450. (Laboratory work may be required in language courses.)
Spanish Literature: 23-235.
Spanish Culture and Civilization: 23-260, 23-261.

## 23-100. Spanish for Beginners I

Basic language skills of listening, speaking, reading, and writing. (Only for students with no prior knowledge of Spanish.)

## 23-101. Spanish for Beginners II

Basic skills of listening, speaking, reading, and writing. (Prerequisite: 23-100 or equivalent.)

## 23-200. Intermediate Spanish I

Review and further study of grammar. Written work, conversation, readings. (Prerequisite: 23-101 or equivalent.)

## 23-205. Reading I

Discussion in Spanish based on graded readings focussing on vocabulary and language techniques. Review of phonetics and grammar. (Not open to native speakers, who should consult a program advisor regarding an alternate course.) (Prerequisite: 23-200 or equivalent.)

## 23-206. Reading II

Discussion and writing in Spanish based on graded readings focussing on vocabulary and language techniques. Review of phonetics and grammar. (Not open to native speakers, who should consult a program ad-
visor regarding an altemate course.) (Pre. requisite: $23-200$ or equivalent.)

## 23-220. Intermediate Spanish III

Continued development of written and spoken Spanish. Grammar review. (Prereq. uisite: $23-205,23-206$, or equivalent.)

## 23-221. Intermediate Spanish IV

Continuation of 23-220. (Prerequisite: 23 . 220 or equivalent.)
23-235. Hispanic Literature in Translation
Topics may vary from year to year. (May not count toward a Spanish major.) (Taught in English.)
23-260. Culture and Civilization of Spain
Readings and discussion, in English, of topics from the history and culture of Spain.

## 23-261. Culture and Civilization of Spanish America

Readings and discussion, in English, of topics from the history and culture of Spanist America.

## 23-300. Advanced Spanish I

Further study of grammar and syntax. Wilten and oral exercises emphasizing suble and/or particularly difficult grammar points (Prerequisite: 23-221 or equivalent.)

## 23-301. Advanced Spanish II

Continuation of $23-300$. (Prerequisite: 23 221 or equivalent.)

## 23-310. Spanish Translation I

Training in translation from Spanish to English and English to Spanish. (Prerequisite 23-221 or equivalent.)

## 23-311. Spanish Translation II

Continued training in translation from Spanish to English and English to Spanish. (Prerequisite: 23-221 or equivalent.)

## 23-320. Written Expression

Study of prose models, such as letters and essays, and practice in writing Spanish. (Prerequisite: 23-205 or 23-206, or equivalent.)
23-330. Literary Readings from Spain
Study of texts from Spain as a means to improve language mastery and gain knowtedge and understanding of the culture through its literature. (May be repeated for
credit if content changes.) (Prerequisite: 23 205 or 23-206, or equivalent.)

## 23-331. Literary Readings from Spanish America

Study of texts from Spanish America as a means to improve language mastery and gain knowledge and understanding of the cultures through their literatures. (May be repeated for credit if content changes.) (Prerequisite: 23-205 or 23-206, or equivalent.)
23-450. Directed Study
(May be taken more than once if content changes.) (Prerequiste will vary depending on the focus of the course.)

### 3.4 Communication Studies

(Ext. 2896)
OFFICERS OF INSTRUCTION

## Professors Emeriti

Cunningham, Stanley B.; B.A. (Manitoba), M.S.L. (Pontif. Inst. of Mediaeval Studies), M.A., Ph.D. (Toronto)-1961.

Romanow, Walter I.; B.A. (Saskatchewan), M.A. (Windsor), Ph.D. (Wayne State) 1965.

Selby, Stuart A.; B.A. (Hamilton College, N.Y.), M.A., Ed.D. (Columbia)-1970.

Edmunds, Hugh H.; B.A. (Saskatchewan), M.Ed. (Wayne State)-1971.

Cuthbert, Marlene L.; B.A. (Queen's), M.A. (Columbia), Ph.D. (Syracuse), Dip. Communication Policy and Planning for Development (The Hague)-1986.

## Professors

Winter, James P.; B.J., M.J. (Carleton), Ph.D. (Syracuse)-1981.
Babe, Robert E.; B.A., M.A. (Western Ontario), Ph.D. (Michigan State)-1999.

## Associate Professors

Gold, Mary; B.A., M.A. (Windsor), M.A. (Wayne State), J.D. (Detroit)-1967.
Goldman, Irvin; B.A. (Winnipeg), M.S. (Purdue), Ph.D. (Iowa)-1981.
Lewis, Richard F.; B.A. (Loyola College), M.S., M.S., Ph.D. (Syracuse)-1983.

Hildebrandt, Kai; M.A. (Hamburg), M.A., Ph.D. (Michigan)-1985. (Associate Executive Dean, Faculty of Arts and Social Sciences)

## Assistant Professors

Ruggles, Myles A.; M.A., Ph.D. (Simon Fraser)-1994.
Virdi, Jyotika; B.A. (St. Stephen), M.A. Social Work (Delhi), M.A. (Comell), Ph.D. (Ore-gon)-1998.
Machiorlatti, Jennifer A.; B.A., M.A. (Michigan State), Ph.D. (Wayne State)-1999.

### 3.4 Communication Studies

Scatamburlo-D'Annibale, V.; B.A., M.A. (Windsor), Ph.D. (York)-2000.
Schwab, Timothy V.; B.S. (Montana State), M.F.A. (Concordia)-2000.

### 3.4.1 PROGRAMS OF STUDY

Communication Studies is devoted to the study, analysis, and understanding of the role of communication in contemporary culture.
A minor, as well as general, Honours, and combined Honours degrees are available.
Requirements for degree programs in Communication Studies make reference to the following groups of courses:
Basic: 40-100, 40-101.
Group I: 40-202, 40-225, 40-275.
Group II: 40-200, 40-245, 40-257, 40-274.
Group III: 40-234, 40-243, 40-272.
Research Methods: 40-234, 40-333, $40-$ 335, 40-337, 40-434, 40-435, 40-453.
Design and Applications Stream: 40-110, 40-205, 40-211, 40-212, 40-214, 40-216, 40-217, 40-222, 40-226, 40-250, 40-251, 40-252, 40-311, 40-315, 40-316, 40-380, 40-381, 40-411, 40-417, 40-489.
Policy and Systems Stream: 40-200, $40-$ 245, 40-257, 40-274, 40-280, 40-352, 40-$361,40-367,40-385,40-452,40-457$. 40-461, 40-474, 40-487.
Culture and Theory Stream: 40-202, 40225, 40-240, 40-241, 40-243, 40-262, 40272, 40-275, 40-302, 40-321, 40-330, 40-344, 40-360, 40-370, 40-402, 40-426, 40-427, 40-430, 40-441, 40-442, 40-443, 40-475, 40-476, 40-486, 40-488.
Practica: 40-398, 40-399, 40-498, 40-499.

## Minor in Communication Studies

Required: six Communication Studies courses, consisting of 40-100, 40-101, two courses from Groups I, II, and III, and two additional courses.

## General Communication Studies

Total courses: thirty.
Major requirements: ten courses, including 40-100 and 40-101; plus one course from
each of Groups I, II, and III; and two Design and Application courses; and one Policy and Systems course; and two Culture and Theory courses. (Note: Courses in Groups I, II, and III are prerequisites for upper-level courses. A course may count in a Group or a Stream, but not in both.)
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements:
(a) six courses from any area of study, including Communication Studies;
(b) six courses from any area of study, excluding Communication Studies.

Regarding Communication Studies courses, the following overall program limits apply: not more than five courses may be from any one of the Design and Applications, Policy and Systems, or Culture and Theory streams; and not more than four may be from Research Methods.

## Honours Communication Studies

## Total courses: forty.

Major requirements: twenty courses, including 40-100, 40-101; plus one course from each of Groups I, II, and III; and two additional courses from any of Groups I, II and III; plus two courses from each of Design and Applications, Policy and Systems, and Culture and Theory; and one Research Methods course. At least five Communication Studies courses must be at the 400 level. (Note: A course may count in a Group or a Stream, but not in both.)
Other requirements (see 2.4.14 for subject areas):
(a) four 100-level courses from Social Sciences, excluding Communication Studies;
(b) two courses from Arts or Languages;

### 3.4 Communication Studies

(c) two courses from Science;
(d) two courses at the 200 level or above from Social Sciences, excluding Communication Studies;
(e) four courses from Arts, Languages, Social Sciences, or Science, including Communication Studies;
(f) two more courses from Arts, Languages, Social Sciences, or Science, exduding Communication Studies;
(g) four courses from any area of study, excluding Communication Studies.

Regarding Communication Studies courses, the following overall program limits apply: not more than ten courses may be from any one of the Design and Applications, Policy and Systems, or Culture and Theory streams; not more than four may be from Research Methods; and up to four courses from the Practica group.

## Combined Honours Programs

Total courses: forty.
Major requirements-Communication Studies: sixteen courses, including 40-100, 40101, and any four courses from Groups I, II, and III; plus at least two (and up to six) in each of the Design and Applications, Policy and Systems, and Culture and Theory streams. (Note: Courses in Groups I, II, and III are prerequisites for several Policy and Systems, and Culture and Theory courses.) At least three Communication Studies courses must be at the 400 level. Students also must include at least one Research Methods course or the equivalent from other academic areas. (Note: A course may count in a Group or a Stream, but not in both.)
Major requirements-Other subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements: additional options (if required) to a total of forty courses.

### 3.4.2 COURSE DESCRIPTIONS

Communication Studies 40-100 and 40-101 are required of all majors and are to be taken in the first year in either order. For non-majors, these courses are recommended prior to taking even those upper-level Communications Studies courses for which no specific prerequisites are listed. These introductory studies of the media and their operations, within a rich context of history, theory, and cultural policy, are designed to enhance media literacy.
Students may register in upper-level courses if specific prerequisites are met, or with consent of the instructor or program advisor.
Not all courses listed will necessarily be offered each year. All courses are three hours per week ( 3.00 credit hours) unless otherwise indicated.

## 40-100. Introduction to Communication and Media

An initial study of the evolution of mass media (print, film, broadcasting, and telecommunications) and how they shaped themselves as major agents in our society. This growth will be examined within the context of communication theory, and with an eye to the political, economic, and cultural relationships between media and the state.

## 40-101. Introduction to Communication and Society

An introduction to the social and cultural significance of information technology, production operations, and assorted communication forms. This course will also focus upon: media content and formats (e.g., the nature of news); the interaction between the media and society; audience effects; constraints upon the media; and related issues of communication freedom.

## 40-110. Production Planning and Design

Practical study of how ideas are created, developed, expressed, proposed and acted upon in various media. Through lectures,

### 3.4 Communication Studies

laboratory activities, and class assignments students will gain skill and knowledge in the techniques of outlines, treatments, storyboards, shooting scripts, proposals, budgets, and resource management. Required course for students pursuing upper-level courses in the Design and Applications stream. (Restricted to first-year students in Communication Studies or combined fouryear Honours programs.) (2 lecture, 2 laboratory hours a week.)

## 40-200. Introduction to Communications History

An exploration of transportation and communication technologies and infrastructure, and the development of the technological mindset, from the onset of the Industrial Revolution. From the Luddites to the World Wide Web, a critical view of how technologies have structured society, in the tradition of Harold Adams Innis. (Prerequisites: sec-ond-year standing and 40-100 and 40-101, or two 100 -level History courses.)
40-202. Introduction to Cultural Studies An introduction to contemporary theories and methods of cultural studies which focuses on the study of society's communicative practices, artistic productions, beliefs, and institutions. This approach incorporates a variety of theoretical and methodological perspectives, including semiotics, social constructionism, structuralism, neo-Marxism, psychoanalysis, postmodernism, ritual analysis, and ethnography. Particular attention is paid to the ways in which race, class, and gender are constituted in a variety of cultural texts. (Prerequisite: second year standing.) (Recommended: 40-100 and 40-101.)
40-205. Photography
An introduction to the use of the still photographic image in today's society. An examination of the use of the image from the beginning of photography to current commercial and artistic applications using silver and electronic printing systems. The laboratory program involves the exploration of the black-and-white print. (Students must provide their own cameras.) (Prerequisite: 40 100 or 40-101.) (2 lecture, 2 laboratory hours a week.)

## 40-211. The Film Making Process I

Theoretical and practical examination of the technical, communicative and aesthetic considerations in black-and-white 16 mm film making. Topics include optics and exposure, cinematography, picture editing, and double-system, non-synchronous sound recording, and editing. (Credit for this course will be allocated only after successful completion of 40-212.) (Prerequisites: 40-100, 40-101, and 40-110.) (2 lecture, 2 laboratory hours a week.)

## 40-212. The Film Making Process II

A continuation of $40-211$ with increased emphasis on practical exercises and examination of aesthetic and communicative factors. Included will be a study of the basic approaches to film (film as entertainment, ant, economic commodity, etc.) and of their implications for the film making process. (Credit for this course will be allocated only after successful completion of 40-211.) (Prerequisite: 40-211.) (2 lecture, 2 laboratory hours a week.)

## 40-214. Sound in Media

The course deals with three major topic areas: writing for the ear, voice improvement, and sound production technology. Students will write and deliver short messages, leam how to operate radio equipment, and produce audio messages. Other topics covered include audiovisual synchronization, MIDI, the digitizing process, and copyrights. (Prerequisites: 40-101 and 40-110.) (2 lecture, 2 laboratory hours a week.)

## 40-216. Video Production I

This project-based course, integrating theory and practice, introduces students to studio and location work with emphasis on the knowledge and skill essential to produce a program. A variety of production techniques are presented appropriate for fiction, nonfiction, education, and training programs. (Credit for this course will be allocated only after successful completion of 40-217.) (Prerequisites: 40-100, 40-101, and 40-110.) (2 lecture, 4 laboratory hours a week.)

## 40-217. Video Production II

Post-production editing and the creative integration of sound and image are explored. Emphasis is on the con-

### 3.4 Communication Studies

straints imposed and the enhancements made possible by technology and the consequences for the effectiveness of the program. (Credit for this course will be allocated only after successful completion of 40-216.) (Prerequisite: 40-216.) (2 lecture, 4 laboratory hours a week.)
40-222. Organizational Communication
An introduction to selected areas in organizational communication, including such topics as interpersonal communication, nonverbal communication, small group communication, schools of organizational communication, coorientation, decision making, and organizational culture.

## 40-225. Media Literacy

An introduction to important concepts concerning news media and popular culture. The intent is to help students to develop the skills, knowledge, and background necessary to interpret the ways in which the media actively construct reality. Sample concepts may include: legitimation, hegemony, objectivity, stereotyping, and altematives.

## 40-226. Instructional Communication

A critical survey of instructional communication in mass education and training. The development of audio-visual education, instructional and interactive systems, educational networks, and distance education programs are studied in a social context.

## 40-234. Introduction to Research Methods in Communication Studies

An introductory overview of research approaches, methods, and designs in communication studies. Students will learn about the theoretical grounding of quantitative, qualitative, and interpretive methods, and practise various methods to explore communication issues. (Prerequisite: 40-100 or 40-101.)

## 40-240. The Growth of the Cinema

The course charts the early history of the cinema from its inception to World War II: film shorts at the turn of the century, the silent film era, the introduction of sound, and the decline of the studio system. Films are examined as technical, industrial, commercial,
artistic, and, most importantly, as historical artifacts. Industry, audience, and the development of cinematic language are viewed within an international framework and their local cultural context.
40-241. The Development of the Cinema The course examines films from the postWar period to the present: the heyday of the classical Hollywood narrative and challenges to its dominance from European neorealism and the avante-garde film movement are considered. Films are viewed as influenced by and reflective of social upheaval of the sixties, as well as their consolidation within distinct but mutually influencing categories of mainstream and alternative cinema. An important consideration is how films can either paper over or expose social fractures along the lines of gender, race, sexuality, and nationalism.

## 40-243. Media Aesthetics

The course provides a basic set of principles and tools to understand the formal qualities of visual signification. Students learn aesthetic and technical terms, rules, conventions, and social assumptions used to construct meaning through sound, images, or graphics in stills, film, and television. It offers a grounding useful for both the producers and consumers of still and moving images. (Prerequisite: 40-101 or 40-110.)

## $40-245$. Planning and Control in Canadian Telecommunications

An examination of formal and informal policy frameworks as they affect planning for broadcasting and other electronic media content. Special emphasis will be given to the roles of Canadian regulatory agencies. (Prerequisite: 40-100 or 40-101.)

## 40-250. Basic Processes in Media Writing

The practice of fundamental journalism writing skills for print and broadcast media, and an introduction to the journalist's basic infor-mation-gathering techniques. Students will use microcomputers in this course, though previous ty ping experience is not necessary. (Prerequisite: 40-100 or 40-101.) (1 lecture hour, 2 laboratory hours a week.)

## 40-251. Intermediate Print and Scripting Processes

The more advanced practice of journalistic research methods, organization of material, and the preparation of copy or scripts for the print or broadcast media. (Prerequisite: 40250.) (1 lecture hour, 2 laboratory hours a week.)

## 40-252. Print Communication

An introduction to the preparation of informational publications such as newsletters, brochures, and reports using desktop publishing techniques. The topics covered include the rhetoric of visual design, a critical analysis of design elements used to direct and influence readers, ethical concerns in print communication, changes in print communication. Students will practise writing, designing, and laying out text and graphic material. (Prerequisites: 40-101 and 40110.) (2 lecture, 2 laboratory hours a week.)

## 40-257. Foundations of Communication Policy and Systems

Canadian communication systems in international context. Communication and the public interest; political economy of mass media; frameworks and models for media and telecommunications policy and regulation; international trade and national culture; patterns of media ownership; audiences and marketing systems; the policy process; policy research methods. (Prerequisite: 40100.)

40-262. Intercultural Communication
Intercultural theory is combined with an interpretive approach that emphasizes experiential understanding of communication and a critical approach that underscores the importance of power and historical context for understanding intercultural communication. Special attention is paid to influences such as race, ethnicity, language, non-verbal codes, class, gender, sexual orientation, and religion.

## 40-272. Theory of Message Design

An exploration of theories affecting message analysis and communication. Topics include persuasion, ethics, perception, attention, memory, and message analysis. Students will learn how to recognize formal features of messages and how to apply the-
ory to practical message design situations. (Prerequisite: 40-101. Recommended: prior completion of a first-year Psychology course.)

## 40-274. Information Technology and Social Change

Theories of the "Information Society": economics of information; management of knowledge in organizations; surveillance and identity in digital environments; Canadian information policy. (Prerequisite: 40 100.)

## 40-275. Introduction to Communication Theory

The study of a body of theories for understanding the communication process, including philosophical assumptions and claims about communication. The core theories will focus on general principles, concepts and processes common to all communication and include interpretive, critical, interactional, functional, structural and poststructural/postmodern theories. Other theories will deal with various contexts in which communication occurs, such as public, institutional, cultural, and mediated formats. (Prerequisite: Semester 3 or above standing.) (Recommended: 40-100 and 40101.)

## 40-280. The Economics of Communications

A study of the economic structure and operation of the communications industry with emphasis on telecommunications, television, and film. (Also offered as Economics 41 280.) (Prerequisite: Economics 41-110.)

## 40-302. Popular Culture

An examination of popular culture in contemporary society. A variety of critical and interpretive communication theories will be utilized to analyze cultural texts, practices, and politics. The course will attempt to demonstrate how cultural artifacts constitute 50 cial ideologies, values, and representations of "lived culture" or lifestyles, particularly gender, race, class, and ethnicity. (Prerequisite: 40-202.)

## 40-311. Intermediate Film Making

This course emphasizes multi-track sound editing, colour cinematography, and other

### 3.4 Communication Studies

technical and aesthetic issues in the creation of the motion picture. (Credit for this course will be allocated only after successful completion of 40-411.) (Prerequisites: $40-$ 211 and 40-212.) (2 lecture, 2 laboratory hours a week.)

## 40-315. Radio Broadcasting

An examination of current and future trends in radio broadcasting, with the focus on the social implications. Lab exercises will deal with the production of radio programs in various formats. (Prerequisite: 40-214.) (2 lecture, 2 laboratory hours a week.)

## 40-316. Advanced Video Production I

Emphasis is on the creative translation of messages into visual language, or "writing the image," employing visual metaphors and accepted conventions. Discursive and nondiscursive sound and image will be explored in student projects. (Credit for this course will be allocated only after successful completion of 40-417.) (Prerequisite: 40-217.) (2 lecture, 4 laboratory hours a week.)

## 40-321. Organizational Cultures and Communication

A detailed examination of the relationship of communication and culture in organizational settings. Several theoretical approaches are used, including social constructionist, semiotic, interactionist, and interpretive. Several aspects of organizational communication and culture are considered, including: verbal and nonverbal behaviour, entering and adjusting to organizational cultures; creating, maintaining, and changing organizational cultures; sub-cultures and super-cultures; foreign organizational cultures; the influences of technology and growth on organizational cultures; and the relationship of organizational theory to organizational culture. (Prerequisite: 40-222.)

## 40-330. Methods of Communication Criticism

An examination of criticism dealing with contemporary communication content and how its critics utilize a variety of critical methods or tools to describe, analyze, and evaluate symbolic forms and to communicate their observations and interpretations in a systematic manner. This course will emphasize approaches and applications of critical
methods to cultural artifacts. (Prerequisite: 40-202.)

## 40-333. Mass Media and Audience Research

An overview of current practices and issues in mass audience research, including the measurement of audiences by rating services, audience response assessments, and research regarding how audiences use the media.

## 40-335. Analysis and Presentation of Numerical Information

An overview of the production, use, and presentation of numerical information in communication research and media applications. Students will leam to analyse and interpret quantitative data and will practise presenting research results in written, oral, and graphic form using various computer software programs. (Prerequisite: 40-234 or equivalent.)

## 40-337. Qualitative Methods in Communication Research

An examination of interpretive, cultural; and historical methodologies utilized in contemporary communication research. A variety of possible research strategies will be explored, such as: cultural studies, interpretive interactionism, ethnography, narrative analysis, interpretive biography, interview techniques, and discourse analysis. (Prerequisite: 40-234 or 40-202 or 40-275.)

## 40-344. Cinematic Discourses

Using film or critical theory, historical or cultural studies, cinematic discourses are approached with a shifting focus on a range of topics, such as genres, the stars, film movements, or national cinemas. For example, the course may focus on a genre (such as melodrama or comedy), or the star system's influence at a particular historical moment (e.g., the Depression), or offer an overview of a specific national cinema. (May be repeated for credit more than once with consent of the Department Head.) (Prerequisite: 40-202 or 40-240 or 40-241.) (2 lecture, 2 screening hours a week.)

## 40-352. Journalism in Canada

This course explores newsgathering and reporting institutions and practices as they re-

### 3.4 Communication Studies

late to the social construction of reality. Particular emphasis is given to institutional constraints, such as concentration of ownership, monopolies and cross-ownership, professional norms and practices, the role of advertising, objectivity and subjectivity, and news sources. (Prerequisite: 40-200 or 40-225.)

## 40-360. Public Opinion

The formation of public opinion and its role in democratic society. Theories of attitude and opinion formation and persuasion. Study of propaganda. Current issues in public opinion and the "manufacture of consent." (Prerequisites: 40-100 and 40-101.)

## 40-361. Aboriginal Communication Systems

Using a critical cultural studies perspective, this course examines the Aboriginal experience, focusing on the representation and values of Aboriginal culture. The course illustrates the empowerment that comes when Aboriginal voices communicate their own culture in areas such as literature, mass media, film and documentary, music, public ceremonies, and arts and crafts. (Recommended prerequisite: 40-262. May be taught in conjunction with 26-204 or 26-371.)

## 40-367. Communication, Environment, and Development

Environmental stresses and Third World development problems from a communication perspective. The roles of information and technology. Information theory, systems theory, and concepts of cultural ecology. Media coverage, advertising, and the ecological crisis. The rhetoric of environmentalism and growth. (Prerequisites: 40 100 and 40-101.)

## 40-370. Alternative Media

A critical examination of the structure, operation, and function of the mass media in contemporary society from a number of major ideological perspectives, with an emphasis on the assessment of possible altematives. Innovative, small-scale communication approaches will be examined as one such alternative, with particular attention being paid to the media's role in, and potential for, encouraging or impeding social action. (Prerequisite: 40-200 or 40-225.)

40-380. Public Relations and Society
An examination of the content, structure and operation of public relations in the pirvate and public sectors. (Prerequisites: 40. 100 and 40-101.)
40-381. Advertising and the Mass Media This course is designed to give the student a theoretical understanding of the role of advertising in modem society as an integralas. pect of the mass communication system. (Prerequisites: 40-100 and 40-101.) (Nor available for credit to students in Business Administration.)

## 40-385. Mass Media and the Law

An examination of the effect which law has on the content of media. The course concen: trates on the impact of the Canada Act, the Charter of Rights and Freedoms, and statur tory and common law upon the dissemination of information. (Prerequisite: 40-245 or 40-257 or 40-274.)
40-398. Communication Practicum I
Application of communication skills and knowledge in work experience situations approved by the Co-ordinator of Communicar tion Practica. Admission to the course is by consent and is available only to four-year Honours students. The course is graded by a faculty advisor on the basis of a writtenreport plus other references. (To be undertaken after the successful completion of relevant 200 -level courses in the appropit: ate stream and before enrolling in 300 -level courses.) (Prerequisite: consent of a program advisor in Communication Studies.) ( $6-8$ weeks.)
40-399. Communication Practicum II (Same description as 40-398.)

## 40-402. Advanced Cultural Studies

An advanced study of communication and culture, including ethnographies, language, semiotics, narrative, ideological analysis, psychoanalysis, structuralism, social constructionism, and postmodemism. (Prerequisites: 40-202, and 40-302 or 40-330.)

## 40-411. Advanced Film Making

This course emphasizes the skill and knowedge necessary to produce a composite release print, including the conceptualization and budgeting of the film as well as the con-

### 3.4 Communication Studies

formation of original and final printing processes. (Credit for this course will be allocated only after successful completion of 40-311.) (Prerequisite: 40-311.) (2 lecture, 2 laboratory hours a week.)

## 40-417. Advanced Video Production II

An exploration of aural and visual production technologies: analog and digital, compressed video, audio-graphic, animation, desk top video, CDI, advanced television and the implications for the creative writer-producer-director. Students will develop and apply theory-based criteria in the analysis and evaluation of their projects. (Credit for this course will be allocated only after successful completion of 40-316.) (Prerequisite: 40-316.) (2 lecture, 4 laboratory hours a week.)

## 40-426. Advanced Message Design

Students will learn how to design communication units for information, training, and teaching situations, using a systematic procedure from instructional technology. Students will apply theories from communication, persuasion, and learning to determine needs, design a communication strategy, select appropriate media, and evaluate the effort. (Prerequisite: 40-272.)
40-427. Message Design for Multimedia Students will learn to use multimedia authoring tools to create web-based, CD-ROM, and interactive messages. Students will apply theories of perception, attention, attitude change, learning, and instruction to multimedia communications. Students can expect to learn one multimedia authoring tool and to create a short multimedia unit using it. (Prerequisite: $40-426$ or equivalent.)

## 40-430. Communication and Ethics

Comparative approaches to communication ethics; communication and normative integration; communication ethics and communication law; media ethics and self-regulation; contemporary ethical problems and issues in media and communication. (Prerequisite: 40-275.)
40-434. Evaluation Research in Communication Studies
An introduction to the theory, methodology, and practice of evaluation in the communi-
cation field, providing an overview of various approaches and methods of evaluation, as well as practical examples of the design of evaluation projects. (Prerequisite: Semester 7 or Semester 8 standing.)

## 40-435. Advanced Communication Research Methods

The course covers survey, experimental, and selective qualitative methods used in the study of mass communication and human interaction with new technologies. Students will design and apply survey and quasi-experimental methods and explore tools such as sampling, questionnaires, focus groups, qualitative interviews, direct observation, and unobtrusive measurement. (Prerequisite: 40-335 or equivalent.)
40-441. Documentary Film and Video I An introduction to the range of contemporary documentary techniques, approaches, and styles, with attention to the Canadian situation. These modem formats are considered in the context of the origins and the historical development of the idea of documentary. (Credit for this course will be allocated only after successful completion of 40-442.) (Prerequisite: one previous film studies course.)
40-442. Documentary Film and Video II A conceptual approach to the problematic issues in the depiction of "reality," with attention to Canadian developments. Included will be an examination of the role of technology, financing, distribution, and exhibition arrangements, and cultural and ideological factors in the introduction and acceptance of various documentary techniques, approaches, and styles. (Credit for this course will be allocated only after successful completion of 40-441.) (Prerequisite: 40-441.)

## 40-443. Film Theory and Criticism

An examination of the changing theoretical and critical approaches to the film, including issues in the production and reception of film, such as realism, adaptation, convention, signification, and culture. (Prerequisites: 40-202 and one of 40-240, 40-241, 40-243, or 40-344.)

## 40-452. Contemporary News Media

An exploration of the contemporary, topical issues concerning the news media, includ-

### 3.4 Communication Studies

ing: ownership, economics, concentration, monopolization, and other constraints. (Prerequisite: $40-352$ or $40-370$.)

## 40-453. News Media Analysis

An examination of the theory, praxis, and content of news media. A qualitative, case study approach will emphasize one of various methods, such as: field research, discourse, semiotic, narrative, or ideological analysis. (Prerequisite: 40-352 or 40-370.)

## 40-457. Communication Network Standards, Governance, and Regulation

Advanced study of Canadian and intemational communication policy and systems. Particular focus is upon globalization and convergrnce of media technologies and regulatory regimes; the implications of globalization and convergence for the design, development, govemance, and comsumption of communication services; and the implications for the functioning of major political and economic institutions. Seminar format, with class participation and team research projects. (Prerequisite: 40-257.)

## 40-461. International Communication Systems: Southern Hemisphere

An examination of intemational communication systems in the southern hemisphere. Topics include: impact of colonialism, power and hegemony, technology and information flow, cultural dependency/diversity/identity/sovereignty, cultural appropriation, communication and development, indigenous knowledge systems, ownership and control/access and participation, propaganda, and intemational communication policy and technology. (Recommended prerequisite: 40-262 or 40-361.)

## 40-474. Social Order and the Information Society

Theories of technological determinism; social construction of technological systems; trajectories of technological change; critical theories of technology; phenomenology of technology. Linguistic theories in user interface, artificial intelligence, and expert systems design. Seminar format. (Prerequisites: 40-274.)

## 40-475. Advanced Communication Theory

An examination of contemporary communi: cation theories, such as: critical, cultural functional, structural, and postmodern ap proaches. Special attention will be devoled to critically evaluating the underlying as sumptions and frameworks of various theo ries. (Prerequisite: 40-275 and fourth-yead standing.)

## 40-476. Canadian Communication Thought

Commonalities and differences in the comr munication thought of first- and second-gen eration Canadian theorists: Harold Innis, John Grierson, Dallas Smythe, Graham Spry, C.B. Macpherson, George Grant Irene Spry, Gertrude Robinson, Northrup Frye, Marshall McLuhan. A study of dialec tics, holism, political economy, ontology) epistemology, and cultural change in the context of media and technology. (Prereq uisite: 40-275.)

## 40-486. Minorities, Women, and the Mass Media

Using critical cultural studies theory, the course studies power and representation introducing the voices of diverse groups who are often silenced or distorted by mairstream media. It examines both the means used to identify, label, objectify, symbolicaly annihilate and stereotype, and counter hegemonic texts that critique ideologies which institutionalize racism, sexism, das sism, and heterosexism. (Also offered in So: ciology as 48-486.) (Recommended prerequisite: one or more of 40-202, 40-262 $40-275,40-361,40-461,48-241,48-306$. 49-306, or 48-333.)

## 40-487. Selected Topics in Policy and Systems

An advanced exploration of selected topies related to Policy and Systems. The course may be offered as an individual or smal group tutorial, or as a regular class. For tur torials (available only to four-year Honours students), project proposals must be approved by a program advisor in Communica tion Studies prior to registration. (May be taken for credit more than once.) (Prereq uisite: successful completion of the appro-
priate upper-level Policy and Systems courses.)

## 40-488. Selected Topics in Culture and Theory

An advanced exploration of selected topics related to Culture and Theory. The course may be offered as an individual or small group tutorial, or as a regular class. For tutorials (available only to four-year Honours students), project proposals must be approved by a program advisor in Communication Studies prior to registration. (May be taken for credit more than once.) (Prerequisite: successful completion of the appropriate upper-level Culture and Theory courses.)

## 40-489. Selected Topics in Design and Applications

An advanced exploration of selected topics related to Design and Applications processes in print, audio and/or visual media. The course may be offered as an individual or small group tutorial, or as a regular class. For tutorials (available only to four-year Honours students), project proposals must be approved by a program advisor in Communication Studies prior to registration. (May be taken for credit more than once.) (Prerequisite: successful completion of the appropriate upper-level Design and Applications courses.)
40-498. Communication Practicum III Application of communication skills and knowledge in work experience situations approved by the Co-ordinator of Communication Practica. Admission to the course is by consent and is available only to four-year Honours students. The course is graded by a faculty advisor on the basis of a written report plus other references. (To be undertaken after the successful completion of relevant 300 -level courses in the appropriate stream.) (Prerequisite: consent of a program advisor in Communication Studies.) (6-8 weeks.)
40-499. Communication Practicum IV (Same description as 40-498.)

### 3.5 Dramatic Art

(Ext. 2804)

## OFFICERS OF INSTRUCTION

## Professors

Mady Kelly, Diana; B.A. (Assumption), M.A. (New York University)-1970. (Director of the School)
Pinnell, William H.; B.A. (Glassboro, N.J.), M.A. (Wayne State)-1972.

Warren, Bernie;-1992.

## Associate Professor

Francis, Azra D.; B.A., B.A. (Hons.), M.A., Ph.D. (Natal); L.T.C.L., F.T.C.L.-1972.

## Assistant Professors

Keating, Michael; B.A. (Acadia), N.T.S.C., M.F.A. (Boston)-1997.

Ruggirello, Tina; B.A., M.Ed. (Windsor)1997.

Walsh, Lionel; B.F.A. (Windsor), M.F.A. (Virginia Commonwealth)-1997.
Taylor, Brian; B.A. (Windsor), M.F.A. (Al-berta)-2000.
Rintoul, Brian-2001.

## Adjunct Associate Professor

Klein, Owen; B.A., M.A. (Villanova), Ph.D. (Indiana)-1979.

### 3.5.1 PROGRAM REGULATIONS

## STANDING REQUIRED

In addition to complying with the general university regulations (see 2.4.19) in order to advance in the B.F.A. program, students must obtain a minimum grade of C in all required performance courses, specifically: 24-120, 24-121, 24-126, 24-127, 24-128, 24-129, 24-220, 24-221, 24-223, 24-224, 24-226, 24-227, 24-228, 24-321, 24-322, 24-323, 24-324, 24-326, 24-327, 24-420, 24-429, 24-451, 24-453, 24-454, 24-455, 24-456, 24-457, and 24-458.
In order to advance in the Drama in Education program, students must obtain a minimum grade of c in the following required courses: 24-270, 24-271, 24-370, 24-371,

### 3.5 Dramatic Art

24-372, 24-373, 24-377, 24-378, 24-470, 24-471, 24-479.
Grades will be reviewed at the end of each semester, and students who do not achieve the minimum grade of C in all required performance courses will be required to withdraw from the program. These students may transfer into the B.A. Drama program.
Under exceptional circumstances, and with permission of the Academic Standing Committee, a student may be permitted to upgrade. If the student obtains a grade of C or better in the deficient course(s), and a major average of 8.0 or better, the student may reaudition for the B.F.A. program.

## OTHER REGULATIONS

1) Dramatic Art 24-100 (The Nature of Theatre I) and 24-200 (The Nature of Theatre II) are requirements for all first-year Dramatic Art majors.
2) Non-majors wishing to take a Dramatic Art course as an option may enter Dramatic Art courses (with the exception of those which are further restricted only to B.F.A. Acting/Music Theatre students) only with the consent of the instructor.
3) Only third- and fourth-year students may enrol in Production Problems and Directed Studies courses (with consent of the instructor).
4) B.F.A. students may not proceed to the next level without completing all core Dramatic Art course requirements of the previous level. Performance courses must be taken in sequence.
All students majoring in Dramatic Art programs are strongly advised to seek academic advising prior to registration each term.

## UNIVERSITY PLAYERS

University Players is a serious and dedicated training ground for young theatre artists. It is a venue where faculty, staff, and guest artists find an opportunity for creative expression and showcase professional-calibre content and conduct. All Dramatic Art
programs come together at University Play: ers. First-year students learn the backstage and front-of-house operation of the theate as members of running crews for two productions. In later years, students work in the areas that correspond to their chosen B.A.or B.F.A. degree programs. University Players produces fifty-five performances of six plays annually, to a total of 15,000 audience mem. bers.

### 3.5.2 PROGRAMS OF STUDY

Requirements for degree programs in Dra. matic Art make reference to the following groups of courses:
Group A-Performance Related Courses 24-225, 24-235, 24-244, 24-277, 24-278, 24-284, 24-310, 24-325, 24-344, 24-351, 24-352, 24-384, 24-421, and 24-449.
Group B-Theatre History Courses: 24-130, 24-230, 24-330, 24-333, 24-335, 24-439, and 24-469.
Group C-Technical/Design Courses: 24 115, 24-211, 24-212, 24-213, 24-215, 24 $216,24-217,24-319,24-353,24-422$, and 24-452.

Minor, general degree, Honours degree and combined Honours degree programs are available in Drama. An Honours profes sional program is available in Acting.

## Minor in Drama

Requirements: six courses in Dramatic Ath including 24-330 or 24-333. No more than two courses may be at the 100 level.

## General Bachelor of Arts in Drama

Total courses: thirty.
Major requirements: ten courses, including 24-100 and 24-200; plus one course from each of groups A, B, and C; and five addtional Dramatic Art courses as chosen in consultation with a Dramatic Art program advisor.

Option requirements (see 2.4.14 for subjed areas): six courses including

### 3.5 Dramatic Art

(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

## Other requirements:

(a) six courses from Arts, Languages, Social Sciences, and Science, including Dramatic Art;
(b) two courses from Arts, Languages, Social Sciences, and Science, excluding Dramatic Art;
(c) six courses from any area of study. excluding Dramatic Art.

## Bachelor of Arts (Honours Drama)

Total courses: forty.
Major requirements: twenty courses, including 24-100 and 24-200; plus one course from each of groups $\mathrm{A}, \mathrm{B}$, and C ; and fifteen additional Dramatic Artcourses as chosen in consultation with a Dramatic Art program advisor.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements:
(a) 26-122 and 26-123, or two English options as recommended by an advisor in Dramatic Art;
(b) four courses from Arts, Languages, Social Sciences, and Science, including Dramatic Art;
(c) two courses from Arts, Languages, Social Sciences, and Science, excluding Dramatic Art;
(d) six courses from any area of study, excluding Dramatic Art.

## Bachelor of Arts (Honours Drama in Education)

This program is designed for those students interested in pursuing future careers in the educational and developmental fields as elementary classroom teachers and secondary dramatic arts teachers, special education teachers, drama consultants and play and recreational leadersin the community, and specialists in theatre for young audiences.
Field work will be assigned only if a student Is assessed to have suitable personal qualities as well as academic qualifications.
Students wishing to obtain certification from the Ontario College of Teachers must enrol in the Faculty of Education upon the successtul completion of this program.
Drama in Education students may select options in Visual Arts. To do so, they must apply to Visual Arts during the Winter term of their first year. Their requests will be reviewed by interview and/or portfolio.
A concentration of six courses in a second teachable subject is advisable for students wishing to apply to a faculty of education. Students wishing to pursue a career in teaching are strongly advised to consult an academic advisor.

## ADMISSION REQUIREMENTS

1) All candidates must meet the requirements for admission to the University of Windsor.
2) In addition, an interview will be required.
3) Enrolment is limited.

## PROGRAM REQUIREMENTS

Total courses: forty.
Major requirements: twenty courses, including 24-100, 24-200, 24-225, 24-270, 24271, 24-277, 24-284, 24-370, 24-371, 24-372. 24-373, 24-378, and 24-479; plus two of 24-377, 24-470, 24-471, and 24-479; and five additional Dramatic Art courses to be identified in consultation with a Dramatic Art program advisor.

### 3.5 Dramatic Art

Other requirements (see 2.4.14 for subject areas):
(a) four English courses. (Recommended: 26-100, 26-122, and 26123);
(b) four Psychology courses: 46-115, 46-116, 46-223, and 46-224;
(c) two courses from Languages or two courses from Science;
(d) two courses from Music (32- or 33-), Visual Arts (27-), or Kinesiology (95-);
(e) eight additional courses from any area of study.

## Bachelor of Arts (Combined Honours Programs)

Total courses: forty.
Major requirements-Dramatic Art: seventeen courses as recommended by a Dramatic Art program advisor.
Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements: additional options (if required) to a total of forty courses.

## Bachelor of Arts (Honours Drama and Communication Studies)

Total courses: forty.
Major requirements-Dramatic Art: seventeen courses, including 24-100 and 24-200, 24-421, and 24-422; plus one course from each of groups A, B, and C; and ten additional Dramatic Art courses as chosen in consultation with a Dramatic Art program advisor.

Major requirements-Communication Studies: sixteen courses, including 40-100, 40101, and any four courses from Groups I, II, and III; plus at least two (and up to six) from each of Design and Applications, Policy and

Systems, and Culture and Theory. At least three Communication Studies courses must be at the 400 level.
Other requirements (see 2.4.14 for subjeut areas):
(a) two courses from Languages or Science;
(b) English 26-122 and 26-123, or two options as recommended by a Dramatic Art program advisor;
(c) three additional options.

## HONOURS PROFESSIONAL PROGRAM

## Bachelor of Fine Arts in Dramatic Art: Acting

The Bachelor of Fine Arts (Acting) program is available only to those who have successfully auditioned and been invited to study for an eventual career in the professional thea tre. This intensive program requires four years of study. Students develop performance techniques through courses in acting voice, interpretation, improvisation, and movement. They are also exposed to training from professional Canadian theatre artists who conduct workshops ranging in length from one day to six weeks. All B.F.A (Acting) students participate in Universit) Players productions.
This basic education, followed in some cases by further training, may lead to careet opportunities in professional theatre, television, or film. This program is also designed to prepare students to pursue graduate work and related arts.
Transfer credit articulation agreements with Humber College and George Brown Colegs may allow graduates of the three-year Thea tre Performance programs to obtain advanced standing (see 2.4.7).
Total courses: forty.
Major requirements: thirty courses, the "core" of twenty-eight courses, consisting of 24-100, 24-120, 24-121, 24-130, 24-200, 24-220, 24-221, 24-223, 24-224, 24-228, 24-230, 24-321, 24-322, 24-323, 24-324 24-330 (or 24-333), 24-344, 24-420, 24-429, and $24-451$; plus two courses from the range

### 3.5 Dramatic Art

of $24-453$ to $24-458$; and the following 1.50 credit hour courses: 24-126, 24-127, 24128, 24-129, 24-226, 24-227, 24-326, and 24-327; and two additional, non-core Dramatic Art courses to be identified in consultation with a faculty advisor.
Other requirements (see 2.4.14 for subject areas):
(a) two of 11-231, 17-235, 26-122, 26123, 26-235, 26-254, 26-326, 26327, 26-328, or 26-355;
(b) two additional English courses, including any not already selected from the previous list;
(c) two Social Science courses;
(d) two courses from any area of study, excluding Dramatic Art;
(e) four courses from any area of study, including Dramatic Art.

### 3.5.3 COURSE DESCRIPTIONS

Not all courses listed will necessarily be offered each year. Courses are three hours a week ( 3.00 credit hours) unless otherwise indicated.

## 24-100. The Nature of Theatre I

Two of the following topics will be covered: the analysis of the play script; the mechanics of performance; the principles of direction; and theories of design/technical theatre. Students are required to be crew members for one University Players production. (Laboratory hours by arrangement.)
24-111. Theatre in Contemporary Culture An examination of factors and principles involved in an audience's appreciation of theatre. (No prerequisite.) (Open to non-Dramatic Art majors.)
24-115. Stagecraft I
Introductory course specifically directed toward the technical aspects of scenic construction.
24-120. Voice for the Actor I
An introduction to the study and practice of voice and speech for the theatre. (Restricted to B.F.A. Acting students only.) (Laboratory hours by arrangement.)

## 24-121. Voice for the Actor II

Continuation of 24-120. The study and practice of voice and speech for the theatre. (Restricted to B.F.A. Acting students only.) (Prerequisite: 24-120.) (Laboratory hours by arrangement.)

## 24-126. Movement for the Actor I

An introduction to the study and practice of movement for the actor. ( 1.50 credit hours) (Restricted to B.F.A. Acting students only.) (Laboratory hours by arrangement.)

## 24-127. Movement for the Actor II

Continuation of 24-126. The study and practice of movement for the actor. (Prerequisite: 24-126.) ( 1.50 credit hours.) (Restricted to B.F.A. Acting students only.) (Laboratory hours by arrangement.)

## 24-128. Improvisation and Introduction to Acting for the Theatre I

An introduction to the study and practice of acting with an emphasis on the basic elements of improvisation. ( 1.50 credit hours.) (Restricted to B.F.A. Acting students only.) (Laboratory hours by arrangement.)

## 24-129. Improvisation and Introduction to Acting for the Theatre II

Continuation of $24-128$. The study and practice of basic elements of acting and improvisation (Prerequisite: 24-128.) (1.50 credit hours.) (Restricted to B.F.A. Acting students only.) (Laboratory hours by arrangement.)

## 24-130. Theatre History I

A study of the main elements of Greek, Roman, medieval, Italian, and English Renaissance Theatre. (Open to non-Dramatic Art majors.)

## 24-200. The Nature of Theatre II

Continuation of 24-100. Two of the following topics will be covered: the analysis of the play script; the mechanics of performance; the principles of direction; and theories of design/technical theatre. Students are required to be crew members for one University Players production. (Laboratory hours by arrangement.)

## 24-210. Speech Communication to Inform

A beginning course designed to help the student to develop poise and confidence in

### 3.5 Dramatic Art

communicating information. (2 lecture hours a week.) (Not available on an Audit basis.)

## 24-211. Scenic Design I

Introduction to the technical aspects of design for the stage; communicating the design idea through basic drafting techniques. (Prerequisite: 24-115, or consent of instructor.)

## 24-212. Scenic Design II

Problems related to the designing of a multiset production; communicating the design idea through the use of draftings, models, and colour renderings. (Prerequisite: 24-211 or consent of instructor.)

## 24-213. Scene Painting for the Theatre

Laboratory and demonstration course with an emphasis on materials, texturing techniques, and the creation of three-dimensional effects. (Prerequisite: consent of instructor.)

## 24-215. Stage and Lighting Design

The introduction and application of basic principles, including electricity, instruments, and design theory. (Laboratory hours by arrangement.)

## 24-216. Stagecraft II

Advanced practical application of scenic construction principles. (Prerequisite: 24115 or consent of instructor.)

## 24-217. Costume Design

The principles of costume design for the stage; character analysis; textile manipulation.

## 24-218. Voice Techniques

A description of the processes and techniques involved in breathing-phonation-resonance-articulation for healthy voice. (No prerequisite.) (2 lecture hours a week.) (Not available on an Audit basis.) (May not be taken for credit toward a B.F.A. Acting degree.) (Open to non-Dramatic Art majors.)

## 24-220. Voice for the Actor III

Continuation of 24-121. The study and practice of voice and speech for the theatre. (Prerequisite: 24-121.) (Restricted to B.F.A. Acting/Music Theatre students only.) (Laboratory hours by arrangement.)

## 24-221. Voice for the Actor IV

Continuation of $24-220$. The study and pras tice of voice and speech for the theatre. (PIF requisite: 24-220.) (Restricted to B.F.h Acting/Music Theatre students only.) (Labs ratory hours by arrangement.)

## 24-223. Acting for the Theatre I

Continuation of 24-129. The emphasis wi be on acting exercises, script analysis and scene work. (Prerequisite: 24-129.) (Re stricted to B.F.A. Acting/Music Theatre stry dents only.) (May be taken twice with the consent of instructor if assignments or thei treatments are significantly varied.)

## 24-224. Acting for the Theatre II

Continuation of 24-223. The emphasis wil be on the analysis and performanced scenes from plays. (Prerequisite: 24-223 (Restricted to B.F.A. Acting/Music Theatr students only.) (May be taken twice with the consent of instructor if assignments or thei treatments are significantly varied.)

## 24-225. Introductory Acting I

A practical study of the fundamentals of ade ing experienced through acting exercises.

## 24-226. Movement for the Actor III

Continuation of 24-127. The study and prac tice of movement for the actor. (Prerequisite 24-127.) (1.50 credit hours.) (Restrictedt B.F.A. Acting/Music Theatre students only (Laboratory hours by arrangement.)

## 24-227. Movement for the Actor IV

Continuation of $24-226$. The study and prac tice of movement for the actor. (Prerequisite 24-226.) (1.50 credit hours.) (Restrictedt B.F.A. Acting/Music Theatre students only (Laboratory hours by arrangement.)
24-228. Improvisation for the Theatre (Continuation of 24-129.) Application of the basic elements of improvisational actingt advanced, spontaneous scenes, and the preparation and presentation of acting exer cises. (Corequisite: 24-223 or 24-223.) (Re stricted to B.F.A. Acting/Music Theatte students only.)

## 24-229. Dance for the Theatre

A practical course in a variety of dance styles for the theatre. (Laboratory hours by at rangement.)

24-230. Theatre History II
Astudy of the main elements of French and English theatre of the seventeenth, eighteenth, and nineteenth centuries. (Open to non-Dramatic Art majors.)

## 24-235. Introductory Acting II

Emphasis is on acting exercises based on script analysis. (Prerequisite: 24-225, or consent of instructor.)
24-244. Directing I
An examination of the principles of play direction, including the role of the director, choosing plays, casting, analysis, picturization and composition, rehearsal techniques, and scene presentation. (Prerequisite: $24-$ 225, or consent of instructor.) (Laboratory hours by arrangement.)

## 24-270. Creative Drama I

An introduction to the principles, theories, and applications of creative drama, with an emphasis on creativity, storytelling, and the developmental aspects of play. (Individual course sections may be restricted to Drama in Education students only.)

## 24-271. Creative Drama II

A continuing study of creative drama. (Prerequisiste: 24-270 or consent of instructor.) (Individual course sections may be restricted to Drama in Education students only.)

## 24-272. The Creative Process

An interdisciplinary introduction to the creative process through an exploration of the lives and works of selected creative women and men. Topics include imaging, dreaming, associating, innovating, and problem solving. (Open to students from any area of study in the University.)
24-277. Developmental Improvisation I Involves a practical application of theatre games and the basic elements of improvisation to self-development. (Prerequisite: 24270 or consent of instructor.) (Individual course sections may be restricted to Drama in Education students only.)
24-278. Developmental Improvisation II Acontinuation of the study of developmental improvisation. Involves practical applications of improvisation to improvised scenes and written texts. (Prerequisite: 24-277 or
consent of instructor.) (Individual course sections may be restricted to Drama in Education students only.)
24-284. Creative Movement and Voice I The study and practice of movement and voice as they relate to the individual, theatre, and the classroom. Emphasis may be on one or both disciplines as necessary. (Prerequisite: 24-100 or consent of instructor.) (Laboratory hours by arrangement.)
24-309. Oral Interpretation of Literature A course designed to bring to the student an understanding of effective methods of content analysis and presentation of literature. Various kinds of literature will be chosen by the student through the oral interpretation of which he or she may demonstrate an understanding and ability.

## 24-310. Readers' Theatre

A study of the principles and techniques involved in script-in-hand acting and of dramatic play-reading. (Prerequisite: 24-225.)

## 24-319. Studies in Design

Designed for the advanced student who wishes to explore further studies in scenic, lighting, or costume design. (Prerequisite: consent of a faculty advisor.) (May be repeated for credit if assignments or their treatments are significantly varied.)

## 24-321. Acting-Work in Progress I

Rehearsal project in a performance style selected by Dramatic Art. The play or scenes from plays become the catalyst for the discovery of the style related to its period. (Prerequisite: 24-224.) (Restricted to B.F.A. Acting/Music Theatre students only.) (May be repeated for credit if assignments or their treatments are significantly varied.)

## 24-322. Acting-Work in Progress II

Rehearsal project in a performance style selected by Dramatic Art. The play or scenes from plays become the catalyst for the discovery of the style related to its period. (Prerequisite: 24-224.) (Restricted to B.F.A. Acting/Music Theatre students only.) (May be repeated for credit if assignments or their treatments are significantly varied.)

## 24-323. Acting-Work in Progress III

Rehearsal project in a performance style selected by Dramatic Art. The play or scenes

### 3.5 Dramatic Art

from plays become the catalyst for the discovery of the style related to its period. (Prerequisite: 24-224.) (Restricted to B.F.A. Acting/Music Theatre students only.) (May be repeated for credit if assignments or their treatments are significantly varied.)

## 24-324. Acting-Work in Progress IV

Rehearsal project in a performance style selected by Dramatic Art. The play or scenes from plays become the catalyst for the discovery of the style related to its period. (Prerequisite: 24-224.) (Restricted to B.F.A. Acting/Music Theatre students only.) (May be repeated for credit if assignments or their treatments are significantly varied.)

## 24-325. Intermediate Acting III

Emphasis is on the development of situation and characterization. The period to be studied may vary from year to year. (Prerequisite: 24-235 or consent of instructor.)

## 24-326. Voice and Movement for the Actor 1

Application of voice and movement techniques as they relate to performance assignments. Emphasis may be on one or both disciplines as necessary. (Prerequisite: 24227.) ( 1.50 credit hours.) (May be taken twice for credit.) (Restricted to B.F.A. Acting/Music Theatre students only.) (Laboratory hours by arrangement.)

## 24-327. Voice and Movement for the Actor II

Advanced application of voice and movement techniques as they relate to performance assignments. Emphasis may be on one or both disciplines as necessary. (Prerequisite: 24-326.) (1.50 credit hours.) (Restricted to B.F.A. Acting/Music Theatre students only.) (Laboratory hours by arrangement.)
24-330. Theatre in the Twentieth Century
A study of major theatrical movements and experiments in theatre during the twentieth century. (Open to non-Dramatic Art majors.)

## 24-333. Canadian Theatre History

A study of the evolution of theatre in Canada. (Open to non-Dramatic Art majors.)

## 24-335. World Theatre History

A lecture/demonstration course devoted to the study of artistic traditions in non-Western
theatres, such as those of India, China, ل ${ }^{2}$. pan, Africa, and the Middle East. (Opent non-Dramatic Art majors.)

## 24-344. Directing II

A practical course involving rehearsal teck niques and the presentation of scenes $\theta$ one-act plays. (Prerequisite: 24-244 or cor sent of instructor.) (Laboratory hours by ar rangement.)

## 24-351. Production Problems

Advanced explorations of current trends materials, or practices in performance o non-performance, with an emphasis on problem solving techniques. The studentwil research and develop solutions to one a more production problems and presen his/her findings in a seminar situation. (PTG requisite: previous experience/courses in the subject area(s) explored and consento a faculty advisor.) (Hours by arrangement (May be repeated for credit if assignmentso their treatments are significantly varied.)

## 24-352. Production Problems

Advanced explorations of current trends materials, or practices in performance a non-performance, with an emphasis on problem solving techniques. The studentwl research and develop solutions to one a more production problems and presen his/her findings in a seminar situation. (Prorequisite: previous experience/courses in the subject area(s) explored and consentd a faculty advisor.) (May be repeated tor credit if assignments or their treatments ant significantly varied.) (Hours by arrange ment.)

## 24-353. Production Problems: Stage Management

A theoretical and practical course examiningy the duties and responsibilities of the theath cal stage manager, including rehearsal procedures, protocol and etiquette, assembling the production script, cuing methods and no tations, and security/safety regulations (Prerequisite: previous experience/courses in the subject area(s) explored and consent of a faculty advisor.) (May be repeated to credit if assignments or their treatments an significantly varied.) (Laboratory hours by arrangement.)

## 24-370. Drama in Education: Curriculum Theory

A course in the use of drama as it relates to the school curriculum and the community. (Prerequisite: 24-271.) (Restricted to Drama in Education students only.)

## 24-371. Drama in Education: Literacy in Action

A course in the use of drama as it relates to the development of literacy in classroom and community settings. (Prerequisite: 24-370.) (Restricted to Drama in Education students only.)
24-372. Drama in Education: Curriculum Applications I
Applications of drama as they relate to the curriculum for Grades K through Six. Individual learning difficulties, including special needs will be discussed. Completion of a classroom contact is require d. (Fleld contacts are with the consent of Drama in Education instructors and may be outside class time.) (Prerequisite: 24-370 or consent of instructor.) (Restricted to Drama in Education students only.)

## 24-373. Drama in Education: Curriculum Applications II

Applications of drama as they relate to the curriculum for Grades Seven through Twelve and OAC. Individual learning difficulties, including special needs will be discussed. Completion of a classroom contact is required. (Field contacts are with the consent of Drama in Education instructors and may be outside class time.) (Prerequisite: 24-371 or consent of instructor.) (Restricted to Drama in Education students only.)

## 24-377. Drama, Theatre, and the Community

A practical introduction to principles, theories, and applications of drama and theatre techniques to promote and maintain health and well-being for individuals and communities. (Prerequisite: 24-370 or consent of instructor.)

## 24-378. Special Topics in Drama in Education

Investigation of current research in Drama in Education through structured readings and
independent study. (Prerequisite: 24-373 or consent of instructor)
24-384. Creative Movement and Voice II Continuation of 24-284. The study and practice of movement and voice as they relate to the individual, theatre, and the classroom. Emphasis may be on one or both disciplines as necessary. (Prerequisite: 24-284 or consent of instructor.) (Laboratory hours by arrangement.)

## 24-400. Style in Theatre

An exploration of selected theatrical styles. Topics and materials may vary from year to year. (Students may use this course number to register for the Stratford Summer Campus. Contact Dramatic Art for further information.) (May be repeated for credit twice if assignments or approaches are significantly varied.)

## 24-420. Graduation Recital

The selection, preparation, and presentation of suitable audition material in a recital situation. An introduction to the business of being a professional actor will be addressed. (Restricted to fourth-year B.F.A. Acting/Music Theatre students only.) (Laboratory hours by arrangement.)

## 24-421. Television Performance

Introduction to basic television performance techniques. Each student performs behind and in front of the camera although the emphasis is on performance. (Prerequisite: $24-$ 225 or 24-235, or by consent of instructor. Restricted to third- and fourth-year students.) (May be taken for credit twice.)

## 24-422. Advanced Television Performance/Production

Students work individually or in small groups under the supervision of an instructor in the execution of a project for television. (Prerequisite: 24-421 or consent of instructor.) (2 lecture hours, 4 laboratory hours per week.) (May be taken for credit twice.)

## 24-429. Character Study

Independent work in researching, developing, and presenting character projects based on life studies. (Restricted to B.F.A. Acting/Music Theatre students only.) (May be taken for credit twice with consent of in-
structor if assignments or their treatments are significantly varied.)

## 24-439. Directed Studies in History, Theory, or Theatre Administration

Designed for the advanced student who wishes to explore a special area of history, theory, or theatre administration with a faculty advisor. (Prerequisite: consent of a faculty advisor.) (May be taken for credit twice if assignments or their treatments are significantly varied.) (Hours by arrangement.)

## 24-449. Directed Studies in Direction

Designed for the advanced student who wishes to explore a special area of direction with a faculty advisor. (Prerequisite: consent of the faculty advisor.) (May be taken for credit twice.)

## 24-451. Performance Seminar

Study of professional practice and performance in theatre art. Supervised by a visiting professional in a work-in-progress situation. (Restricted to B.F.A. Acting/Music Theatre students only.)

## 24-452. Directed Studies in Production

A series of theatrical play production situations in which the advanced student will research, develop, and execute a major technical/design assignment under the supervision of a faculty advisor. (May be repeated for credit if assignments or approaches are significantly varied.) (Prerequisite: consent of a faculty advisor.)

## 24-453. to 24-457. Directed Studies in Performance

The emphasis in these courses will be a series of plays selected and produced by Dramatic Art. Students will research, develop. and execute a role in the performance situation under the supervision of a faculty ad-visor-director. (May be taken for credit twice.) (Restricted to fourth-year B.F.A. Acting/Music Theatre students only.)

## 24-458. Music Theatre Ensemble Production

The emphasis in this course will be the production of a musical play selected and produced by Dramatic Art and Music. Students will research, de velop, and execute a role in the performance situation under the super-
vision of a faculty advisor-director. (May be taken for credit twice.) (Restricted to fourth year B.F.A. Acting/Music Theatre students only.)

## 24-469. Directed Studies in Cross-Cultural Theatre

Designed for the advanced student who wishes to explore a special area of theatro of a unique culture with a faculty advisol (Prerequisite: previous experience/courses in the subject area(s) explored and consen of a faculty advisor.) (Restricted to students in Semester 5 and above.) (May be takenifo credit twice.)

## 24-470. Drama, Theatre, and Social Change I

Research and practical work in the history. principles, and techniques of drama and theatre as they relate to social change in community, educational, and healthcare sef tings. Students will explore international per: spectives on topics such as: Drama/Theatre and disabilities, Theatre in Education, Socio political Theatre, Popular Theatre, and Theatre for young audiences. (Prereauisites: 24-277, 24-284, and 24-377, or coonsent of instructor.)

## 24-471. Drama, Theatre, and Social Change II

A project-based, practical course in the pir ciples and techniques of drama and theatite as they relate to social change in community educational, and healthcare settings. Students will develop and deliver projects based on topics such as: Drama/Theatre and disabilities, Theatre in Education, Socio political Theatre, Popular Theatre, and Theatre for young audiences. (May be taken for credit twice.) (Prerequisite: 24-470, व consent of instructor.) ( 3 lecture, 3 laborat tory hours a week.)

## 24-479. Directed Studies in Drama in Education

Independent, directed study in a specia area of interest in drama in education under the supervision of a faculty advisor. (May be taken for credit twice.) (Prerequisite: 24-378 and consent of the faculty advisor.) (Place ment hours by arrangement.)

### 3.6 English Language, Literature, and Creative Writing

(Ext. 2288)
OFFICERS OF INSTRUCTION

## Professors Emeriti

Stollman, Samuel S.; Rabbi (Yeshiva), B.Sc. (Columbia), M.A., Ph.D. (Wayne State)1966.

McNamara, Eugene Joseph; B.A., M.A. (DePaul), Ph.D. (Northwestern)-1959.
MacLeod, Alistair; B.A., B.Ed. (St. F. X.), M.A. (New Brunswick), Ph.D. (Notre Dame), LL.D. (St. F.X.)-1969.
Stevens, Peter; B.A. (Nottingham), M.A. (McMaster), Ph.D. (Saskatchewan)-1969. Janzen, Henry David; B.A. (Assumption), M.A. (Windsor), Ph.D. (Wayne State)1970.

MacKendrick, Louis Kim; B.A., M.A. (Western Ontario), Phil.M., Ph.D. (Toronto)1971.

Atkinson, Colin B.; B.Eng. (McGill), B.A. (Sir George Williams), M.A. (Columbia), Ph.D. (New York)-1971.

## Professors

Ditsky, John M.; Ph.B., M.A. (Detroit), Ph.D. (New York)-1967.
Dilworth, Thomas R.; B.A., M.A., Ph.D. (Toronto)-1977.

## Associate Professors

Harder, Bemhard D.; B.A., M.A. (British Columbia), Ph.D. (North Carolina)-1970.
Bebout, Linda J.; B.A. (Central), M.Sc. (San Francisco State), Ph.D. (Comell)-1977.
Quinsey, Katherine M.; B.A. (Trent), Ph.D. (London)-1989, (Head of the Department)
Straus, Barrie Ruth; B.A. (Oregon), M.A., Ph.D. (lowa)-1990.
Matheson, C. Suzanne; B.A. (McGill), M.A. (Toronto), D. Phil. (Oxford)-1991.
Brandt, Di; B.A. (Manitoba), M.A. (Toronto), Ph.D. (Manitoba)-1997.

## Assistant Professors

Jenstad, Janelle Auriol; B.A. (Victoria), M.A., Ph.D. (Queen's)-1999.
Davison, Carol Margaret; B.A. (Concordia), M.A. (York), Ph.D. (McGill)-2000.

Holbrook, Susan; B.A. (Victoria), M.A., Ph.D. (Calgary)-2000.
Jacobs, Dale; B.A., M.A. (Alberta), Ph.D. (Nebraska)-2000.
Pender, Stephen; B.A. (Toronto), M.A. (Queen's), Ph.D. (Toronto)-2000.
Whette, Darryl; B.A. (Queen's), M.A., Ph.D. (Toronto)-2001.

## Sessional Lecturer

Hurvitz, Anita; B.A., M.A. (Windsor)-1993.

## Adjunct Associate Professor

Burnard, Bonnie; B.A. (Western Ontario)2001.

## Resident Writing Professional

Gervais, Marty; B.A. (Guelph), M.A. (Wind-sor)-1997.

## Writer in Residence

The staff in English usually includes a writer in residence. Writers in residence have included Moriey Callaghan, Tom Wayman, W.O. Mitchell, Adele Wiseman, Peter Robinson, Judith Fitzgerald, Daniel David Moses, and Lillian Allen.

### 3.6.1 PROGRAM REGULATIONS

1) In order to proceed to courses numbered 200 or above, students require two 100 -level English courses, one of which must be a literature course, or consent of the instructor.
2) Students pursuing a General program in English are required to have completed two of 26-110, 26-111, and 26-120.
3) For students pursuing a four-year Honours program in English, all three of 26-110, 26-111, and 26-120 must be completed by the end of the second year.
4) Students applying for a minor in English will require two 100 -level English courses, one of which must be a literature course.

### 3.6 English Language, Literature, and Creative Writing

5) No more than four 100-level English courses may be credited towards a degree in English.
6) Only one of 26-104 or 26-105 may be taken for credit.
7) Only one of 26-100 or 26-103 may be taken for credit.
8) While 26-100 and 26-103 do not fulfil the English requirements for a Minor, General, or Honours program in English, one of them may, however, be counted as an Arts option.

### 3.6.2 PROGRAMS OF STUDY

## Areas of Study

Minor, general, and four-year Honours programs are available in English Language and Literature. A four-year Honours degree program is available in English Literature and Creative Writing.

## THE 100-SERIES

Courses in the 100 -Series are designed as introductory courses for first-year students. They are divided under the following headings: Writing Courses (26-100 through 26105, and 26-120), Core Literature Courses (26-110, 26-111, and 26-120), and Other Courses in Language and Literature (26122 through 26-140.) Because of extensive reading or writing assignments, students are advised to take one, or at the most two 100Series courses in a term.

## ADVANCED UNDERGRADUATE COURSES-THE CATEGORIES

Category Courses are numbered in the 200 s and 300 s . The middle digit of the course number indicates the category to which it belongs (e.g., 26-234 belongs to Category 3). Category Courses are more advanced than courses in the 100 -Series, and the 300 -level Category courses tend to be more demanding than 200 -level courses. 400 -level courses take the form of Seminars and Advanced Seminars, and are described below. Detailed descriptions are available in the publication, Graduate Studies in English. Detailed descriptions of Seminars are available annually.

There are ten categories, which provids: a guide to the course structure by des ignating period, national literature ans approach to the study of literature, lan guage and writing.

Category 0-Creative Writing and Speos Topics:26-203, 26-204, 26-205, 26-206,26 208, 26-301, 26-302, 26-304, 26-305, 26 308, 26-309.
Category 1-Old English and Medieval Lu erature: 26-214, 26-311, 26-312, 26-314,
Category 2-Renaissance Literature: 28 223, 26-224, 26-322, 26-326, 26-327, 28 328.

Category 3-Restoration and Eighteentr Century Literature: 26-233, 26-234, 26-283 26-338.
Category 4-Nineteenth-Century Litert ture: $26-243,26-244,26-246,26-247,26$ 348.

Category 5-Twentieth-Century Literature 26-251, 26-252, 26-254, 26-354, 26-355.
Category 6-Canadian Literature: 26-262 26-264, 26-266, 26-267, 26-361.
Category 7-American Literature: 26-274. 26-275, 26-276, 26-278, 26-279, 26-371.
Category 8-Critical Theory and Praction 26-282, 26-283, 26-284, 26-285, 26-288 26-387.
Category 9-Language and Linguistics:28 291, 26-292, 26-293, 26-298, 26-395, 26 396.

Students in all degree programs in Englis are required to choose courses from a var ety of Categories to ensure that they stud) a wide range of literary periods and crilico approaches to language and literature. The number and spread of the Categories spec fied by these programs allow students gret freedom and flexibility. To make the most 0 this freedom and to avoid unwise choices students should consult advisors before be ginning any program of courses.

## FOUR-YEAR HONOURS COURSES

In addition to the other requirements out lined for their programs, four-year Honour students must take two courses at the 400 level. 400 -level courses consist of Seminars

### 3.6 English Language, Literature, and Creative Writing

(26-411 to 26-424) and of Advanced Seminars (26-426 to 26-499).
Advanced Seminars and Seminars are designed for students in the final stages of a four-year Honours program. They may have fewer scheduled meetings than other undergraduate courses, with more opportunity for independent study. They require both individual research and class participation.
The Seminaris designed primarily for fourthyear English students. The seminars have specialized subjects requiring developed literary methodology, critical theory, and research techniques. Subjects vary from term to term; details of the year's offerings are available annually.
The Advanced Seminar requires the student to complete successtully, working at the appropriate four-year Honours program level, one of the Graduate Seminars described in the publication Graduate Studies in English. Alimited number of places may be available in each Graduate Seminar for four-year Honours students.
For all 400 -level courses, the appropriate 200 - or 300 -level prerequisite(s) must be satisfied. A minimum major average of B - (or consent of the instructor) is required for entry to Advanced Seminars.

In exceptional circumstances, a Directed Reading course (26-401 to 26-410) may replace one of the above courses. Students must submit a written request to the instructor and program advisor before any formal approval can be granted.

## Preparation for the M.A. in English

Students intending to proceed to the M.A. should discuss their plans with a program advisor. The booklet Graduate Studies in English contains more information about graduate programs and requirements.

## Courses and Programs in Creative Writing

A full spectrum of courses and programs in Creative Writing are offered. All of the courses emphasize workshop participation and individual writing conferences. The individual courses constitute a complete program, beginning with 26-104 or 26-105, and
continuing with $26-203,26-304,26-305$, and 26-498. Since 26-203 and 26-498 are twoterm courses, the program provides for continuous involvement from the first year through the fourth year, leading to a fouryear Honours in English Literature and Creative Writing. Students who go on to graduate study can continue in the M.A. program in English and Creative Writing, which features a seminar at the 500 -level.
Creative Writing courses are open to English majors and non-majors alike, and to parttime students. They are not available on an Audit basis. Students may enter the program at any point commensurate with their talent and experience, or they may elect to take any of the Creative Writing courses independently. Admission to all courses (with the exception of $26-104$ ) requires approval based on a portfolio (a significant sample of the student's work, normally about twenty pages).
The deadline for portfolio submissions for all Creative Writing courses is one month before the date of the first scheduled class.

## Minor in English Language and Literature

Required: a minimum of six English courses, including two courses from the 100 -Series, one of which must be a literature course; plus two courses from Categories 1 through 4; and two courses from Categories 0 and 5 through 9 . The courses 26-100 and 26-103 do not count towards the Minor in English.

## General English Language and Literature

Total courses: thirty.
Major requirements: ten courses, including two of 26-110, 26-111, and 26-120; and eight additional courses, including at least one from each of six different Categories.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;

### 3.6 English Language, Literature, and Creative Writing

(c) two additional courses from Arts, Languages, Social Sciences, or Science.

## Other requirements:

(a) eight other courses from Arts, Languages, Social Sciences, or Science, excluding English;
(b) six more courses from any area of study, including English.

## Honours English Language and Literature

Total courses: forty
Major requirements: twenty courses, including 26-110, 26-111, and 26-120 (to be completed by the end of the second year); plus six courses distributed as evenly as possible among Categories 1 through 4; plus six courses distributed among Categories 0 an d 5 through 9 ; plus two 400 -level courses; and three additional English courses.
Recommended: 26-309 (Scholarship and Bibliography).
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements:
(a) four other courses from Arts, Languages, Social Sciences, or Science, including English;
(b) four more courses from Arts, Languages, Social Sciences, or Science, excluding English;
(c) six other courses from any area of study, excluding English.

## Honours English Literature and Creative Writing

Total courses: forty.
Major requirements: twenty courses, including 26-110, 26-111, and 26-120 (to be com-
pleted by the end of the second year); plus six courses distributed as evenly as possible among Categories 1 through 4 ; plus five courses distributed among Categories 0 and 5 though 9; plus 26-203 (a 6.0 credit course) and 26-498 (a 6.0 credit course); and at least two of 26-104, 26-105, 26-304, and 26-305. (Note that only one of 26-104 and 26-105 may be taken for credit.)
Only one two-term Creative Writing course may be taken in a single year. In exceptiona circumstances advanced standing may be granted (see 2.4.4). Students majoring in Creative Writing should seek academic advising from a member of the Creative Writing faculty.
Option requirements (see 2.4.14 for subjed areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements:
(a) four other courses from Arts, Languages, Social Sciences, or Science, including English;
(b) four more courses from Arts, Languages, Social Sciences, or Science, excluding English;
(c) six other courses from any area of study, excluding English.

## Combined Honours English Language and Literature

Total courses: forty.
Major requirements-English: seventeen courses, including 26-110, 26-111, and 26-120 (to be taken by the end of the secand year); plus six courses distributed as evenly as possible among Categories 1 through 4 ; plus five courses distributed among Categories 0 and 5 through 9; plus two 400 -level courses; and one additional English course.

### 3.6 English Language, Literature, and Creative Writing

Recommended: 26-309 (Scholarship and Bibliography).
Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements: additional options (if required) to a total of forty.
Combined Honours English Literature and Creative Writing
Total courses: forty.
Major requirements-English and Creative Writing: seventeen courses, including 26-110, 26-111, and 26-120 (to be taken by the end of the second year); plus four courses distributed as evenly as possible among Categories 1 through 4 ; plus four courses distributed among Categories 0 and 5 through 9; $26-203$ (a 6.0 credit course) and 26-498 (a 6.0 credit course); plus two of 26 104, 26-105, 26-304, and 26-305. (Note that only one of 26-104 and 26105 may be taken for credit.)
Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements: additional options (if required) to a total of forty.

### 3.6.3 COURSE DESCRIPTIONS

Not all courses listed will necessarily be offered each year. All courses listed are three hours a week ( 3.00 credit hours) unless otherwise indicated.

## COMPOSITION AND CREATIVE WRITING COURSES

## 26-100. Composition

An exploration of the fundamentals of effective writing, including expository and other kinds of writing. Includes attention to metorical concepts of audience, purpose, and context; planning, logical development, organization; format and style. Through practice in writing, the course allows students to improve their expression so they can write more clearly and forcefully at the university level. Because of the large number of written assignments and the need for individual instruction, enrolment in 26-100 is limited. (Antirequisite: 26-103.)

## 26-103. Writing English for Speakers of

 English as a Second Language Instruction in writing English in the style and form appropriate for Canadian universitylevel courses, with special emphasis on the problems of students whose first language is not English. (Antirequisite: 26-100.)
## 26-104. Refiner's Fire: Creative Process and Production

An introduction to the creative process that explores the transform of raw material into text, trends in creative writing, and statements of artistic motivation. Students will consider technique, inspiration, influence, revision, and process through lecture, discussion, reading, writing and workshop participation. (This is not a course in Composition.) (Not recommended for majors in English and Creative Writing.) (Antirequisite: 26-105.)

## 26-105. Creative Writing: Exploring the Genres

A workshop in which creative writers explore and write in various genres and forms. An introduction to the English and Creative Writing degree program, this course may

### 3.6 English Language, Literature, and Creative Writing

combine lecture, workshop participation, and interdisciplinary presentations. Portfolio approval is required for admission. (This is not a course in Composition.) (Antirequisite: 26-104.)

## CORE LITERATURE COURSES

These courses are designed to prepare prospective majors in English for advanced courses in literature.

## 26-110. Survey of English Literary Traditions: Beginning to 1760

An historical overview and critical study of selected works of English literature from its beginnings, through the medieval and Renaissance periods, to the early eighteenth century. A combination of historical knowledge and contemporary critical perspectives will provide the necessary tools and background for the study of English literature in upper-level courses.

## 26-111. Survey of English Literary Traditions: 1760 to the Present

 An historical overview and critical study of selected works of English literature from the Romantic period, through the nineteenth and early twentieth centuries, to the present day. Selections may include non-British literature in English. A combination of historical knowledge and contemporary critical perspectives will provide the necessary tools and background for the study of English literature in upper-level courses.
## 26-120. Writing about Literature

Provides the student with the basic tools for analyzing and writing about works of literature. Students will be trained in practical criticism of the major genres of literature (poetry. drama, and narrative) and will be expected to write a number of critical essays. (Not available on an Audit basis.)

## OTHER COURSES IN LANGUAGE AND LITERATURE

## 26-122. Drama of the Western World: The Tragic Vision

An introduction to drama presented from a theatrical as well as a literary point of view
and based on analy ses of selected tragedies and other related plays from Greek and Ro. man times to the present.

## 26-123. Drama of the Western World: The Comic Vision

An introduction to drama presented from a theatrical as well as a literary point of view and based on analyses of selected comedies or other plays in which the comic vision is represented from Greek and Roman times to the present.

## 26-124. The English Language

An introduction to issues related to the study of language, such as the relationship of language to the society that uses it, how language varies from one region to another, the historical background of English, the language of English prose and poetry, how chil. dren learn language, and how researchers study language. (Recommended for advanced study in language and linguistics.)
26-128. Images of Women in Literature An exploration of the ways in which the nature and roles of women have been constructed in literature of various periods and types. Includes works that reflect the actual ity of women's lives as well as those that represent women as symbolic types.

## 26-140. Topics in Literature

Course topic varies from one section to another; students should consult a program advisor for details of offerings in a given year. Topics may include The Canadian Heritage, The American Heritage, Canadian Aboriglnal Literature and Culture, and Myth and Li: erature.

## ADVANCED UNDERGRADUATE COURSES

26-203. Workshop in Creative Writing An intensive workshop in selected genres. Some previous formal creative writing experience will ordinarily be expected. Porttolio approval is required for admission. (Nol available on an Audit basis.) (2 lecture hours a week; plus individual consultations with the instructor.) (A 6.00 credit hour course.)

### 3.6 English Language, Literature, and Creative Writing

## 26-204. Contemporary Aboriginal Literature

Survey of literature by Aboriginal authors from countries such as Canada, the United States, NewZealand, and Australia. (May be taught in conjunction with Communication Studies 40-361.)

## 26-205. Children's Literature

A survey of the historical and literary development of literature written for children. Students will analyze and assess both acknowledged classics and contemporary works.

## 26-206. Comparative Literature

A comparative study of works of English and other literatures, chosen for their formal, thematic, or historical interrelationships. All texts will be read in English. Topics may vary from year to year but will be announced in advance. (May be repeated for credit if the topics are different.)

## 26-208. Writing Hypertext

An introduction to contemporary theories of writing, reading, and textuality with practical experience in writing and constructing hypertext sites for the humanities using HTML. Students' projects will include designing annotated texts and anthologies of documents relating to English studies. This is not a basic writing course. (Prerequisites: 26-120 or both 26-110 and 26-111.) (Not available on an Audit basis.) (1 lecture, 2 lab hours a week.)

## 26-214. Medieval Vision and Romance

An introduction to representative literature of the medieval genres of dream vision and romance, both British and continental. The course will focus on fourteenth-century Middle English poetry such as Chaucer's Troilus and Criseyde, Sir Gawain and the Green Knight, Pearl, Langland's Piers Plowman, and Gower's Confessio Amantis. Works will be read in normalized Middle English.

## 26-223. Non-Dramatic Literature of the Renaissance to 1603

A study of English literature and culture in the sixteenth century. Authors include More, Wyatt, Skelton, Sidney, Spenser, women writers, and popular writers.

## 26-224. Non-Dramatic Literature of the Renaissance, 1603-1660

A study of English literature and culture in the early seventeenth century. Authors include Bacon, Donne, Jonson, Herbert, Hobbes, Milton, women writers, and popular writers.

## 26-233. Literature of the Restoration and Early Eighteenth Century (1660-1727)

A survey of representative works in poetry, prose, and drama to be studied in the context of the radically shifting framework of political, social, and intellectual life in the period. Authors include Dryden, Swift, Wycherley, Pope, and early women writers such as Astell and Behn.

## 26-234. Literature of the Eighteenth Century (1727-1790)

A survey of representative works of the period encompassing the transition from the Restoration world-view to the Romantic. Focuses on the poetry of Pope, Thomson, Collins, Gray, and others; and a variety of prose forms by Johnson, Hays, and others.

## $\mathbf{2 6 - 2 3 5}$. Restoration and Eighteenth-Century Drama

A study of English plays and theatre 16601800 , through a variety of modes and playwrights. Writers may include Etherege, Behn, Dryden, Congreve, Steele, Lillo, Goldsmith, and Sheridan.

## 26-243. Early Romanticism

A survey of the poetry and prose of late eighteenth-century Britain, with emphasis upon the social, political, and cultural contexts of literary production. Writers may include Burns, Austen, Blake, Wollstonecraft, Godwin, Walpole, Wordsworth, and Coleridge.

## 26-244. Later Romanticism

A survey of the poetry and prose of late eighteenth- and early nineteenth-century Britain, with emphasis upon the social, political, and cultural contexts of literary production. Writers may include Mary Shelley, Keats, Byron, Hemans, P.B. Shelley, de Quincey, and Clare.

## 26-246. The Early Victorians

A survey of responses to industrialism, urbanization, social reform, gender relations,
and late Romantic ideas. Writers may include Dickens, Gaskell, Tennyson, Carlyle, and the Brownings.

## 26-247. The Later Victorians

A survey of responses to changing attitudes and values in art and society from mid-century to the death of Queen Victoria. Writers may include Arnold, Eliot, the Rossettis, Hardy, and Wilde.

## 26-251. Modern British Literature

A survey of writing from the beginning of the Edwardian Period to the end of the 1940s. Writers may include Pound, Lewis, Woolf, Conrad, Owen, Lawrence, Auden, Isherwood, and Eliot.
26-252. Contemporary British Literature A survey of major figures and literary trends from the end of the 1940s to the present. Writers may include Orwell, Lessing, Larkin, Greene, Spark, Adcock, Drabble, Winterson, Harrison, Rushdie, and Thomas.
26-254. Drama of the Twentieth Century A survey of drama from the realism and naturalism at the end of the nineteenth century through to the appearance of non-realistic forms, such as expressionism and absurdism, which mark the later twentieth century. Writers may include lbsen, Chekhov, Strindberg, Shaw, Beckett, lonesco, and Pinter. All works will be read in English.

## 26-263. Roots of Canadian Poetry

A survey of the narrative and lyric traditions in early Canadian poetry, from the beginnings through the Confederation group. Writers may include Crawford, Roberts, and Lampman.

## 26-264. Canadian Fiction and the New Nation

A survey of Canadian fiction from its beginnings to the early modern period. Writers may include Haliburton, Richardson, Duncan, and Leacock.

## 26-266. The Development of Modern and Contemporary Canadian Poetry

A survey of Canadian poetry from the beginnings of modernism to the present. Writers may include Birney, Purdy, Webb, Atwood, and Ondaatje.

## 26-267. Modern and Contemporary Canadian Fiction

A survey of the Canadian novel and short story after World War I. Writers may include Ross, Richler, Laurence, and Munro.

## 26-274. American Literature from the Puritans to the Romantics

An examination of the establishment of an American literary identity from the earliest Colonial writings through the period of the Revolutionary War and into the first century of the new nation's existence. Religious, philosophical, political, and historical writings of the era will be considered in terms d how they contribute to the emergence of a distinctly American literature. Writers may include Franklin, Jefferson, Irving, Poe, and Cooper.
26-275. The American Renaissance
An examination of the first great period of American literary expression, and its philosophical movement, transcendentalism. The course will study the ways in which the new culture attempted to come to terms with the critical problems of the mid-nineteenth century, including slavery and the Civil War Writers may include Hawthorne, Emerson, Thoreau, Melville, and Whitman.

## 26-276. Realists and Naturalists in the American Tradition

An examination of innovations in literany style and subject matter during the period between the Civil War and World War I. Lo-cal-colour writing and a more critical perspective on the American experience will be considered. Writers may include Dickinson, Mark Twain, Henry and William James, Crane, Adams, Dreiser, Howells, Chopin, and Norris.

## 26-278. The American Moderns

A survey of American writing in the period between the World Wars, including both the expatriates writing in Europe and the critics of domestic American society. The new styles in poetry, drama, and fiction will be considered in the context of contemporary events. Writers may include Frost, Fitzgerald, Cather, Hemingway, Faulkner, Pound, Steinbeck, Eliot, cummings, Stein, and W.C. Williams.

### 3.6 English Language, Literature, and Creative Writing

## 26-279. The Literature of Contemporary America

A survey of post-modem and postwar developments in American literary expression against the backdrop of contemporary moral, political, and artistic upheavals. The course will consider the literary responses to the testing of American values by the often chaotic circumstances of the second half of the twentieth century. Writers may include Mailer, Miller, Tennessee Williams, Bellow, Updike, Rich, Oates, Lowell, Baraka, Plath, O'Connor, and Ammons.

## 26-282. The Critical Process

An interdisciplinary exploration of the lives and works of selected critics of literature, performance arts, visual arts, and philosophical discourse. (Open to all students.)

## 26-283. Introduction to Critical Theory

An interrogation of such issues as: what is literature? what is a text? what are the roles of readers? of authors? what are the social uses of literature? Emphasis is on the understanding of fundamental critical concepts and the ways such issues affect literary history and interpretation.

## 26-284. Forms of Criticism

An interrogation of selected forms of criticism and their theoretical assumptions. The focus will vary, but may include new criticism, the Frankfurt school, the Chicago school, phenomenology, structuralism, rhetoric, literary history, reader-response, psychoanalysis, poststructuralism, feminism, Marxism, new historicism, gender studies, and postcolonialism.

## 26-285. History of Literary Criticism: <br> The Ancients to the Romantics

A survey of major works, movements, and ideas in literary criticism from Plato and Aristotle to Wordsworth and Coleridge.

## 26-286. History of Literary Criticism: <br> Mid-Victorians to <br> Post-World War II

A survey of major works, movements, and ideas in literary criticism from Amold and Pa ter through Santayana, Eliot, and Richards to Ransom, Tate, and Brooks.

26-291. History of the English Language A study of the origins of English and its various forms through the Early Modern English period (i.e., through Shakespeare's time).

## 26-292. Language Variation

A study of how languages differ and change in time and space. Some consideration will be given to dialects, stylistic differences, mechanisms of language change and variation.
26-293. Modern English and Linguistics An introduction to the field of linguistics (the study of languages as systems) with particular emphasis on the English language.

## 26-298. Applied English

A practical and theoretical introduction for English speakers to the characteristics of the English language from the viewpoint of TESL (Teaching English as a Second Language).

## 26-301. Women and Texts

An advanced exploration of how the concept of woman is constructed in texts from a variety of periods. Some consideration will be given to cultural contexts, feminist theory, and notions of sexuality.

## 26-302. Writing About the Arts

A multidisciplinary introduction to formal analysis of artistic expression. Works from diverse fields (lyric poetry, popular music, painting, sculpture, architecture, dance, and film) are studied from a variety of angles: the cultural contexts of a specific work; the nature of the aesthetic object and the ways it affects our emotions and understanding; interdisciplinary relationships between art forms. Classwork and assignments will be complemented by live encounters with the arts, including gallery, concert, and theatre visits. (Prerequisite: 26-120 or equivalent, or consent of instructor.)

## 26-304. Topics in Creative Writing

An advanced workshop focusing on an area of the literary arts. Topics may include traditional genres, screen writing, journalism, or non-traditional, interdisciplinary forms. (Portfolio approval is required for admission.) (May be repeated for credit if topics are different.) (Not available on an Audit basis.)

### 3.6 English Language, Literature, and Creative Writing

## 26-305. Editing Practicum

A course in the theory and practice of editing, covering such topics as preparation of manuscripts for submission and publication; manuscript assessment; production, design, and proofreading techniques; and other aspects of publishing. Students will be directly involved with current editorial projects in the Department. (Consent of the instructor required.) (Not available on an Audit basis.)

## 26-308. Literary Genres (Fiction, Drama, Poetry)

Topics in a genre, with changing emphasis on the nature and forms of fiction, drama, or poetry. (May be repeated for credit if the topics are different.)

## 26-309. Scholarship and Bibliography

An introduction to methods of literary research and resources of textual and critical scholarship, including practice in literary research techniques and the correct presentation of the results of research. May include the study of editing procedures and bibliographic description, and the examination of historical and theoretical implications of textual production.

## 26-311. Old English Literature

A study of Beowulf and other literature of the period, read in modem English, with considerable emphasis on the language and history of the Anglo-Saxon period.

## 26-312. The Major Works of Chaucer

An introduction to the major works of Chaucer, including The Canterbury Tales, and one or more of the dream visions: The Book of the Duchess, The House of Fame, The Parliament of Fowls. The works will be read in normalized Middle English.

## 26-314. Topics in Medieval Literature

Topics in Medieval literature, with changing emphasis on particular themes, genres, or authors.

## 26-322. Topics in Renaissance Literature

Topics in Renaissance literature, with changing emphasis on particular themes, genres, or authors. (May be offered at Stratford as "Shakespeare in Performance.")
(May be repeated for credit if the topics ars different.)

## 26-326. Shakespeare I

A study of selected plays to 1600 (early tragedies, histories, and comedies) in their cultural, political, and performance contexts

## 26-327. Shakespeare II

A study of selected plays from 1600 (trag: comedies, tragedies, and romances) in thei cultural, political, and performance contexts

## 26-328. Drama of the English Renaissance

A study of the development of English theatre and performance from the Tudor inter: lude to the closing of the theatres, with particular emphasis on major non-Shakespearean playwrights, such as Kyd, Marlowe, Heywood, Jonson, Webster, Dekker, Middleton, Beaumont and Fletcher, and Ford.

## 26-338. Eighteenth-Century Fiction

A study of the development of the novel from the late seventeenth century to the nine teenth, including works by Behn, Defoe, Fielding, Richardson, Steme, Radcliffe, Burney, and Austen.

## 26-348. Nineteenth-Century British Fiction

A study of the development of the novel in the Romantic and Victorian periods, including works by such writers as Austen, Scolt. the Brontës, Thackeray, Dickens, Eliot, Trol lope, Meredith, and Hardy.

## 26-354. Postcolonial Literature

A study of the theory, history, and literature of nations emerging from English colonial domination. Writers may include Rushdie. Emecheta, Brathwaite, Gordimer, Walcoth and Achebe.

## 26-355. Modern Irish Literature

A study of the Irish experience, togetherwith the Irish voice in British literature, including such figures as Yeats, Synge, Joyce, O'Casey, O'Connor, O'Faolain, Behan, and Beckett.

## 26-361. The Canadian Experience

Topics in Canadian literature, with changing emphasis on particular themes, genres, of
authors. (May be repeated for credit if the topics are different.)

## 26-371. The American Experience

Topic in Americal literature, with changing emphasis on particular themes, genres, or authors. (May be repeated for credit if the topics are different. This course may be taught in conjunction with Communication Studies 40-361.)
26-387. Contemporary Literary Criticism A study of selected major works, movements, and countermovements in contemporary critical theory, such as structuralism, reception theory, Marxism, semiotics, cultural studies, feminism, and postcolonialism.

## 26-395. Topics in Language, Linguistics, and Writing

Topics in language, linguistics, and writing, with changing emphasis on particular aspects of these fields. (Permission of the instructor required.) (May be repeated for credit if the topics are different.)

## 26-396. Psycholinguistics

A study of theories and research on the cognitive processes concerning language production, comprehension, and acquisition. (Also offered as Psychology 46-344.) (Prerequisites: $46-115$ and $46-116$, or 26-124, or any Category 9 course.)

## DIRECTED READINGS

## 26-401 to 26-410.

## SEMINAR COURSES

Seminar courses are numbered in the range from 26-411 through 26-424, and 26-450.
Advanced Seminar courses are numbered in the range from 26-426 through 26-499. A minimum major average of B - (or consent of the instructor) is required for entry to Advanced Seminar courses.
Particular topics and detailed descriptions for Seminar courses to be taught in the following Fall and Winter terms are available early in the preceding spring of each year.

Two Seminar courses are offered per year (one each term). Seminar courses are numbered as follows:

## 26-411. Seminar in Medieval Literature

## 26-412. Seminar in Renaissance Literature

## 26-413. Seminar in Restoration and Eighteenth-Century Literature

## 26-414. Seminar in Romantic Literature

## 26-415. Seminar in Twentieth-Century British Literature

26-416. Seminar in Canadian Literature
26-417. Seminar in American Literature
26-418. Seminar in Critical Theory and Practice

## 26-419. Seminar in Language and Linguistics

26-420. Special Topics Seminar
26-424. Seminar in Literature of the
Victorian Period

## 26-450. Seminar in Language and Logic

26-498. Seminar in Creative Writing
Students are urged to read the course descriptions of available Seminar courses carefully and to consult a program advisor before making a selection.
Particular topics and detailed descriptions for Advanced Seminar courses that will be taught in the following Fall and Winter terms are available early in the preceding spring of each year in the booklet, Graduate Studies in English. Students are urged to read the booklet carefully and to consult a program advisor before making their Advanced Seminar course selections.

### 3.7 Family and Social Relations

## (Ext. 2188)

## Co-ordinator: Dr. Gerald V. Booth

Faculty teaching courses that fulfill the requirements for degree programs in Family and Social Relations are listed in the "Officers of Instruction" for the areas of Psychology, Sociology, and other Social Sciences.
The interdisciplinary degree programs in Family and Social Relations combine courses from a variety of academic perspectives whose focus is upon the family as a fundamental unit in society. The program is designed to provide a comprehensive understanding of the family including its various possible structures, the relationships within, and the nature of its interaction with other social institutions.
A background in Family and Social Relations has relevance to careers in law, teaching, social work, govemment service, family mediation, family court support services, and applied research in the areas of sexuality, child development, family violence, separation, divorce, and aging.
Students selecting a general degree in Family and Social Relations can, with appropriate course selection, be prepared for application to four-year Honours and then graduate programs in psychology, sociology, and related disciplines.

## Minor in Family and Social Relations

Required: 48-204, 48-206, 48-306, 48-329, 48-351; and one of 48-352, 48-409, 48-461.

## General Family and Social Relations

Total courses: thirty.
Requirements:
(a) 02-250 (or equivalent), 46-115, 46-116; 48-101, 48-102, 48-104, 48-210 (or equivalent);
(b) one of 43-249, 43-250, 43-335, 43-412, 48-351;
(c) six of 46-223, 46-224, 46-240, 47117, 47-118, 48-204, 48-205, 48-

206, 48-306 (or 49-306), 48-329, 48-350, 48-354, 48-409, 48-461;
(d) two of 41-110, 46-225, 46-322, 47. 204, 47-205, 48-226 (or 49-226), 48-251, 49-214.

Other requirements (see 2.4.14 for subject areas):
(a) two courses from Science;
(b) two courses from Arts or Languages;
(c) four courses from any area of study excluding Social Sciences
(d) six courses from any area of study including Social Sciences. Courses listed above not used to fulfill other requirements may be chosen.

## Honours Family and Social Relations

Total courses: forty.

## Requirements:

(a) 02-250 (or equivalent), 46-115, 46-116, 46-223, 46-224, 46-327, 48-101, 48-102, 48-104, 48-204, 48-205, 48-206, 48-210 (or equivalent), 48-304, 48-329, 48 350;
(b) 46-313 or 48-308;
(c) one of 43-249, 43-250, 43-335, 43-412, and 48-351;
(d) one of 46-240 or 48-306 (or 49306);
(e) three of 46-225, 46-325, 47-117, 47-118, 48-354, and 49-214;
(f) two of 46-413, 48-310 (or 49-355), 48-401, 48-416
(g) two of $43-463,46-423,46-424,46-$ 440, 46-463, 48-461, 48-496;
(h) four of 41-110, 46-322, 46-323, 47-204, 47-205, 48-226 (or 49226), 48-251, 48-352 (or 49-352), 49-214.

Other requirements (see 2.4.14 for subject areas):
(a) additional options to a total of forty chosen from any area of study.

Courses listed above not used to fulfill other requirements may be chosen.

## Combined Honours Family and Social Relations

Total courses: forty.
Major requirements-Family and Social Relations: sixteen courses, consisting of:
(a) 02-250 (or equivalent), 46-115, 46-116, 48-101, 48-102, 48-104, 48-210 (or equivalent), 48-306 (or $46-240$ ), 48-308 (or 46-313, or equivalent);
(b) two of $46-223,46-224,46-327$;
(c) two of 48-204, 48-205, 48-206, 48251, 49-214;
(d) one of 48-350, 48-351, 48-352, 48-354;
(e) one of 43-463 (or 46-463), 46-423, $46-424,48-409,48-461,48-496 ;$
(f) one of 46-413, 48-310 (or 49-355), 48-401, 48-416.
Major requirements-Other Subject: as prescribed by that area of study.
Other requirements: additional options (if required) to a total of forty courses.

## Teaching Family and Social Relations

Students intending to teach Family and Social Relations at the Intermediate-Senior level in the school system are advised to take the following courses as a part of the Family and Social Relations program: 41 110, 46-223, 46-224, 46-240, 46-327, 48204, 48-205, 48-206, 48-226 (or 49-226), 48-306 (or 49-306), 48-329, 48-350, 49-214.
Students intending to apply to the Bachelor of Social Work program at Year 3 must include the following courses in their programs: 47-117, 47-118, 47-204, and 47-205.

### 3.8 French Language and Literature

## (Ext. 2062)

OFFICERS OF INSTRUCTION

## Professor Emeritus

Starets, Moshé; Dipl. Ed., B.A., M.A. (Tel Aviv), Doct. 3e cycle (Sorbonne)-1966.

## Professors

van den Hoven, Adrian T; B.A. (Assumption), M.A. (French), M.A. (English) (Windsor), D.ès L. (Louvain)-1966.

Cassano, Paul; B.A. (Windsor), M.A., Ph.D. (Columbia)-1968. (Senior Vice-President, External)
deVillers, Jean-Pierre; L. ès L. (Aix-enProvence), Ph.D. (Colorado)-1968.

## Associate Professor

Fraser, Veronica; B.A. (London), M.A., Ph.D. (Toronto)-1988. (French Program Chair)

## Assistant Professors

Collet, Tanja; Licence (Belgium), M.A., Ph.D. (Montreal)-2001.
Dolbec, Nathalie; B.A., M.A. (Toronto), B.Ed. (York), Ph.D. (Toronto)-2001.
Ohlmann, Judith; Licence, D.E.A. (France), Ph.D. (Queen's)-2001.

## Adjunct Professor

Kingstone, Basil D.; B.A., M.A., Ph.D. (Oxford), M.A. (Ottawa)-1963.

## Adjunct Associate Professor

Halford, Peter W.; B.A., M.A. (Windsor), Doct. 3e cycle (Strasbourg)-1966.

### 3.8.1 PROGRAM REGULATIONS

The French language is an essential part of Canada's culture, not only for those who become teachers or translators, but also for those who enter the legal profession, the federal or provincial civil service, social work, business, or industry-in short, all walks of life.
Minor, general degree, and combined fouryear Honours degree programs are avail-

### 3.8 French Language and Literature

able in French. A four-year Honours degree program is available in French Language and Literature.
Options in French: Students wishing to take French as an option are free to select any course provided that they have demonstrated a sufficient command of the language, and/or sufficient preparation in literary studies.

### 3.8.2 PROGRAMS OF STUDY

Requirements for degree programs make reference to the following groups of courses:
Preparatory French: 29-111, 29-112, $29-$ 113, 29-114.
French Language Training: 29-121, 29-122, 29-215, 29-221, 29-222, 29-315, 29-325.
Translation Courses: 29-328, 29-329, 29421, 29-423, 29-425, 29-427.
Linguistics: 29-230, 29-231, 29-330, 29331, 29-332, 29-430, 29-431, 29-432.
French Literature: 29-141, 29-252, 29-253, 29-255, 29-257, 29-350, 29-353, 29-354, 29-356, 29-357.
French-Canadian Literature: 29-270, 29284, 29-383, 29-385.
Modern French Culture: 29-260.
Special Topics: 29-400 to 29-496.
Directed Readings: 29-497, 29-498, 29-499.
Canadian Studies: 29-280.

## Minor in French

Required: a minimum of six French courses, including 29-121, 29-122, 29-221, and 29222, plus two courses which may be in Language Training, Translation, Linguistics, or Literature.

## General French

Total courses: thirty.
Major requirements: sixteen courses, consisting of:
(a) six Literature courses: 29-141; plus two of 29-252, 29-253, 29255, 29-350; and two of 29-257, 29-353, 29-354, 29-356; and one
of 29-270, 29-284, 29-383, 29. 385;
(b) six Language Training courses:29-121, 29-122, 29-215 (or 29-315 for native speakers), 29-221, 29-222; and one of 29 . 315, 29-325, 29-328, 29-329;
(c) three Linguistics courses: 29-230 and 29-231; and one of 29-330, 29-331, 29-332;
(d) one Special Topics (400-level) course, or 29-260, or 29-357, or a French-Canadian course.

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

## Other requirements:

(a) six more courses from Arts, Languages, Social Sciences, or Science, excluding French;
(b) two courses from any area of study, excluding French.

## Honours French Language and Literature

Total courses: forty.
Major requirements: twenty-four courses, consisting of:
(a) eleven Literature courses: 29-141 and 29-357; plus two of 29-252, 29-253, 29-255, 29-350; and two of 29-257, 29-353, 29-354, 29 . 356; plus two of 29-270, 29-284, 29-383, 29-385; and three additional literature courses;
(b) seven Language Training courses: 29-121, 29-122, 29-215 (or 29-315 for native speakers), 29-221, 29-222; and two of 29315, 29-325, 29-328, 29-329;
(c) four Linguistics courses: 29-230 and 29-231; and two of 29-330, 29-331, 29-332;

### 3.8 French Language and Literature

(d) two additional courses from 29260, French-Canadian courses, or Special Topics ( 400 -level).

Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Other requirements:
(a) four more courses from Arts, Languages, Social Sciences, or Science, excluding French;
(b) six courses from any area of study, excluding French.

## Combined Honours Programs

Major requirements-French: seventeen courses consisting of:
(a) six Literature courses: 29-141; plus two of 29-252, 29-253, 29255, 29-350; and two of 29-257, 29-353, 29-354, 29-356; and one of 29-270, 29-284, 29-383, 29385;
(b) six Language Training courses: 29-121, 29-122, 29-215 (or 29315 for native speakers), 29-221, 29-222; and one of 29-315, 29325, 29-328, 29-329;
(c) three Linguistics courses: 29-230 and 29-231; and one of 29-330, 29-331, 29-332;
(d) two additional courses from 29260, 29-357, French-Canadian courses, or Special Topics (400level).

Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Arts or two Science courses;
(c) two additional courses from Arts, Social Sciences, or Science.

Other requirements: additional options (if required) to a total of forty courses.

### 3.8.3 COURSE DESCRIPTIONS

All courses with the prefix 29-are taught in French with the exception of 29-280. Courses are normally offered in one term per year. Not all courses are offered every year. Please contact the French program office or its web site at www.uwindsor.ca/french.
Courses are three hours a week ( 3.00 credit hours) unless otherwise indicated. Language and linguistics courses may require laboratory and/or field work.
Antirequisite: An antirequisite is a specific course or level of attainment which, if already successfully completed, does not permit registration for credit in another desired course, or which may not be taken for credit concurrently with another course.

## 29-111. French for Beginners I

Acquisition of basic reading and writing skills, aural comprehension, and oral practice. No prerequisites. Only for students with no prior knowledge of French. (Antirequisite: Grade 9 French or higher.)

## 29-112. French for Beginners II

Further training in basic reading and writing skills, aural comprehension, and oral practice. (Antirequisite: Grade 10 French or higher.) (Prerequisite: 29-111, Grade 9 French, or equivalent.)

## 29-113. Preparatory French: <br> Intermediate Level I

Grammar, acquisition of reading and writing skills, aural comprehension, oral practice. Laboratory work. (Antirequisite: Grade 11 French or higher.) (Prerequisite: 29-112, Grade 10 French, or equivalent.)

## 29-114. Preparatory French: <br> Intermediate Level II

Further training in grammar. Reading and writing skills. Additional aural comprehension and oral practice. Laboratory work. This course is equivalent to OAC French. (Antirequisite: OAC French or higher.) (Prerequisite: 29-113, Grade 11 French, or equivalent.)

### 3.8 French Language and Literature

29-121. French Language Training I Phonetics: theory and practice. Grammar: norms and functions of the French verb system, nouns, pronouns, and modifiers. Laboratory work, oral practice, composition. (Prerequisite: OAC French, CPO Français, or equivalent.) (Antirequisite: any 200 -level French language training courses.)
29-122. French Language Training II Further study of the norms and functions of the French verb system, nouns, pronouns, and modifiers. Development of reading comprehension. Laboratory work, oral practice, composition. (Prerequisite: OAC French, or CPO Français, or equivalent.) (Antirequisite: any 200 -level French language training courses.)
29-141. Introduction to Literary Studies An introduction to the analysis of literary genres: poetry, drama, and prose fiction.

## 29-215. Oral Proficiency in French I

A course designed to improve the student's oral proficiency by means of presentations in class, discussions, acquisition of pertinent vocabulary, analysis of oral grammar and errors, laboratory work, and readings mainly from the francophone press. The course will endeavour to create situations for interaction with francophones through teleconferencing. (May not be taken for credit by native speakers of French.) (Prerequisites: 29-121 and 29-122.)

## 29-221. French Language Training III

Effective oral and written communication; practice in the logical development of ideas; vocabulary expansion. (Prerequisites: 29 121 and 29-122.)

## 29-222. French Language Training IV

Effective oral and written communication. Demonstration and discussion of the spoken and written codes, oral exercises, written practice. (Prerequisites: 29-121 and 29-122.)
29-230. Introduction to Linguistics I
A survey of linguistic concepts; a historical overview of attitudes towards and ideas of language; Saussure and the development of linguistics in the twentieth century. Descriptive linguistics in the twentieth century since Saussure. Language analysis at the fourlev-
els of description: phonetics, phonology, morphology, and syntax.
29-231. Introduction to Linguistics II Generative syntax, semantics, pragmatics and sociolinguistics. (Prerequisite: 29-230.)

## 29-252. French Classicism

An introduction to the literature of seven-teenth-century France and its principal doctrines. (Prerequisite: 29-141.)

## 29-253. The French Enlightenment

An introduction to the literature and thought of eighteenth-century France. (Prerequisite: 29-141.)

## 29-255. French Romanticism

A study of the romantic aesthetic through the poetry, prose, and drama of major romantic writers of the nineteenth century. (Prerequisite: 29-141.)

## 29-257. Realism and Naturalism

A study of post-romantic prose writing in the nineteenth century. (Prerequisite: 29-141.)

## 29-260. Modern French Culture

A general study of the patterned behaviour which constitutes the modern French cultural system, focusing on its intellectual, sociological, political, and religious aspects. Students will be required to read texts and will also avail themselves of the latest audiovisual technology. (Prerequisite: 29 141.)

## 29-270. Introduction to the Cultural Heritage of French Canada

Introduction to the French Canadian cultural experience: through its media, its lyric traditions in songs, poetry, and drama; an exploration of themes found in its narrative traditions, such as tales, short stories, novels; the critical and humouristic points of view of Quebec's prominent essayists and monologuists.

## 29-280. French-Canadian Literature in Translation

An introductory study of the development of the French-Canadian literary tradition in Quebec, Ontario, New Brunswick, and Manitoba, with particular emphasis on major literary trends since Confederation. All texts will be read in English. (Not available for credit in any French degree program.)

### 3.8 French Language and Literature

## 29-284. The Novel in Quebec and in Other Francophone Regions of Canada

From the early novel of the land to the postmodern novel in Francophone Canada. (Prerequisite: 29-141.)

## 29-315. Oral Proficiency in French II

 A sequel to $29-215$ designed to strengthen further the student's oral proficiency in French through more advanced materials and teaching devices, more elaborate presentations in class, more intensive participation in discussions, and more advanced grammar and error analyses and laboratory work. The course will endeavour to create situations for interaction with francophones through teleconferencing. (Prerequisite: 29215 or consent of instructor.)
## 29-325. Error Analysis

A contrastive analysis of the grammars of witten and spoken codes of the French language, as well as of French and English usage, designed to inculcate appropriate speaking and writing habits. Especially useful for those who are preparing for the test de compétence des Facultés d'Éducation. (Prerequisites: 29-221 and 29-222.)

## 29-328. Aspects of Translation: French-English, English-French I

A comparative analysis of French and English structures with special emphasis on translation processes. Accompanied by regular exercises in translation. (Prerequisites: 29-221 and 29-222.)

## 29-329. Aspects of Translation: French-English, English-French II

A comparative analysis of French and English structures with special emphasis on questions of meaning related to the sentence and its context. Accompanied by regular exercises in translation. (Prerequisites: 29-221 and 29-222.)

## 29-330. Applied Linguistics

The application of modern linguistic theory to the teaching of native, second, and foreign languages. This course has been designed especially for prospective teachers or teachers who wish to update and increase
their knowledge of language teaching techniques and the linguistic theory undertying these techniques. (Prerequisite: 29-231.)

## 29-331. Introduction to Romance Languages

A study of the main Romance languages from the point of view of their structure and development out of Vulgar Latin. Some knowledge of Latin or a second Romance language is desirable. (Prerequisite: 29-231 or consent of instructor.)

## 29-332. The History of the French Language

This course will examine successive stages in the development and formation of the French language from late antiquity to the Renaissance. (Prerequisite: 29-231.)

## 29-350. French Literature of the Middle Ages and the Renaissance

This course will examine the major authors and genres of the Middle Ages and the Renaissance, from the twelfth to the sixteenth century, including: the chanson de geste, the love songs of the troubadours, the Arthurian Romance, the sonnets of Ronsard, and the works of Rabelais. (Prerequisite: 29-141.)

## 29-353. Poetry from Baudelaire to Surrealism

A study of post-romantic, modernist poetry from the mid-nineteenth century to the midtwentieth century. (Prerequisite: 29-141.)

## 29-354. The Modern Novel and Theatre form Proust to Sartre

A study of the novel and theatre from 1900 to 1950. (Prerequisite: 29-141.)

## 29-356. Contemporary French Literature and Thought

From the "Nouveau Roman" to recent writing in Francophone countries. The postmodern aesthetic. (Prerequiste: 29-141.)

## 29-357. Contemporary Critical Theory

An introduction to major critical movements: reader response, structuralism, post-structuralism, and feminist theory. (Prerequiste: 29-141.)

### 3.8 French Language and Literature

## 29-383. Drama in Quebec and in Other Francophone Regions of Canada

A study of the main dramatic works from Gratien Gelinas to Michel Tremblay. (Prerequisite: 29-141.)

## 29-385. Poetry in Quebec and in Other Francophone Regions of Canada

Representative works of poetry from SaintDenys Garneau to Gilles Vigneault. (Prereq-uisite:29-141.)

## 29-421. Advanced Translation: French-English, English-French

Translation from selected texts from newspapers and periodicals. (Prerequisites: 29328 and 29-329, or consent of the instructor.)

## 29-423. Advanced Translation: <br> French-English, English-French

Translation of business and commercial material. (Prerequisites: 29-328 and 29-329, or consent of the instructor.)

## 29-425. Advanced Translation: <br> French-English, English-French

Translation of legal and administrative material. (Prerequisites: 29-328 and 29-329, or consent of the instructor.)

## 29-427. Advanced Translation: French-English, English-French

Translation of scientific and technical material. (Prerequisites: 29-328 and 29-329, or consent of the instructor.)

## 29-430. Theories of Syntax

Detailed examination of modern approaches to sentence structure, with particular emphasis on generative grammar. (Prerequisite: 29-231.)

## 29-431. Theories of Semantics

Detailed examination of modern theories of meaning, with particular emphasis on semantic feature analysis and the relationship between semantics and syntax. (Prerequisite: 29-231.)

## 29-432. Theories of Phonology

Detailed examination of modern approaches to phonetics (production of sounds in speech) and phonemics (analysis of distinctive units of sound), with particular emphasis on generative phonology. (Prerequisite: 29-333 or consent of instructor.)

## SPECIAL TOPICS COURSES

Special topics courses are numbered from 29-400 to 29-496 and include all 400-series courses listed in the French program. They cover language, linguistics, and literature, and may take the form of directed readings.

## DIRECTED READINGS

## 29-497 to 29-499.

## STUDIES OUTSIDE THE UNIVERSITY OF WINDSOR

Students can immerse themselves in the French language and culture by spending their third year at the Université de Nice, France, in a program operated jointly with The University of Western Ontario, The University of Guelph, and Wilfrid Laurier University.
It is also possible to study French Canadian language and culture at Quebec universities with the Summer Language Bursary Programme, or to study in Quebec for a year and be paid as a part-time, second-language monitor.
Students can also pursue studies in French at the Université du Québec à Montréal at the undergraduate level.

### 3.9 Geography

No new majors will be admitted to General or Honours programs in Geography. Students currently enrolled in Geography B.A. programs should consult program advisors or the Dean's office.

### 3.9.1 MINOR IN GEOGRAPHY

A minor in Geography consists of:
(a) one of 42-130, 42-131, or 42-150;
(b) one of 67-100 or 67-102;
(c) four other 42-and/or 67-Geography courses, three of which must be at the 200 level or above.

### 3.9.2 COURSE DESCRIPTIONSHUMAN GEOGRAPHY

For course descriptions in Physical Geography (67-), see Earth Sciences, 4.6.5.
Not all courses listed will necessarily be offered each year.

## 42-103. Geographical Techniques

An introduction to geography and its techniques, such as mapping, remote sensing, surveys, and spatial statistics. Lectures and labs will improve basic mathematical and scientific knowledge, essay writing, and computer skills. (Restricted to first-year Geography majors.) (2 lecture, 2 laboratory hours a week.)

## 42-130. Introduction to Economic Geography

A systematic examination of dynamic factors in the various sectors of the economy and the geographic patterns which they tend to produce. (3 lecture hours a week.)

## 42-131. Introduction to Cultural Geography

An examination of social and cultural systems as they affect the relationship of humankind to the environment, with a special focus on world population dynamics and patterns of food supplies and nutrition, spatial patterns of religions, languages, and ethnicity at national and intemational levels. (3 lecture hours a week.)

42-135. Introduction to Latin America An interdisciplinary course for students interested in Latin American studies reviewing the ethnology, geography, history, economy, and political development of the continent and the reflection of these in the literature and present development problems of the region. (Interested Geography students may take this course in addition to the required Geography courses, see 3.23.4) (3 lecture hours a week.)

## 42-150. Introduction to Social Planning and Geography

A survey of the development of spatial aspects of urban life, principles of urban land use, and interaction patterns of urban activities. (Also offered as Sociology 48-180 and Planning 50-150.) (3 lecture hours a week.)

## 42-200. Introductory Resource Management

Basic concepts pertaining to natural resources, the impact of their use on the ecosystem, and the problems in their management. Emphasis will be placed on the growing demand for resources, the functional interaction between human society and its physical environment, and the spatial patterns of resource use and ecological impact. (Also offered as 67-200.) (3 lecture hours a week.)

## 42-231. Intermediate Statistics

After a review of univariate and bivariate statistical methods, an introduction to multivariate statistics for geographers and planners. Computer analyses of selected geographical data sets. (Also offered as Sociology 48308 and Planning 50-231.) (Prerequisite; 02-250 or equivalent.) (2 lecture, 2 laboratory hours a week.)

## 42-249. Agricultural Geography

Study of the physical, cultural, economic, and political factors influencing the spatial patterns and regional problems of world agriculture. (3 lecture hours a week.)

## 42-250. Industrial Geography

Survey of the theory and practice of industrial location. Special attention will be paid to Canada's industrial development. (3 lecture hours a week.)

## 42-261. Medical Geography

The course is concerned with the applications of geographical concepts and techniques to health-related problems. Its integration and coherence will derive from systems-related analysis of human-environment interactions through time and over space. Topics discussed include disease paradigms; stimuli of the physical, biological, and socio-cultural environment; genetic differentiation of humans and genetic susceptibility to disease; sources and recording of health data; disease models; the geography of vectored disease, non-vectored infectious diseases, chronic diseases, nutrition; the geography of health care. (Also offered as 67-261.) (Prerequisite; 42-131 or consent of instructor.) (2 lecture hours a week.)

## 42-301. Field Techniques

The basic methods of analyzing the physical and cultural elements of the landscape. (Also offered as 67-301.) (Prerequisites: 02250, 42-103, 67-100, and 67-246, or consent of instructor.) (2 lecture hours, 1 laboratory hour a week; a one-week field program is also required.)

## 42-312. Political Geography of Russia and the Former Soviet Republics

An overview of the physical, cultural, historical, and political forces shaping the region and aspects of internal and international politics in the region. (Also offered as Political Science as 45-237.) (3 lecture hours a week.)

## 42-313. Economic Geography of Russia and the Former Soviet Republics

An overview of the geographical characteristics and government policies that shaped the centrally-planned economy of the former U.S.S.R. and problems of restructuring in the post-Soviet period. (3 lecture hours a week.)

## 42-315. Geography of Western Europe

An overview of the physical, historical, economic, and political forces that shape Western Europe. (3 lecture hours a week.)

42-323. Transportation Geography
A discussion of basic methods of analysisi geography of the flow and distributiond goods, people, and ideas. (Prerequisites 42-130 and 42-231, or consent of instructor (2 lecture hours, 1 laboratory hour a week)

## 42-325. Geographical Aspects of Modern Canada

A regionally-based analysis of Canadianos sources and lifestyles in the larger contextd North America. Emphasis on native peoples resource use strategies; Canada as an int migrant mosaic; and transitions from an ag ricultural, to an industrial, to a service-based economy; and the geographical implicas tions.

## 42-335. The Other Americas

Geographic studies of middle and South America including the Caribbean. Re sources, population, and cultural responsss under the shadow of dependent develop ment-and alternatives based on region ally-selected examples. (3 lecture hours a week.)
42-337. Social Planning and Geography An introduction to the history of social geo graphical ideas, and the modern and pos: modern concepts in social geography, with special application to western cities. (Alsp offered as Sociology 48-380 and Planning 50-337.) (Prerequisite: one of 42-130,42131, 42-150, or 48-180.) (3 lecture hours 8 week.)

## 42-361. Introduction to African Development

A multidisciplinary course introducing stw dents to developmental issues currently confronting African countries and peoples focusing on the sub-Saharan region. Using a sectoral approach, including health, edr: cation, agriculture, and the environment, the course reviews multiple and conflicting $q \downarrow$ proaches to development and addresses both the potentials and the barriers assod ated with them. (Also offered as Sociolog 48-325 and Anthropology 49-325.)

## 42-392. Urban Systems

Urbanism as a progenitor of economic change is examined from various theoreticd

### 3.9 Geography

perspectives and selected case studies. (3 lecture hours a week.)

## 42-415. Advanced Regional Geography of Western Europe

A seminar course focusing on selected topiss, including immigration, social legislation, agriculture, environment, transportation, European Union, and regional development. (Prerequisite: third year standing or consent of instructor.) (3 lecture hours a week.)

## 42-419. Advanced Field Studies

A field course designed to provide experience in the systematic and comparative study of environmental and cultural conditions in regions that are significantly different from southern Ontario, such as the Canadian Arctic or regions of the United States, Europe, and the Caribbean. An additional fee is charged to cover travel and accommodations. (Also offered as 67-419.) (Prerequisite: 67-301 or 42-301 or consent of instructor.) (Normally 2 or 3 weeks during the Summer term.)
42-448. Historical Geography of Canada The nature of historical geography. Themes in Canadian historical geography in a continental context. Persistence and change in the landscape, the development of regional identities and nodes. Cultural evaluation of resources and changing technology, discussed in relation to heritage preservation and protection. (Prerequisites: 42-130 and 42-131.) (2 seminar hours weekly.)
42-450. Advanced Topics in Geography Directed readings and research on a topic selected in consultation with instructor. (2 lecture hours a week.) (Credit may be obtained for only one of 42-450 or 50-450.)

## 42-490. Research Strategies in Geography

A seminar course on concepts and methodologies in research leading to formulation of a research project. (Prerequisite: four-year Honours, make-up, or special student status with at least twelve courses in Geography, or consent of instructor.)

## 42-491. Geography Research Projects

Guided research based on primary and secondary sources on a research project. (Pre-
requisite: 42-490.) (Compulsory for fouryear Honours, make-up, or special students.)

### 3.10 History

## (Ext. 2318)

OFFICERS OF INSTRUCTION

## Professors Emeriti

Pryke, Kenneth G.; B.A. (Carleton), M.A. Ph.D. (Duke)-1963.
Sautter, Udo; B.Phil, St. E. 1st and 2nd, Ph.D. (U. of Tuebingen)-1969.

## Professors

McCrone, Kathleen E.; B.A. (Saskatchewan), M.A., Ph.D. (New York U.)-1968. (Executive Dean, Faculty of Arts and Social Sciences)
Klinck, David M.; B.A.; M.A. (Western Ontario), Ph.D. (Wisconsin)-1968.
Murray, Jacqueline; B.A. (British Columbia), M.A., Ph.D. (Toronto)-1988. (Head of the Department)
Tucker, E. Bruce; B.A., M.A. (Toronto), Ph.D. (Brown)-1988.

## Associate Professors

Kulisek, Larry L.; B.S. (Northwest Missouri State), M.A. (Omaha), Ph.D. (Wayne State)-1968.
Simmons, Christina; A.B. (Radcliffe), M.A., Ph.D. (Brown)-1990.

Howsam, Leslie; B.A. (Waterloo), M.A., Ph.D. (York)-1993.

## Assistant Professors

Burr, Christina A.; B.A., M.A. (Western Ontario), Ph.D. (Memorial)-1997.
Palmer, Steven; B.A. (British Columbia), M.A., Ph.D. (Columbia)-2001.

## Cross-Appointment

Bird, Harry W.; B.A. Dipl. Ed., M.A. (Cambridge), M.A. (McMaster), Ph.D. (Toronto)1969.

## RELIGIOUS STUDIES

## Professor Emeritus

Crowley, Edward J.; B.A. (St. Joseph's, New Brunswick), S.T.L. (Catholic U. of America), S.S.L. (Pontifical Biblical Institute, Rome)1957.

## Professor

Milne, Pamela J.; B. A., M.A. (Windson Ph.D. (McGill)-1984.

## Associate Professor

Muldoon, Maureen H.; B.A. (Queen's), M.A. Ph.D. (U. of St. Michael's College Toronto)-1986.

### 3.10.1 PROGRAM REGULATIONS

The major areas of concentration incluot Canadian, American, British, Medieval European, and Women's History. Courses are also offered which are designed to provide insight into current national or intems tional issues on a regular basis. Additiona offerings which have relevance to contem porary Canadian society include an Histor cal Analysis of the Changing Nature of Cime and Criminal Justice; and Historical Urban zation in Canada.

1) History majors taking the minimum num ber of required History courses (twelve in: general program, or twenty in a four-yea Honours program), may obtain credit to only two 100 -level History courses. Majors taking additional History courses may court only one further 100-level History coursetb wards their degree requirements.
2) Students taking History as an option mą take more than two 100-level courses to credit and may select courses through tes 300 level. Permission for 400 -level courses is necessary unless these are required in al existing program.

### 3.10.2 PROGRAMS OF STUDY

Minor, general degree, four-year Honous degree, and combined four-year Honous degree programs are available in History.
Requirements for degree programs in His tory make reference to the following group: of courses:
North American courses: 43-243, 43-241
43-249, 43-250, 43-251, 43-261, 43-262
43-301, 43-341, 43-345, 43-346, 43-347,
43-348, 43-349, 43-350, 43-363, 43-365.
43-367, 43-441, 43-442, 43-443, 43-444

43-448, 43-449, 43-458, 43-462, and 43463.

European History courses: 43-207, 43-209, 43-214, 43-215, 43-216, 43-217, 43-219, 43-227, 43-228, 43-231, 43-232, 43-233, 43-234, 43-281, 43-283, 43-284, 43-285, 43-286, 43-312, 43-316, 43-317, 43-323, 43-325, 43-326, 43-335, 43-336, 43-338, $43-408,43-410,43-412,43-425$, and $43-$ 437.

Other courses: 43-287, 43-297, 43-386, 43390. 43-397, 42-497.

## Minor in History

Required: six History courses, only one of which may be at the 100 level, and two of which must be in European history.

## General History

Total courses: thirty.
Major requirements: twelve courses, consisting of:
(a) two 100-level courses;
(b) 43-200;
(c) five additional courses at the 200 level or above;
(d) four more courses at the 300 level or above.

Overall, three courses must be from each of the North American and European listings above.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements:
(a) four courses from any area of study, including History, but of which only one may be an additional 100-level History course;
(b) six courses from any area of study, excluding History.

## Honours History

## Total courses: forty.

Major requirements: twenty courses, consisting of:
(a) two 100-level courses;
(b) 43-200 and one of 43-401 or 43402;
(c) five additional courses at the 200 level or above:
(d) six more courses at the 300 level or above;
(e) five more courses at the 400 level.

Overall, four European courses and four North American courses are required.
Other requirements (see 2.4.14 for subject areas):
(a) two courses from English; two courses from Political Science; and two courses from Languages, or two courses from Science;
(b) four courses from Arts, Languages, Social Sciences, or Sclence, including History;
(c) six more courses from Arts, Languages, Social Sciences, or Science, excluding History;
(d) four courses from any area of study, excluding History. (Recommended: two or more courses in French or a basic course in statistics and data processing, or computer programs.)

## Combined Honours Programs

Total courses: forty.
Major requirements-History: sixteen History courses, including:
(a) two 100 -level courses;
(b) 43-200 and one of 43-401 or 43402;
(c) four additional courses at the 200 level or above;
(d) four more courses at the 300 level or above;
(e) four more courses at the 400 level.

Overall, four European courses and four North American courses are required.

Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements: additional options (if required) to a total of forty.

### 3.10.3 COURSE DESCRIPTIONS

Not all courses listed will necessarily be offered each year. All courses are three hours a week ( 3.00 credit hours).
Some courses are labelled I and II. These numbers are meant to distinguish the subject matter. Except where specifically indicated this does not imply the order in which the courses must be taken.

## 43-115. Europe and the Modern World-The Formative Period, 1500-1815

This course begins with the parallel transformations of the cultural/intellectual milieu of sixteenth-century Europe (the Renaissance) and its religious ideologies (the Reformation and the counter-Reformation). Also considered are the decline of Spain and the rise of other nation states, the constitutional problems of France and England in the seventeenth century, and the inte llectual upheavals associated with the scientific revolution and the Enlightenment. All these forces are considered in terms of their impact on the French revolution. The course is designed to foster students' skills in critical thinking and both oral and written expression. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-116. Europe and the Modern World-The Contemporary Age, 1815 to the Present

This course begins with the parallel transformations of the political/cultural milieu of eighteenth-century Europe (the French revolution) and its socialeconomic context
(industrialization). Also considered are the political ideologies associated with thos: events (liberalism, conservatism, romant cism, socialism, feminism), the nineteents. century politics of revolution, repression and imperialism, followed by the two wotk wars of the twentieth century, the politicsed communism and facism, and the impactd those events on alignments after 1945. The course is designed to foster students' skits in critical thinking and both oral and witten expression. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-123. International Relations, 1919-1939

League of Nations; the collective systemd security and its collapse; background di World War II. (3 lecture hours or 2 lectue hours, 1 tutorial hour a week.)
43-124. International Relations, 1939 to the Present
World War II; United Nations; breakdownd colonialism; Cold War; Middle East; Lat! America; problems in East Asia; Eastem Europe. ( 3 lecture hours or 2 lecture hours 1 tutorial hour a week.)
43-143. Introduction to Canadian Social History
An overview of the broad themes of the so cial history of Cana da in the nineteenth and twentieth centuries. It deals with such vared subjects as urban growth, ethnicity, religious diversity, women's movements, and lamm and labour history. (3 lecture hours or 2 leos ture hours, 1 tutorial hour a week.)

## 43-200. Historical Method

An introduction to the study of history. Biblographical tools. Essay writing. Considertion of modern research methods and trends in the discipline (narration and conceptuar zation; quantification; traditional and current fields of interest). (Restricted to History ma jors only, or with consent of the instructor) (Prerequisites: two History courses at the 100 level.)

## 43-207. Early Modern England, 1485-1714

An examination of the political, religious economic, and social developments in volved in England's evolution from a mede:
val to a modern state, with attention to the struggle for sovereignty between Crown and Parliament. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)
43-209. Modern England, 1714-Present A political and social history of England emphasizing the causes and impact of the agricultural and industrial revolutions, the development of modern political institutions, Victorianism, the rise of labour, the emancipation of women, and the evolution of the welfare state. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)
43-214. Early Middle Ages, c. 500-1100 The transition from ancient to medieval society: development of institutions (feudalism, monasticism, etc.); church and state up to the Gregorian Reforms. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-215. High and Late Middle Ages, 1100-1500

The flowering of medieval society: its religion, culture and institutions, and its eventual decline. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)
43-216. Witcheraft and Wicca: Their Historical Relationship
An examination of the phenomenon of witchcraft from an historical-social perspective, especially as reflective of attitudes towards women. A study of the roots and continuing expressions of Wicca in the ancient goddess cult of Europe, especially the Celtic and Germanic traditions, and including folk traditions.

## 43-217. History of World War I

Origins; tactics and strategy; the fronts; the aftermath and the peace settlements.

## 43-219. History of the Second Worid War

Origins of the War; Axis aggression and Allied response; military, economic, and social problems; turn of the tide and defeat of the Axis powers; questions of settlement.

## 43-227. Kievan Rus' and Muscovite Russia to 1676

The formation of the Kievan and Muscovite societies and the interaction of native and foreign institutions. Russian culture in its formative years.

43-228. History of Russia, 1676-1917 From the death of Peter the Great to the fall of the monarchy. The challenge of the West and the search for identity. Foreign policy and socio-economic changes. The golden age of Russian culture.

## 43-231. Development of Modern France, 1789-1870

The French Revolution; Napoleon; the postNapoleonic restoration; the revolutions of 1830 and 1848; the Second Empire; the Franco-Prussian War and the Paris Commune.

## 43-232. Development of Modern France, 1871-1958

The triumph of the Third Republic over the authoritarian right; the catastrophe of World War I; the disintegration of the Third Republic during the inter-war years; the triumph of Fascism; the fourth French Republic.

## 43-233. German History in the 18th and 19th Centuries

Selected aspects, including the rise of Prussia; the demise of the Holy Roman Empire, the 1848-49 revolutions; Bismarck; the Wilhelmine Empire.

## 43-234. German History in the 20th Century

Selected aspects including World War I; the Weimar Republic; the Third Reich and its downfall; post-war settlements; two Germanies.

## 43-243. Canada from Early European Contacts to the Origins of Confederation, 1600-1867

A study of Canada as a French colony and under early British rule: explorers and fur traders; govemment, land systems and the Church in New France; the conquest; changing British policy 1763-1791; Upper and Lower Canada; the rebellions of 1837 and the achievement of responsible government, and the origins of Confederation. (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-244. Canada since Confederation, 1867-1968

A study of Canada as an emerging nation; the development of political parties; the background of Confederation and the nature
of Canadian federalism: Macdonald and Laurier as nation builders; twentieth century political, economic and cultural developments; Canadian autonomy; foreign policy. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-249. Women in Canada and the United States, 1600-1870

This course will focus equally on the lives of women in Canada and the United States from the period of native-European contact to the mid-nineteenth century. Work, family and sexuality, cultural ideals, and political status and activism among native women and women of African and European origins will be examined and compared. (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-250. Women in Canada and the United States, 1870-Present

This course will focus equally on the lives of women in Canada and the United States from the mid-nineteenth century to the present. Native, black, immigrant, and nativeborn white women's roles in paid and unpaid labour, reform, suffrage, and family and cultural life will be examined, and Canadian and American women's experiences compared. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-251. History of Women's Movements in North America

An exploration of the collective action of women in the past and present in North America. Areas of study may include women's involvement with the temperance, civil rights, suffrage, trade union, environmental, reproductive rights, and women's liberation movements. (Also offered as Women's Studies 53-200.) (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-261. History of the United States I

From the beginning of the colonial period to the Civil War. (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 43-262. History of the United States II

 From the Civil War to the present. (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)43-281. History of Ancient Greece
The formation of the polis and its culturet the end of the Hellenic period. (Also offerm as Classical Studies 12-261.)

## 43-283. Roman History of the Republican Period I

A study of Roman civilization from its eath foundations to the destruction of Carthagen 146 B.C. The social and political problemsd the Romans will be examined in comparisu with those of modern times. (Also offeredg Classical Studies 12-281.) (Prerequisite: th 162, or an introductory History course, a consent of an advisor in History.)

## 43-284. Roman History of the Republican Period II

A study of Roman history and institutions from the destruction of Carthage to the death of Caesar and the collapse of the Re public. (Also offered as Classical Studies 12 282.) (Prerequisite: $11-162$, or an introductory History course, or consent oda advisor in History.)

## 43-285. Roman History of the Imperial Period I

An exploration of the personalities of the lifs twelve emperors and the social, politial and economic situation of the Roman Enr pire during their reigns. (Also offered \% Classical Studies 12-285.) (Prerequisite: 1t162, or an introductory History course, 0 consent an advisor in History.)

## 43-286. Roman History of the Imperial Period II

An exploration of the social, political, ew nomic, and religious aspects of the Romat Empire from the reign of Trojan to thatd Constantine the Great. (Also offeredas Classical Studies 12-286.) (Prerequisite: 11. 162, or an introductory History course, 6 consent of an advisor in History.)

## 43-287. History of Crime

This course will examine the changing nes ture of crime and criminal justice. Througtr out, the course stress will be placed on fie ways in which crime and criminal justioe were shaped by the societies in which the occurred and on the ways in which thel changed as these societies changed.

43-297. Selected Topics in History Topics of current interest selected by the area which may vary from year to year. (May be repeated for credit with permission of a program advisor in History.)

## 43-301. Culture, Literacy, and the Printed Word in Modern Europe and North America

Starting with the oral and manuscript culture of western Europe into which Gutenberg's press emerged in the mid-fifteenth century, and finishing with the publication of novels for the mass popular market of the late twentieth century, this course is an introduction to the social and literary, as well as the technological dimensions of the book in history.

## 43-312. Women in Medieval Europe (500-1500)

A thematic approach to the history of women in Europe during the Middle Ages. The primary focus will be on the historical experiences of women in their various roles and contexts-aristocrat or peasant, artisan or writer, nun or heretic, criminal or healer. (Prerequisite: $43-214$, or 43-215, or consent of instructor.)

## 43-316. The Italian Renaissance

The revival of Antiquity and its subsequent influence on the intellectual, political, and cultural shape of European society. (Prerequisite: 43-115 or consent of instructor.)

## 43-317. Christian Humanism, Reformation, and Counter Reformation

The impact of new ideas (Christian humanism), and innovations (printing press) on European society. (Prerequisite: 43-115 or consent of instructor.)

## 43-323. The Modernization of Russia: Imperial and Soviet <br> Experiments

A thematic exploration of the modernization process in Russia from the days of Peter the Great to the fall of the Soviet Union. What is modernization? Why is it important? How is it advanced? Do the resuits justify the costs?
43-325. European Cultural and Intellectual History, 1750-1860
The Enlightenment, Romanticism, the birth of the ideologies, Darwinism.

## 43-326. Community and Power in Modern European Thought

An exploration of the subject of community and power in European thought between 1850 and the late twentieth century. Special attention will be paid to Marxism/Leninism, elitist theory, facism, and structuralism/poststructuralism. (Also offered as Political Science 45-351.)

## 43-335. The Western Family in Historical Perspective

The history of the family focusing on Western Europe. (Prerequisite: 43-214, or 43215, or consent of instructor.)

## 43-336. Becoming Visible: Women in European History

An examination of attitudes to women, and women's status, roles, and significance in European history, with emphasis on the period from the eighteenth through the midtwentieth centuries. From time to time, the course might focus on a specific country.

## 43-338. Emergence of Modern Europe: Europe from the 19th Century to the Present Day

Selected aspects dealing with European development in the political, economic, social, diplomatic, and military fields.

## 43-341. Confederation

An analysis of the social, political, and economic bases of the confederation movement, of the achievement of confederation, and of the constitutional problems arising from the British North America Act.
43-345. Minorities in Canadian History An historical study of ethnic and religious minorities.
43-346. The Amerindian Experience in Canada: Origins to the Present
Changing historical interpretations of Native Peoples in Canada. (Prerequisites: 43-243 and 43-244, or consent of instructor.)

## 43-347. Cities in North America: Historical Urbanization in Canada

Thematic studies: economic development of Canadian cities; rivalry between aspiring cities for trade and transportation; city boosters, promoters, boards of trade, rise of transportation and industrialization in urban
development. The new urban (social) history: the city below the hill; strangers at our gates; saving the Canadian city; and the city beautiful. The metropolitan thesis: for and against.

## 43-348. French Canada since Confederation

A study of some of the issues in French-English relations, the French-speaking minorities outside Quebec, and Quebec's place within Confederation.

## 43-349. Canadian Labour History

A study of the development of the Canadian labour movement and an analysis of the Canadian working-class experience during the nineteeth and twentieth centuries. (Labour Studies majors must have Semester 5 or above standing or consent of instructor.)

## 43-350. History of Ontario

Profile of a province; Oliver Mowat's Ontario; social and cultural issues; the politics of development; metropolitan dominance and regional responses.

## 43-363. American History, 1945 to the Present.

Selected themes in the political and social history of the United States from the end of World War II to the present. (Prerequisite: 43-262 or consent of instructor.)

## 43-365. History of the African-Americans from the Colonial Era to the Present

Slavery, emancipation, share-cropping, urban migration, civil rights movement. Emphasis will be on work, family, relations with whites, and social protest. Women's and men's experience will be treated equally.

## 43-367. North American First Nations History

This course examines selected topics in the history of early American First Nations. Among the topics to be covered are the origins of human civilization in the Americas, the dispersal of peoples, the agricultural revolution, and encounters with Europeans.

## 43-386. History of Science

An introduction to the development of scientific ideas and methods, from the seven-teenth-century "scientific revolution" to the present, studied through the works of major
figures, including Galileo, Newton, Darwin and Einstein, and in relation to the cultures and societies in which they lived.
43-390. History of South Asia
This course will study selected topics in the history of South Asia.

## 43-397. Selected Topics in History

Topics of current interest which may vay from year to year. (May be repeated for credit with consent of an advisor in Histon.)

History courses at the 400 level are is stricted to History majors and to third-and fourth-year majors in other programs witha History component. Others may register only with the consent of the instructor.

## 43-401. European Historiography

Aspects of the writing and philosophy of his tory from ancient Greece to the twentieth century. (Restricted to fourth-year Histon majors; others may register with consentol the instructor.)
43-402. North American Historiography Study of the historical writers of Canada and the United States from the period of Euro pean settlement to the present day. (Re stricted to fourth-year History majors; others may register with consent of the instructor)

## 43-408. Culture and Society in Victorian Britain

The matic approach to Victorian society and culture. The emphasis of the course mzy vary from year to year; possible themes to discussion and research include labour and leisure, science and religion, history and memory, gender and sexuality, class andnstional identity; literacy, literature, and educa tion.

## 43-410. High Middle Ages

Thematic approach to medieval society in cluding such topics as popular religion, the peasantry, the Crusades, urbanization, etc (Prerequisite: one of 43-207, 43-209, 43 214, 43-215, 43-312, 43-316, or 43-335, of consent of instructor.)

43-412. History of Sexuality: Rome to the Council of Trent
Contemporary attitudes towards the body and the exercise of sexuality were shaped in the ancient and medieval past and are consequently little-known and less understood. This course will provide historical, religious, philosophical, and medical background to issues such as marital sexuality, homosexuallity, celibacy, and childbirth. (Prerequisite: one of 43-207, 43-214, 43-215, 43-312, 43316 , or 43-335, or consent of instructor.)
43-425. Russia at the Crossroads: The Tsarist Empire in its Final Phase, 1906-1917
Russian society and government between the revolutions of 1905 and 1917. A thematic exploration into the complex process of transition. Was Russia on the road to a peaceful evolution into a modern, democratic state and society on the westem model, or was it heading for the violence and collapse that came in 1917?
43-437. European Diplomacy from the Congress of Vienna to the U.N.
Diplomacy in theory and practice from the Congress of Vienna to the U.N.

## 43-441. Canadian Social History

Focuses on the experience of Canadians in their daily lives, especially in the period from 1840 up to the Second World War. Subjects will be selected from the major fields of social history, such as labour, women's history, and ethnicity. Attention will be paid as well to methodologies developed in such cognate fields as demography, geography, and economics. (Prerequisites: two courses in Ca nadian history or consent of instructor.)

## 43-442. French-Canadian Nationalism since the Conquest of 1759-1760

An overview of the history of French-Canada from the perspective of the development of a nationalist ideology: cultural survival, the role of the Church and Old France; the historic place of separatism; effects of industrialization and the emergence of a positive nationalism. (Prerequisite: 43-243, or 43244, or consent of instructor.)

43-443. Canada: Great Expectations to Broken Dreams, 1896-1935
Laurier and Borden administrations; Liberal convention of 1919 and the rise of Mackenzie King; the depression years and the growth of third party movements; the evolution of Canadian autonomy.

## 43-444. Canada: The New National Policy to the Rise of Trudeaumania, 1935-1968

Canadian foreign policy in the 1930s; the rise of the welfare state; King, St. Laurent, Pearson, and Diefenbaker; the "revolution" in Canadian foreign policy following the Second World War; Canada's place in North America; the Quiet Revolution in Quebec.

## 43-448. Local History

The history of Windsor and its metropolitan area from the mid-nineteenth century to the present.

## 43-449. Historic Preservation and Public History

A history of the preservation movement with respect to changing perspectives on the objectives and methods of preserving material culture. Attention will also be focused on historical research methodology as applied to historic restoration projects in Canada and to the interpretation of those projects.

## 43-458. Early American History, 1600-1800

This course examines selected themes in the political and social history of early America. Among the topics to be studied are European and Native American contacts, the political and social development of the American colonies, slavery, war and society, the changing status of women, and the American Revolution and its aftermath. (Prerequisite: 43-261 or consent of instructor.)

## 43-462. United States Diplomatic History since 1941

The United States as a superpower; containment and detente; hemispheric problems; the emergence of the Third World; Vietnam.

## 43-463. Women, Gender, and Sexuality in North America

The cultural ideology, social regulation, and experience of reproduction and sexual relations, with an emphasis on women. Topics include childbirth, slavery and sex, abortion and birth control, and the role of psychology and popular culture in the development of modern heterosexual and homosexual identities. (Also offered as in Psychology 46463.) (Prerequisite: one of 43-249, 43-250, 46-240.)
43-497. Selected Topics in History Topics of current interest which may vary from year to year. (May be repeated for credit with permission of a program advisor.)

### 3.11 International Relations and Development Studies

(Ext. 2348)
Faculty teaching courses that fulfill the if quirements for degree programs in Famit and International Relations are listed in the "Officers of Instruction" for the areas of political Science, Economics, History, Geogaphy, Sociology, and Anthropology.
The program in Intemational Relations and Development Studies links courses in ser eral areas of study in order to providea broad understanding of the dynamics d global society and a useful preparation fora wide variety of careers relating to the inter. national field.

The program draws primarily upon the fesources of Political Science, Economics History, Geography, Sociology, and Anthropology. Beyond a common core of twenty courses, students may choose to empha size either an Intemational Relations or of Intemational Development stream.
Experience has shown that this long-estab lished and comprehensive program pro vides an excellent background for careersh diplomatic services, international institb tions, internationally-oriented non-govemmental organizations, journalism, banking international business, teaching, and law The Honours B.A. in International Relations and Development Studies is a challenging program. Students who persevere have found the rewards, especially in terms offt ture caree prospects, to be worth the eflof

## Honours International Relations and Development Studies

Total courses: forty.
Major requirements: twenty courses, con: sisting of:
(a) 02-250 or an equivalent introduo tory statistics course;

### 3.11 International Relations and Development Studies

(b) 45-100, 45-160, 45-264, 45-275, 45-461, 45-462; and one of 45360 or 45-364;
(c) 41-110, 41-111, 41-221, 41-231;
(d) 43-123, 43-124, 43-243, 43-244;
(e) one of 42-312, 42-313, or 42-315;
(f) 48-226 (or 49-226), 48-333 (or 49333 ), 48-411 (or 49-411).

Other requirements:

## INTERNATIONAL RELATIONS STREAM

(a) four of 45-252, 45-261, 45-262, 45-265, 45-268, 45-360 (if not already taken as a major requirement), 45-361, 45-363, 45-364, 45-365, 45-366, 45-369;
(b) two of 41-230, 41-263, 41-283, 41284, 41-321, 41-322, 41-341, 41342, 41-350, 41-353, 41-373, 41-374, 41-440;
(c) one of 43-217, 43-219, 43-326, 43-437, 43-443, 43-444, 43-462;
(d) one of 42-312, 42-313, or 42-315 (if not already taken as a major requirement);
(e) one of 48-227, 48-232 (or 49-232), 48-327 (or 54-327), 48-330 (or 49330 ), 48-340 (or 49-340);
(f) eleven options. (It is strongly recommended that the equivalent of a language minor be taken, equaling six courses. Students with minmimal computer skills should take 60-104 early in their programs. As well, students are encouraged to consider a third-year study abroad program as an opportunity to develop fluency and for exposure to different cultures.

## INTERNATIONAL DEVELOPMENT STREAM

(a) three of 45-237, 45-239, 45-241, 45-260, 45-346, 45-371, 45-383, 45-431;
(b) Two of 41-230, 41-263, 41-283, 41284, 41-321, 41-322, 41-341, 41342, 41-353, 41-373, 41-374. 41-440;
(c) one of 42-249, 42-335, 42-337, 42-361, 42-392 (may be taken without prerequisites), 67-351;
(d) three of 48-227, 48-232 (or 49232), 48-327 (or 54-327), 48-330 (or 49-330), 48-340 (or 49-340), 48-352 (or 49-352);
(e) eleven options. (It is strongly recommended that the equivalent of a language minor be taken, equaling six courses. Students with minmimal computer skills should take 60-104 early in their programs. As well, students are encouraged to consider a third-year study abroad program as an opportunity to develop fluency and for exposure to different cultures.

### 3.12 Labour Studies

(Ext. 2190)

## Program Chair: Dr. Alan Hall

Faculty teaching courses that fulfill the requirements for degree programs in Labour Studies are listed in the "Officers of Instruction" for various areas of study in Social Sciences and Business Administration.
Certificate, general and combined Honours degree programs are available in Labour Studies.

## Certificate in Labour Studies

See "Certificate Programs", 3.36.3.

## General Labour Studies

Total courses: thirty.
Required:
(a) 54-100 (or 54-105), 54-200 (or 54204), 54-327 (or 48-327);
(b) one of 40-234, 45-275, 48-210, 48-310 (or 49-355);
(c) 43-349, 46-370, 48-225, 48-228, 48-326, 48-332, 53-100, 71-344, 71-449;
(d) five courses at the 100 -level or above; and three courses at the 300 -level or above;
(e) seven additional courses outside Social Sciences, with at least two from Science and two from Arts or Languages, including any listed above but not otherwise applied to the degree.

## CALCULATION OF AVERAGE

The major average shall be calculated on the basis of grades obtained in the Required courses listed in (a), (b), and (c) above.

## RECOMMENDED COURSE SEQUENCE

## First Year

54-100 (or 54-105), 53-100, three 100-level Social Sciences courses (see (c) above), and five other 100 -level courses.

## Second Year

54-200 (or 54-204), one of 40-234, 45-275, 48-210, 48-310 (or 49-355); 48-225, 48-228; plus two or three 200-level courses (see (e)
above); plus additional courses to a totald ten.

## Third Year

48-326, 54-327 (or 48-327), 43-349, 48-332 $71-433,71-449$; plus two or three $300-6$ 400 -level courses; plus additional coursesh a total of ten.

## Combined Honours Labour Studies

 Total courses: forty.Required:
(a) 54-100 (or 54-105), 54-200 (or 54 204), 54-327 (or 48-327);
(b) one of 40-234, 45-275, 48-210 48-310 (or 49-355);
(c) 43-349, 48-225, 48-228, 48-326 48-332, 53-100, 71-344, 71-449;
(d) five courses at the 100 -level or above; and three courses at the 300 -level or above.
Other requirements: as prescribed by the second area of study; plus additional courses (if required) to a total of forty.

It is strongly recommended that studentsob tain academic advising from the Co-ordinator of Labour Studies.

## COURSE DESCRIPTIONS

## 54-100. Labour and Social Movements in Canadian Society

An interdisciplinary introduction to the study of labour and social movements, focussing on their efforts to address the needs of work ers, women, gays and lesbians, social and ethnic minorities, students, and the poor.

## 54-105. Working for a Living

This course uses the students' own experir ences of work to examine the economic,s0 cial, and psychological significance of pad and unpaid work in Canadian society, the tasks and values assigned to various kinds of work, and the relationship between wot and living standards.

## 54-200. Labour and State

An interdisciplinary examination of the rebtionship between the state, law, and labour unions. This course examines the role oftte state and labour law in shaping and medal:
ing the relationship between labour and employers. The impact of laws in labour relations, employment standards, workers' compensation, human rights, and occupafional health and safety are examined.

## 54-204. Worker Health and Safety

 An interdisciplinary examination of the political, legal, social, and economic aspects of occupational health and safety. This course covers the history of health and safety within industrial, office, and rural contexts in Canada and other parts of the world.
## 54-310. Special Topics

Topics may vary from term to term; consult with a Labour Studies advisor for details.

## 54-327. Social Movements

Anexamination of theories and case studies of world revolutions, class struggles, and various social movements, such as the feminist, gay and lesbian, labour, native, ecological, and other movements. (Also offered as Sociology 48-327.) (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54100.)

## 54-401. Practicum in Labour Studies

This course offers students the opportunity to apply their academic studies within labour organization settings or other community organizational contexts. Students will be able to leam about the day-to-day operation and structure of a selected organization through observation of, and discussion with, staff, executive members, and activists. Students will be assigned a major project to carry out for the organization under the supervision of the course instructor and an on-site practicum supervisor. A minimum of three hours per week is required on-site, along with additional time to complete the project. Students will also be expected to meet regularly with the course instructor and to provide oral and written reports on their experiences during the term.

### 3.13 Language and Logic

(Ext. 2288)
Faculty teaching courses that fulfil the requirements for degree programs in Language and Logic are listed in the "Officers of Instruction" for the areas of English, Classical and Modem Languages, Literatures, and Civilizations, French, Philosophy, and other subject areas in Arts and Social Sciences.
The Bachelor of Arts four-year Honours program in Language and Logic provides students with a specialization in the theory and practice of effective, reasoned communications, combined with a well-rounded liberal arts education. To acquire this specialized knowledge and skills, students will have a solid foundation in the theory of language, of reasoning and logic, of communication, of English composition, speech, and rhetoric. Students will also have practical skills in reasoning and writing, in current computer technologies, and in a second language.
In addition, to acquire a solid liberal arts education, students will select courses from a broad range of subjects outside of the program. Academic advising should be obtained from a program advisor in English Language and Literature.

## Honours Language and Logic

Total courses: forty.

## Major requirements:

(a) $07-120,26-124,26-283,26-450$, 34-160, 34-260, 34-262, 34-360, 40-222, 60-104
(b) two of 26-291, 26-292, 26-293, 26396, 29-230, and 29-231;
(c) two non-English language courses above the OAC level or its equivalent;
(d) six of 11-125, 15-312, 24-210, 26284, 26-298, 29-330, 29-331, 29332, 29-430, 29-431, 34-261. 34-380, 40-100, 40-101, 40-202, 40-250, 40-252, 40-272.

Other requirements (see 2.4.14 for subject areas):
(a) two courses from Social Sciences;
(b) two courses from Science (or two language courses in a language other than that applied to section (c) of the major requirements;
(c) two courses from Arts
(d) fourteen additional courses from Arts, Languages, Social Sciences, or Science.

## RECOMMENDED COURSE SEQUENCE

First Year
07-120, 26-124, 34-160, and 60-104; plus two language courses at the appropriate level; and four additional 100 level courses.

## Second Year

Ten additional 200-level "core" and other courses. (English 26-283 and Philosophy 34-360 should be taken in Year 2 or Year 3.).

## Third Year

Ten additional 200- and 300 -level courses.

## Fourth Year

Ten additional 200-, 300-, or 400-level courses. (English 26-450 should be taken in fourth year.)

## PREPARATION FOR TEACHING

In planning their programs, students should familiarize themselves with the admission requirements of the Faculty of Education and with the requirements of the Ontario Teacher's Certificate.

## RELATED MINORS

Students are encouraged to obtain a minor in another area of study as outlined in its section of the Calendar.

## GRADUATE STUDIES

Students who intend to pursue graduate studies should consult with a program advisor to ensure that they take sufficient and proper courses to be eligible for admission to the desired graduate program.

### 3.14 Liberal and <br> Professional <br> Studies

(Ext. 2029)
The Liberal and Professional Studies Ppo gram is a multidisciplinary, general degre program for students who desire a universit education combining a solid academic cor grounded widely in the social sciences, ats sciences, and business, along with the of portunity to integrate combinations of diss pline-based courses not possible in othe programs. The Liberal and Professiona Studies Program embodies the characterd a traditional liberal arts education set hit contemporary academic and social conlert This program is intended primarily for part time working adults but is open to all stir dents.

## General Liberal and Professional Studien

Total courses: thirty, at least sixteen of whit must be at the 200 level or above, and least six of which must be at the 300 levell above. Students may take no more than si courses in any single subject area.
Requirements (see 2.4.14 for subject ab eas):
(a) six courses from Arts and Lar guages;
(b) six courses from Social Sciencas
(c) three courses from Science;
(d) four courses from Business Aot ministration;
(e) eleven additional courses fron any area of study.

## STANDING REQUIRED

Students in the Liberal and Professions Studies program must maintain a cumula tive average of 5.0 or better. There is no mb jor average requirement.

### 3.15 Music

(Ext. 2780)

## OFFICERS OF INSTRUCTION

## Professors

Hanson, Jens; B.Sc. (M.I.T.), M.A. (Denver), Ph.D. (Yale)-1968.
Palmer, David John; B.Mus., M. Mus. (Michi-gan)-1970. (Director of the School)
Householder, Richard; B.A. (Hastings College), M.M. (Colorado)-1973.
Butler, E. Gregory; A.R.C.T. (Royal Conservatory of Toronto), B.M., M.M., D.M.A. (East-man)-1974.

## Associate Professors

Henrikson, Steven T.; B.Mus., M.Mus. (British Columbia), Diploma (State Academy of Music, Munich)-1976.
Adamson, Philip; A.R.C.T. (Royal Conservatory of Toronto), B.Mus. (British Columbia), M.Mus, D.Mus. (Indiana)-1977.

MacKay, Gillian; B.Mus. (Lethbridge), M.Mus. (McGill), D.M. (Northwestern) 1992.

## Lecturer

Lesiuk, Teresa; B. Mus., M.Ed. (Manitoba), M.Mus.Th. (Colorado State), M.T.-B.C., M.T.A.-1996.

## Special/Sessional Instructors

Berthelotte, Bernadette; Horn-1997.
Button, Christopher; Piano Skills-1998.
Burton, Mihoko; Flute-1996.
Dagger, Jeanette; Voice-1980.
Dearing, Steven; Guitar-1995.
Green, Thomas; Music Appreciation,
Skills, Music History-1990.
Heilbrunn, Micah; Clarinet-2000.
Inselman, Elsie; Voice-1990.
Ivy, Valerie; Music Therapy-1998.
Jasavala, Jehanbakhsh;
Trombone-1997.
Luboniecka, Apolonia; Viola-1991.
McKeever, Catherine; Voice-1996.
McClellan, Karen; Cello-1999.
Miralis, Yannis; Woodwind
Techniques-2001.
Posey, Patrick; Saxophone-2000.

Scramlin, Judi; Oboe-2000.
Scheirich, Lillian; Violin-1990.
Sheldon, Greg; Bass-1997.
Shier, Julie; Bassoon-1997.
Valentino, Dean; Percussion-2000.
Willington, Patricia; Voice-1995.

### 3.15.1 PROGRAM REGULATIONS

1) Advanced Standing Examinations: Upon admission to a Music program a student may petition to write advanced standing examinations in 32-112, 32113, 32-212, 32-213, 32-222, 32-223, 32-322, 32-323, and 33-111.
2) Program Approval: B.Mus., B.Mus.Th., B.A. Combined Four-Year Honours, and B.M.A. students must have their programs approved by an advisor prior to registration. All applications for graduation will be subject to approval and such approval will be granted only when the academic program completed is identical with that previously approved by the academic advisor in consultation with the student.
3) Keyboard Proficiency Requirement: Keyboard skill is a valuable tool for learning in all aspects of music, and also an important asset for all careers in music. Students in the B.M.A., B.Mus., and B.Mus.Th. programs are required to demonstrate this skill by meeting the keyboard proficiency requirement set by Music. The requirement includes playing scales, chords, and arpeggios; sight reading a four-part chorale; and playing a prepared composition of approximately Grade 6 Conservatory level. The requirement must be met before students in the B.M.A., B.Mus., and B.Mus. Th. programs register for any Music course beyond their second term. Music does not offer beginning keyboard courses for credit but does offer non-credit instruction to assist students in meeting this requirement.
4) Recital Attendance Policy: Attendance at a significant number of live musical performances will broaden a student's musical experience and thus enhance and contribute to the potential for academic success. Therefore, a Recital Attendance Policy has
been developed, embracing outside music events in addition to recitals and special events offered intemally. This policy applies to all full-time students in the B.Mus., B.Mus.Th., and B.M.A. programs during each year of registration. Details for the current academic year (i.e., number of concerts and other events to be attended) are announced during the first week of classes in September.

### 3.15.2 PROGRAMS OF STUDY

A general degree program, the Bachelor of Musical Arts, is offered.
Honours degree programs leading to the Bachelor of Music and the Bachelor of Music Therapy are offered. Combined four-year Honours programs leading to the B.A. degree also are available.
A diploma program in Church Music is also offered.
Requirements for programs in Music make reference to the following groups of courses:

## Areas of Study-Academic

History and Literature: 32-106, 32-107, 32126, 32-127, 32-226, 32-227, 32-236, 32237, 32-246, 32-247, 32-326, 32-327, 32-336, 32-337, 32-346, 32-347, 32-426, 32-427, 32-436, 32-437.
Theory: 32-102, 32-103, 32-104, 32-105, 32-112, 32-113, 32-212, 32-213, 32-222, 32-223, 32-312, 32-313, 32-322, 32-323, $32-332,32-412,32-413,32-422,32-423$, 32-443, 32-472, 32-473.
Methods and Pedagogy: 32-229, 32-239, 32-248, 32-249, 32-255, 32-259, 32-260, 32-261, 32-269, 32-279, 32-289, 32-348, $32-385,32-395,32-458,32-459,32-470$, 32-471, 32-484, 32-485.
Music Therapy: 32-120, 32-121, 32-330, 32-$331,32-340,32-341,32-420,32-440,32-$ 441.

Areas of Study-Performance
Performance Studies: 33-111, 33-112, 33213, 33-214, 33-360, 33-414.

Ensembles: 33-210, 33-220, 33-230, 33. 240, 33-260, 33-270, 33-310, 33-330, 33. 350, 33-380.

## Private Instruction

The following courses offer performanceinstruction either as a 3.00 credit hour course (1-hour lesson a week) or 1.50 credit hour course (half-hour lesson a week). Courserequirements include a fifteen-minute examination before a faculty jury at the end of each term of study, as well as the attainment of the appropriate Level of Achievement. Whenrequired, a major recital may substitute for the jury examination. Students should consut Music for specific details regarding curricula for these examinations.
These courses are available to Bachelord Music, Bachelor of Musical Arts, Bachelord Music Therapy, and Bachelor of Arts (Combined Honours programs with Music) strdents with the approval of a program advisor in Music. These students will elect theirma jor instrument at the time of their admission. Subject to availability, these courses are open to other students upon successiut completion of a qualifying audition. It is the responsibility of the student to arrange fora qualifying audition by contacting Music mol later than the end of the first week of classes. Students who fail to do so will relinquish thet right to attend such classes and must comrplete the normal procedure for dropping a course as outlined on the "Course Changs Form."
Private instruction courses may be repeated for credit.

| 3.00 <br> Credit <br> Course | 1.50 <br> Credit <br> Course | Instrument |
| :--- | :---: | :---: |
| $33-347$ | $33-317$ | Voice |
| $33-348$ | $33-318$ | Piano |
| $33-349$ | $33-319$ | Organ |
| $33-351$ | $33-321$ | Harpsichord |
| $33-352$ | $33-322$ | Flute |
| $33-353$ | $33-323$ | Oboe |
| $33-354$ | $33-324$ | Clarinet |
| $33-355$ | $33-325$ | Saxophone |
| $33-356$ | $33-326$ | Bassoon |


| 33-357 | $33-327$ | French Hom |
| :--- | :--- | :---: |
| 33-358 | $33-328$ | Trumpet |
| 33-359 | $33-329$ | Trombone |
| 33-361 | $33-331$ | Euphonium |
| 33-362 | $33-332$ | Tuba |
| $33-363$ | $33-333$ | Violin |
| $33-364$ | $33-334$ | Viola |
| $33-365$ | $33-335$ | Cello |
| $33-366$ | $33-336$ | Double Bass |
| 33-367 | $33-337$ | Percussion |
| 33-368 | $33-338$ | Harp |
| 33-369 | $33-339$ | Classical Guitar |

## Graduation Project

In addition to meeting course requirements, all Year 3 and Year 4 students in the Bachelor of Music Program III must perform a recital of approximately one hour's playing time. With permission, Year 4 students in the Bachelor of Music Programs I and II may be allowed to play a recital of approximately forty minutes' playing time, or present a graduation project representing the culmination of studies in an appropriate area of academic emphasis. Application for approval must be made by March 31 of the year preceding graduation. For further details, consult a program advisor in Music.
Courses: 33-393, 33-491, 33-493, 33-495.

## Bachelor of Musical Arts (B.M.A.) ADMISSION REQUIREMENTS

In addition to meeting the regular requirements for admission to the University, admission to the B.M.A. is conditional upon a successful audition evaluated by faculty members in Music. The audition will consist of:
(a) a theory evaluation test designed to show the nature and extent of the student's aptitude in music theory;
(b) a performance of at least ten minutes' length on the student's major instrument, showing a grasp of a variety of styles.

Candidates should contact a program advisor in Music for specific requirements in the various performance media. If an accompanist from Music is required, two weeks' prior
notice must be given to the Music office, and an accompanist's fee will be charged. Candidates auditioning in Voice or Orchestral Instruments must perform at least one selection with accompaniment.

## OTHER REGULATIONS

1) Ensembles Restriction: No more than eight 1.50 credit hour courses in ensembles may count toward this degree.

## PROGRAM REQUIREMENTS

Total courses: thirty.
Major requirements: twenty-three courses, including 32-112, 32-113, 32-126, 32-127, $32-212$, and 32-213; plus the 1.50 credit hour courses 32-222 and 32-223; 33-322 and 33-323; and four courses or their equivalent in private instruction; plus two 1.50 credit hour courses in Ensembles; plus additional Music courses to a total of twentythree.
Other requirements: seven courses outside Music. (One of 07-201 or 07-202 or 07-203 is strongly recommended.)

## Honours Bachelor of Music

The following programs lead to the Honours Bachelor of Music Degree:
Program 1-Individualized: Designed for the Honours degree student who wishes to pursue an individual area of specialization. The choice of courses must be made in consultation with a program advisor in Music.
Program II-Music Education: Designed to prepare students for a music teaching career in elementary or secondary schools.
Program III-Performance: Designed to prepare students exceptionally talented in performance for a general career in music in such areas as private teaching, university teaching, and professional performance.

## ADMISSION REQUIREMENTS

In addition to meeting the regular requirements for admission to the University, admission to Bachelor of Music programs is conditional upon a successful audition evaluated by faculty members in Music. The audition will consist of:
(a) a theory evaluation test designed to show the nature and extent of

### 3.15 Music

the student's aptitude in music theory;
(b) a performance of at least ten minutes' length on the student's major instrument, showing a grasp of a variety of styles.

Candidates should contact a program advisor in Music for specific requirements in the various performance media. If an accompanist from Music is required, two weeks' prior notice must be given to the Music office, and an accompanist's fee will be charged. Candidates auditioning in Voice or Orchestral Instruments must perform at least one selection with accompaniment.

## OTHER REGULATIONS

1) Music courses whose middle digit is 0 may not count toward the B.Mus. degree.
2) Ensembles Restriction: Students may take a maximum of one-half of their additional Music courses in Ensembles and, in any case, no more than the equivalent of two, 3.0 credit courses.

## COMMON FIRST YEAR

Successful candidates will enrol in a common first year, and may delay their choice of program until the completion of two terms of performance study on their major instrument.
Candidates already accepted into Program III will be re-evaluated at the end of two terms of performance study on their major instrument.
REQUIREMENTS-PROGRAM I
Total courses: forty.
Major requirements: thirty-two courses, as given below:
History and Literature: four courses, consisting of 32-126, 32-127, and two additional courses.
Theory: seven courses, consisting of 32-$112,32-113,32-212,32-213$; and the 1.50 credit hour courses 32-222, 32-223, 32-322, 32-323, 32-422, and 32-423.
Performance Studies: six courses, consisting of one course from the series $33-347$ to 33-369 (taken six times). (Four correspond-
ing 1.50 credit hour courses from the series 33-317 to 33-339 may be substituted for two 3.0 cre dit hour courses.)

Ensembles: three courses, consisting of six 1.50 credit hour courses (one in each of six terms) and including at least two of 33-210, $33-220,33-230$, or 33-310. (33-360 may be substituted if $33-230$ is not offered.)
Additional Major requirements: two of 32 . 312, 32-313, 32-332, 32-426, and 32-427; and ten additional Music courses.
Other requirements: eight non-Music courses.

## REQUIREMENTS-PROGRAM II

Total courses: forty.
Major requirements: thirty-four courses as given below:
History and Literature: five courses, consisting of 32-126, 32-127, 32-346, and two additional courses.
Theory: eight courses, consisting of 32-112 32-113, 32-212, 32-213, and 32-443; plus the 1.50 credit hour courses $32-222,32-223$, 32-322, 32-323, 32-422, and 32-423.
Performance Studies: six and one half courses, consisting of one course from the series 33-347 to 33-369 (taken six times) and the 1.50 credit hour course $33-213$.
Methods and Pedagogy: seven and one hall courses, consisting of four courses from 32 . 229, 32-239, 32-269, 32-279, and 32-289, plus 32-248, 32-249 (or 32-259), and 32. 385 ; plus the 1.50 credit hour course, 32 . 255.

Ensembles: four courses, consisting of eight 1.50 credit hour courses (one in each term) and including at least two of $33-210,33-220$, $33-230$, or $33-310$. (33-360 may be subsffe tuted if $33-230$ is not offered.)
Additional Major requirements: two of 32 . 312, 32-313, 32-332, 32-426, and 32-427: and one additional Music course.
Other requirements: six non-Music courses (Students planning a teaching career in the secondary schools should take these courses in the same teachable subject area.) (See 5.2.3.)

## REQUIREMENTS-PROGRAM III

Total courses: forty.
Major requirements: thirty-four courses as given below:
History and Literature: six courses, consisting of 32-126, 32-127, 32-236, 32-237, and two additional courses.
Theory: seven courses, consisting of 32112, 32-113, 32-212, 32-213, and the 1.50 credithour courses $32-222,32-223,32-322$, 32-323, 32-422 and 32-423.
Methods and Pedagogy: three (or four) courses, consisting of 32-248, 32-249 (or $32-259$ ), and $32-470$. (Pianists must also take 32-471.)
Performance Studies: eight (or nine) courses, consisting of one course from the series 33-347 to 33-369 (taken six times); plus the corresponding 1.50 credit hour courses in the series 33-317 to 33-339 (taken twice); and the two 1.50 credit courses, $33-393$ and $33-493$. (Pianists and organists also must take the 1.50 credit hour course 33-360 twice.)
Ensembles: three courses, consisting of six 1.50 credit hour courses (one in each of six tems) and including at least two of 33-210, $33-220,33-230$, or 33-310. (33-360 may be substituted if $33-230$ is not offered.)
Additional Major requirements: two of 32 -$312,32-313,32-426$, and $32-427$; plus additional music courses to a total of thirty-four.
Other requirements: six non-Music courses. (Singers must take two courses each of French, German, and Italian.)

## Honours Bachelor of Music Therapy ADMISSION REQUIREMENTS

In addition to meeting the regular requirements for admission to the University, admission to the B.Mus. Th. is conditional upon a successful audition evaluated by faculty members in Music. The audition will consist of:
(a) a theory evaluation test designed to show the nature and extent of the student's aptitude in music theory;
(b) a performance of at least ten minutes' length on the student's major instrument, showing a grasp of a variety of styles.
(c) a personal interview to assess the student's background in working with exceptional people and his or her suitability to pursue a career in music therapy.

Candidates should contact a program advisor in Music for specific requirements in the various performance media. If an accompanist from Music is required, two weeks' prior notice must be given to the Music office, and an accompanist's fee will be charged. Candidates auditioning in Voice or Orchestral Instruments must perform at least one selection with accompaniment.

## OTHER REGULATIONS

Music courses whose middle digit is 0 may not count toward the B.Mus.Th. degree.

## PROGRAM REQUIREMENTS

Total courses: forty.
Major requirements: twenty-seven courses as given below:
History and Literature: two courses, 32-126 and 32-127.
Theory: six courses, consisting of 32-112, 32-113, 32-212, and 32-213; plus the 1.50 credit hour courses $32-222,32-223,32-322$, and 32-323.
Performance Studies: six courses, including one course from the private instruction senies $33-347$ to $33-369$ taken four times; plus one 1.50 credit hour course from the private instruction series 33-317 to $33-339$ taken four times.
Ensembles: two courses, consisting of four 1.50 credit hour courses in each of four terms from 33-210, 33-220, 33-230, 33-240, $33-250,33-260,33-310,33-330$, and 33350.

Music Therapy: seven courses, consisting of 32-120, 32-121, 32-330, 32-331, and 32420; plus four 1.50 credit hour courses, 32 -$340,32-341,32-440$, and $32-441$.

Other Music courses: four courses, consisting of 32-248; two additional Music courses to 6.0 credit hours; and the two 1.50 credit hour courses, 33-111 and 33-213. Students whose major instrument is Voice will substitute the equivalent of 1.50 credit hours in any other Music courses (32- or 33-) for 33-213.
Other requirements:
(a) ten courses in Psychology, consisting of 46-115, 46-116, 46-220, 46-223, 46-224 (or 46-225), 46230, 46-232, 46-233, 46-322, and 46-323;
(b) Biology 55-202;
(c) one of Drama 24-277, 24-284, or 24-377, or Kinesiology 95-374 or 95-391;
(d) one of Nursing 63-241, 63-243, 63-245, 63-247, or 63-249.

## CERTIFICATION

Before applying for certification, graduates of the program normally will complete an internship of one thousand hours at any of the clinical training sites currently approved. Certification as a Music Therapist Accredited (MTA) with the Canadian Association of Music Therapy (CAMT) is accomplished by submitting a record of academic and clinical training to the CAMT.

## Combined B.A. Four-Year Honours Degree Programs

Total courses: forty.
Permission from both Music and the second area of study is required to enrol in this degree program. No audition is required for the degree; however, it is necessary to audition for the required performance and/or ensemble courses and to pass the examinations for 32-112 and 32-222.
Major requirements-Music: se venteen courses consisting of 32-112, 32-113, 32126, and 32-127; plus two 1.50 credit hour courses, 32-222 and 32-223; plus two additional courses from Theory or History and Literature; and at least three, but not more than eight full courses or their equivalent in Performance Studies and/or Ensemble courses, of which no more than eight 1.50 credit hour courses may be in Ensembles;
plus additional Music courses to a total d seventeen.
Music courses whose middle digit is 0 may not count towards this degree.
Major requirements-Other Subject:as prescribed by that area of study.
Other requirements: additional options (fifequired) to a total of forty.

## Diploma In Church Music

Designed primarily for the keyboard playes wishing to direct a church music program Admission by audition. Candidates shouth be able to demonstrate proficiency on thep ano in repertoire equivalent to the Two-Pat Inventions of J.S. Bach, and the Sonats Op. 49 of Beethoven. Candidates wishingh audition on the organ should demonstrak proficiency in repertoire equivalent to the Eight Short Preludes and Fugues of J.S Bach, and the Choral Preludes Op. $122 d$ Brahms (Nos. 2, 3, 6, 8, or 9).
Total courses: twenty.
Required: 32-112, 32-113, 32-212, 32-213 $32-126,32-127,32-248,32-249,32-260$, and $32-261$; plus six 1.50 credit hour courses, 33-213, 33-214, 32-222, 32-223 $32-322$, and 32-323; plus two 1.50 credt hour courses from 33-210, 33-270, and 33 310 ; plus four terms of $33-349$; plus Interourtural Studies 07-222 and 07-224.
As part of the diploma requirements, canddates will participate in a music apprentioes ship program with churches of various denominations. The diploma will culminalk in a performance project, such as a churd service, to be arranged in consultation with a program advisor in Music.

### 3.15.3 COURSE DESCRIPTIONSMUSIC ACADEMIC STUDIES

Not all courses listed will necessarily be ot fered each term.
All courses are three hours a week ( 3.0 credit hours) unless otherwise indicated. All Music courses except those whose middle digit is 0 may require consent of the in structor for enrolment.

## 32-102. Fundamentals of Music I

Study of intervals, scales, hythms, and notation. Practice in reading music and ear training. (May not count toward any Music degree.)
32-103. Fundamentals of Music II
Continued study of music notation with the introduction of elementary harmony. More practice in reading music and ear training. (Prerequisite: 32-102 or consent of the instructor.) (May not count toward any Music degree.)

## 32-104. Basic Musicianship I

An introductory course in sight singing, ear training, and dictation. (May not count toward any Music degree.) ( 1.50 credit hour course.)
32-105. Basic Musicianship II
A continuation of 32-104, which is prerequisite. (May not count toward any Music degree.) ( 1.50 credit hour course.)
32-106. The Enjoyment of Music I
Great composers past and present and their music. (No prerequisites; open to all students in the University.) (May not count toward any Music degree.)

## 32-107. The Enjoyment of Music II

Continuation of $32-106$, which is prerequisite. (May not count toward any Music degree.)

## 32-112. Music Theory I

Examination of basic harmonic, contrapuntal, and formal elements in tonal music. (Admission by examination or consent of the instructor.) (Should be taken concurrently with 32-222.)

## 32-113. Music Theory II

Continuation of $32-112$, which is prerequisite. (Should be taken concurrently with 32-223.)

## 32-114. Materials of Music for Music Theatre I

Basic diatonic materials; their applications at the keyboard to simpler song styles. Transposition and chord symbol interpretation based on written tunes. (Admission by examination and successful completion of the Keyboard Proficiency Requirement.) (Restricted to Music Theatre majors only.)

## 32-115. Materials of Music for Music Theatre II

Continuation of 32-114 with tonal extensions, enriched chord vocabulary, more varied accompaniment patterns and figurations; application at the keyboard to a variety of popular musical styles up to and including the Broadway styles of the midtwentieth century. Improvisation of accompaniments based on orally-dictated tunes. (Prerequisite: 32-114.) (Restricted to Music Theatre majors only.)
32-120. Introduction to Music Therapy A survey of the origins of music therapy from the historic uses of music in healing to pre-sent-day theories of practice in various clinical settings. Music therapy techniques demonstrated.

## 32-121. Skills for Music Therapy

Leadership skills, group management techniques, basic guitar skills for music therapy sessions, and materials for music activities with various ages and populations. Music therapy site observations.(Prerequisite: 32120 or consent of the instructor.)

## 32-126. Music History and Literature I

Musical styles from the Middle Ages to about 1750. (Prerequisite: admission to the B.Mus., B.Mus. Th., or B.M.A. programs or consent of the instructor.)

## 32-127. Music History and Literature II

 Musical styles from about 1750 to the present day. (Prerequisite: 32-126 or consent of the instructor.)
## 32-212. Music Theory III

Examination of more complex harmonic, contrapuntal, and formal elements in tonal music. (Prerequisite: 32-113.) (Should be taken concurrently with 32-322.)

## 32-213. Music Theory IV

Continuation of 32-212, which is prerequisite. (Should be taken concurrently with 32-323.)

## 32-222. Basic Skills I

Intensive drills in ear training, sight singing, dictation, and basic keyboard. (Admission by examination or consent of the instructor.) (Should be taken concurrently with 32-112.)
( 1.50 credit hour course.)

## 32-223. Basic Skills II

Continuation of $32-222$, which is prerequisite. (Should be taken concurrently with 32-113.) (1.50 credit hour course.)
32-226. Studies in Medieval and Renaissance Music
Special studies in the history and literature of Medieval and Renaissance music, to be arranged by the instructor. (Prerequisites: 32126 and 32-127.) (2 lecture hours a week.)

## 32-227. Studies in Baroque Music

Special studies in the history and literature of Baroque music, to be arranged by the instructor. (Prerequisites: 32-126, 32-127.) (2 hours a week.)

## 32-229. String Techniques

Fundamental techniques of string instruments and their applications in teaching beginners.

## 32-236. Performance Literature I

Survey of the literature written for the student's major instrument. (2 lecture hours a week.)

## 32-237. Performance Literature II

Continuation of $32-236$, which is prerequisite. (2 lecture hours a week.)

## 32-239. Woodwind Techniques

Fundamental techniques of woodwind instruments and their application in teaching beginners.

## 32-246. History of Jazz

A study of the origins, forms, and development of jazz. Musical concepts and jazz terminology will be defined. (No prerequisites; open to all students in the University.)

## 32-247. Analysis of Jazz Styles

A stylistic study of major jazz innovators through the analysis of solo transcriptions and recordings. (Prerequisite: consent of the instructor.)

## 32-248. Basic Conducting

Instruction in baton technique and the conducting of choral and instrumental ensembles.

## 32-249. Choral Conducting

Instruction in score preparation and rehearsal techniques for vocal ensembles. (May not be taken concurrently with 32-259.) (Prerequisite: 32-248.)

## 32-255. Vocal Techniques

Introduction to working with children's and adolescent voices. Topics include physioogy of the voice, tonal placement, care of the teenage voice, the boy's changing voics, solo and group singing. (Prerequisite: 33 213, or 33-317, or 33-347.) (2 lecture hous a week.) ( 1.50 credit hour course.)

## 32-259. Instrumental Conducting

Instruction in score preparation and rehears al techniques for instrumental ensembles (May not be taken concurrently with 32-249.) (Prerequisite: 32-248.)

## 32-260. Church Music and Service Playing I

Survey of the hymn and psalm and theirper: formance in the church service; improviss tional skills. (Prerequisite: consent of the instructor.) (2 lecture hours a week.)

## 32-261. Church Music and Service Playing II

Survey and preparation of service music anthems, and organ music for the church service; improvisational skills. (Prerequisite 32-260.) (2 lecture hours a week.)

## 32-269. Percussion Techniques

Fundamental techniques of percussion instruments and their application in teachimg beginners.

## 32-279. Brass Techniques

Fundamental techniques of brass instrments and their application in teaching beginners.

## 32-289. Guitar Techniques for Music Education

Fundamental techniques of guitar playing and their application to teaching beginners Chord charts, rhythm graphs, traditiond note forms, and guitar accompaniment fo individual and group singing. Students mus supply their own instrument. (May not be taken concurrently with 33-111.) (Prerer. uisites: 32-113 and 32-223.)

## 32-312. Twentieth-Century <br> Techniques I

Techniques of musical expression in the twentieth century, such as serialism, eleo tronic, and aleatory music. (2 lecture hours a week.)

## 32-313. Twentieth-Century Techniques II

Continuation of 32-312, which is prerequisite. (2 lecture hours a week.)
32-322. Advanced Skills I
Intensive drills in ear training, sight singing, keyboard harmony, dictation, and improvisation. (Prerequisites: 32-223 and 32-113 and successful completion of the Keyboard Proficiency Requirement.) (Should be taken concurrently with 32-212.) (1.50 credit hour course.)

## 32-323. Advanced Skills II

Continuation of 32-322, which is prerequisite. (Should be taken concurrently with 32-213.) ( 1.50 credit hour course.)

## 32-326. Studies in Classical Music

Special studies in the history and literature of Classical music, to be arranged by the instructor. (Prerequisites: 32-126 and 32127.) (2 lecture hours a week.)

## 32-327. Studies in Romantic Music

Special studies in the history and literature of Romantic music, to be arranged by the instructor. (Prerequisites: 32-126 and 32127.) (2 lecture hours a week.)

## 32-330. Theories of Music Therapy

Study of psychotherapy theories and their relationship to various models of music therapy interventions. Investigation of current research and clinical practice methods. (Prerequisite: 32-121 or consent of the instructor.)

## 32-331. Creative Improvisation in Music Therapy

An examination of improvisational methods of music therapy. Through an experiential process, students explore the therapeutic benefit of music as it relates to sound patterns, movement, drama, and art. Piano improvisation techniques included. (Prerequisites: 32-120 and 32-322, or consent of the instructor.)

## 32-332. Composition

Independent work in musical composition as a means of musical expression. Students will be responsible for composing and supervising the performance of at least one substantial composition during the term. (May
be repeated for credit.) (Prerequisite: consent of instructor.) (2 lecture hours a week.)

## 32-336. History of Music Theatre I

The musical stage from the Renaissance through the early twentieth century, with special emphasis on ballad opera, operetta, and musical comedy. (2 lecture hours a week.)

## 32-337. History of Music Theatre II

Landmark productions of the popular musical stage from the mid-twentieth century to the present; "Broadway" and "off-Broadway"; recent trends. ( 2 lecture hours a week.)

## 32-340. Field Practice I

Supervised observation and practice in selected clinical settings. Assessment, intervention, and evaluation according to appropriate music therapy goals within the given population. (Prerequisites: 32-121 and 33-111.) (Normally 1 lecture hour and 68 practical hours a week.) ( 1.50 credit hour course.)

## 32-341. Field Practice II

Continuation of 32-340, which is prerequisite. ( 1.50 credit hour course.)

## 32-346. World Musics

A survey of musical expressions of various world civilizations, such as African, Asian, Southeast Asian, Latin American, and aboriginal North American cultures. Discussion will focus on musical structure and the role of music in society. (Restricted to Music majors, or with consent of instructor.)

## 32-347. Choral Literature

A study of selected examples of choral music, including mass, motet, anthem, madrigal, and other forms. Differences in modern editions of early music will be examined. (Prerequisites: 32-126 and 32-127.) (2 lecture hours a week.)

## 32-348. Choral Techniques

Ensemble management for choirs. Practical application of rehearsal techniques and score study. Management of budgets, auditions, seating plans, and other aspects of organizing and operating a chorus. (Prerequisites: 32-248 and 32-249.) (2 lecture hours a week.)

32-385. Introduction to Music Education A study of the historical, philosophical, and psychological foundations of music education, and the role of music in the general school curriculum; observation of music teaching in the school classroom. (2 lecture hours a week.)
32-395. Jazz Education Fundamentals
Examination of instructional methods and materials pertinent to directing jazz performing ensembles (stage band, combos, vocal groups) at the secondary school level. Rehearsal techniques and concert planning will be emphasized. ( 1.50 credit hour course.)

## 32-412. Music Theory Seminar I

Two-and three-part species counterpoint. (2 lecture hours a week.)

## 32-413. Music Theory Seminar II

Advanced analysis of tonal music. Relation of analysis to performance. (Prerequisite: 32-412.) (2 lecture hours a week.)

## 32-420. Psychology of Music

A study of the principles underlying the practice of music therapy and musical behaviour. The study of psychological aspects of musical behaviour: psycho-acoustics, music perception, affective and physiological responses to music, music learning, and measurement. (Open to non-Music majors.) (Prerequisite: 32-120 or consent of the instructor.)

## 32-422. Advanced Skills III

Aural recognition of chromatic harmony, non-tonal materials, complex and irregular metres, and large formal structures. Related sight-singing and dictation. Keyboard improvisation in a variety of styles. (Prerequisites: 32-323 and 32-213.) (1.50 credit hour course.)

## 32-423. Advanced Skills IV

Continuation of $32-422$, which is prerequisite. ( 1.50 credit hour course.)

## 32-426. Studies in Twentieth-Century Music

Special studies in the history and literature of twentieth-century music, to be arranged by the instructor. (Prerequisites: 32-126 and 32-127.) (2 lecture hours a week.)

32-427. Studies in Canadian Music
Special studies in the history and literature of Canadian music, to be arranged by the instructor. (Prerequisites: 32-126 and 32 . 127.) (2 lecture hours a week.)

## 32-436. Directed Studies in Music I

Advanced study in a selected area of music. (May be repeated for credit.) (Prerequisite: permission of a program advisor in Music) (2 lecture hours a week.)

## 32-437. Directed Studies in Music II

Continuation of 32-436, which is prerequisite. (May be repeated for credit.) (2 leoture hours a week.)

## 32-440. Field Practice III

Supervised practice in selected clinical settings for the purpose of further concentration within a given setting. The design, implementation, and evaluation of music therapy treatment programs. (Prerequisite: 32-341.) ( 1 lecture hour and 6 to 8 practical hours a week.) ( 1.50 credit hour course.)

## 32-441. Field Practice IV

Continuation of $32-440$, which is prerequisite. ( 1.50 credit hour course.)

## $32-443$. Orchestration

Scoring for small ensembles, large orches tra; problems of transcriptions; score study. (2 lecture hours a week.)

## 32-458. Conducting Seminar I

Advanced studies in choral or orchestral conducting. The student will serve as assistant conductor of an ensemble, with practical experience in rehearsal technique, score study, literature, and stylistic analysis. (Prerequisite: 32-249 or 32-259, and consent of the instructor.)

## 32-459. Conducting Seminar II

Continuation of $32-458$, which is prerequisite.

## 32-470. Performance Pedagogy I

A survey of the evolution of pedagogy; stuof of materials relating to beginning and intermediate levels through the discussion and performance of appropriate repertoire. From year to year, different areas of emphasis may be offered, such as piano, organ, or voice. (May be repeated for credit, provided that the area of emphasis is different.) (Pre-

### 3.15 Music

requisite: consent of the instructor.) (2 lecture hours a week.)

## 32-471. Performance Pedagogy II

Acontinuation of 32-470, with particular emphasis on the intermediate and advanced levels through the discussion and performance of appropriate repertoire. (Prerequisite: 32-470.) (2 lecture hours a week.)

## 32-472. Jazz Arranging and Orchestration I

Introduction to basic melodic, harmonic, and mythmic considerations in jazz arranging. (Prerequisite: 32-112 or consent of the instructor.)

## 32-473. Jazz Arranging and Orchestration II

Continuation of $32-472$ which is prerequisite. Performance of student projects by the Jazz Ensemble.

## 32-484. Music Education in the Elementary School

A comparative study of such approaches to music learning as Orff, Kodaly, Dalcroze, and Suzuki; review of available curriculum materials. (Observations and instructional laboratory hours.) (Prerequisite: 32-385.)

## 32-485. Music Education Seminar Elementary/ Secondary

A study of recent trends in curriculum design; practical aspects of ensemble management and the development of comprehensive musicianship. (Observations and instructional laboratory hours.) (Prerequisite: 32-484.)

### 3.15.4 COURSE DESCRIPTIONSMUSIC PERFORMANCE STUDIES

All Performance Studies courses except 33 270 are open by audition only.
For courses in Private Instruction, see "Areas of Study-Performance", 3.15.3.

## 33-111. Guitar Techniques for Music Therapy

Basic techniques for use with music groups. Chord charts, rhythm graphs, traditional note forms, and guitar accompaniment for individual and group singing. Students must supply their own instrument. (2 hours a
week.) ( 1.50 credit hour course.) (May not be taken concurrently with 32-289.) (Prerequisites: 32-113 and 32-223.)

## 33-112. Introduction to Guitar Techniques II

A continuation of $33-111$, which is prerequisite. Basic folk accompaniments, basic chord forms, and jazz accompanying will be introduced. (2 hours a week.) ( 1.50 credit hour course.)

## 33-210. University Singers

Admission by audition. Performance of literature of various styles from all periods. (Normally 4 hours a week.) (May be repeated for credit.) ( 1.50 credit hour course.)

## 33-213. Class Voice I

Instruction in singing fundamentals and repertoire for students who are not voice majors. (Admission by audition.) (Prerequisites: 32-103 and 32-105, or consent of the instructor.) (2 lecture hours a week.) (1.50 credit hour course.)

## 33-214. Class Voice II

Continuation of 33-213, which is prerequisite. (2 lecture hours a week.) ( 1.50 credit hour course.)

## 33-220. University Wind Ensemble

Admission by audition. Performance of major works of the band and wind ensemble literature by groups of various sizes. Performances at University convocations, high school assemblies, and University concerts. (Normally 4 hours a week.) (May be repeated for credit.) ( 1.50 credit hour course.)

## 33-230. University Orchestra

Admission by audition. Performance of works from the orchestral repertoire. (Normally 4 hours a week.) (May be repeated for credit.) ( 1.50 credit hour course.)

## 33-240. Jazz Ensemble

Admission by audition. Performance of works arranged for standard jazz band instrumentation. (Normally 4 hours a week.) (May be repeated for credit.) ( 1.50 credit hour course.)

## 33-260. Community Orchestra

Membership by audition. Rehearsals one evening a week; normally one concert given

### 3.15 Music

each term. (May be repeated for credit.) (Normally 2.5 hours a week.) ( 1.50 credit hour course.)

## 33-270. Community Choir

Membership open to everyone without audition. Rehearsals one evening a week, and normally one concert given during the term. (Normally 2.5 hours a week.) (May not count toward the B.Mus. degree.) (May be repeated for credit.) ( 1.50 credit hour course.)

## 33-310. Chamber Choir

Admission by audition; limited membership. Selected literature suitable for performance by a small choir. (Prerequisite: 2 terms of 33 210, or 33-220, or 33-230, or consent of instructor.) (May be repeated for credit.) (1.50 credit hour course.) (Normally 4 hours week.)

## 33-330. Chamber Music

Rehearsal, discussion and performance of chamber music literature. Instrumentation according to the demands of each term's repertoire. (Admission by audition and consent of the instructor.) (May be repeated for credit.) ( 1.50 credit hour course.) (Normally 2 hours a week.)

## 33-350. Collegium Musicum

Study and performance of music of the twelfth to seventeenth centuries. (Admission by audition.) (Prerequisite: 2 terms of 33 210, or 33-220, or 33-230, or consent of instructor.) (May be repeated for credit.) (1.50 credit hour course.) (Normally 2 hours a week.)

## 33-360. Accompanying

Accompaniment of solo vocal and instrumental repertoire in various styles; development of skills in sight reading and transposition. (Admission by audition.) (May be repeated for credit.) (Prerequisite: two terms of 33-348, or consent of the instructor.) (Normally 1 to 1.5 hours a week.) ( 1.50 credit hour course.)

## 33-380. Music Theatre Instrumental Ensemble

Accompaniment of rehearsals and performances of music theatre productions presented by the University of Windsor. Enrolment is limited to the instrumentation necessary for the production at hand (nor-
mally one production per term), including rehearsal pianists. (Admission by audition.) (May be taken four times for credit.) (1.50 credit hour course.) (Normally 3 hours a week.)

## 33-393. Third-Year Recital

Public presentation of a recital of one hour in playing time on the student's major instrument. Repertoire performed must show a variety of styles and periods. (Restricted only to students in Program Ill of the B. Mus. degree.) ( 1.50 credit hour course.)

## 33-414. Music Theatre WorkshopWorks in Progress

The study and presentation of scenes and/or complete productions drawn from the spectrum of works written for the musical stage; team taught. (May be repeated for credit.) (Prerequisite: four terms of voice study, or consent of the instructor.) (Restricted only to majors in the B.F.A. Music Theatre program.)

## 33-491. Graduation Project

Public presentation of a topic in the student's individual area of emphasis. The projed may take the form of a major research papet, concert of original compositions, or otherappropriate vehicle. (Restricted only to students in Programs I and II of the B. Mus. degree, with permission of a program advisor in Music.) ( 1.50 credit hour course.)

## 33-493. Graduation Recital

Same as 33-393, which is prerequisite. (Restricted only to students in Program Ill of the B. Mus. degree.) ( 1.50 credit hour course.)

## 33-495. Graduation Recital

Public presentation of a recital of at least forty minutes in playing time on the student's major instrument. Repertoire performed must show a variety of styles and periods. (Restricted only to students in Programs। and II of the B. Mus. degree, with permission of a program advisor in Music.) ( 1.50 credt hour course.)

### 3.16 Philosophy

(Ext. 2317)

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Pinto, Robert C.; B.A., M.A., Ph.D. (Toronto)-1963.
Nielsen, Harry A.; A.B. (Rutgers), M.A. (Connecticut), Ph.D. (Nebraska)-1968.
Westra, Laura; B.A. (York), M.A., Ph.D. (Toronto)-1990.

## University Professor

Johnson, Ralph Henry; B.A. (Xavier), M.A., Ph.D. (Notre Dame)-1966.

## Professors

Blair, John Anthony; B.A. (McGill), M.A. (Michigan)-1967. (Interim Head of the Department)
Cook, Deborah; B.A., M.A. (Ottawa), Doct. 3e cycle (Sorbonne)-1989.

## Associate Professor

Fisher, Linda J.; B.A. (Wilfrid Laurier), M.A. (Ottawa), Ph.D. (Pennsylvania State)1992.

## Assistant Professor

Hansen, Hans V.; B.A. (Lakehead), M.A. (Manitoba), M.A., Ph.D. (Wayne State)2001.

## Sessional Lecturer

Parr, Katherine E.; B.A., M.A., M.Ed. (Wind-sor)-1982.

## Cross-Appointment

Conklin, William E.; B.A. (Toronto), M.Sc. (L.S.E., London), LL.B. (Toronto), LL.M. (Columbia), Ph.D. (York), of Osgoode Hall, Barrister-at-Law-1977.

### 3.16.1 PROGRAM REGULATIONS

Academic Advising: All students who are Philosophy Majors, or who are in General Philosophy, or who intend to declare a Minor in Philosophy, will be assigned an academic advisor. Students should plan their programs in consultation with their advisors prior to course selection each term. Stu-
dents planning to take a Philosophy course as an option are welcome to consult the instructor.
Course Cycling: In planning their course selections, students should bear in mind that some (mainly 100 -level) Philosophy courses are offered every term, others every other term, some once a year, some every third term, and some every other year.

### 3.16.2 PROGRAMS OF STUDY

Minor, general degree, four-year Honours degree, and combined four-year Honours degree programs are available in philosophy.

## Areas of Study

Most philosophy courses are intended for students majoring in other subjects who desire a well-rounded liberal arts education, as well as for philosophy majors. Students who might want to take more than one philosophy course are advised to check the prerequisites of courses numbered in the 200s and $300 \mathrm{~s} .34-110$ is a good introduction to philosophy in general.
Requirements for programs in philosophy make reference to the following Core Groups of courses:
Group A: Introduction to Philosophy:34-110.
Group B: Classical Foundations of Philosophy: 34-270, 34-271.
Group C: Foundations of Modern Philosophy: 34-274, 34-275, 34-376.
Group D: Ethics: 34-129, 34-221.
Group E: Logic: 34-260, 34-261, 34-262.
Group F: Central Problems of Philosophy: 34-250, 34-350.
Group G: Senior Seminar: 34-411.
Group H: Honours Seminar: 34-491.

## Minor in Philosophy

Required: a minimum of six Philosophy courses, with no more than two at the 100 level, including 34-110 and at least one from either Core Group B or C.

## General Philosophy

Total courses: thirty.
Major requirements: ten Philosophy courses, with no more than two at the 100 level, including at least one from each of Core Groups A through F.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science, excluding Philosophy.

Other requirements:
(a) eight other courses from Arts, Languages, Social Sciences, or Science, excluding Philosophy;
(b) six more courses from any area of study including Philosophy.

## Honours Philosophy

Total courses: forty.
Major requirements: twenty Philosophy courses, with no more than two at the 100 level, including at least one from each of Core Groups A through H.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science, excluding Philosophy.

Other requirements:
(a) four other courses from Arts, Languages, Social Sciences, or Science, including Philosophy;
(b) four more courses from Arts, Languages, Social Sciences, or Science, excluding Philosophy;
(c) six other courses from any area of study, excluding Philosophy.

## Combined Honours Programs

Total courses: forty.
Major requirements-Philosophy: sixteen Philosophy courses, with no more than two at the 100 -level, including at least one from each of Core Groups A through H .
Major requirements-Other subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science, excluding Philosophy.

Other requirements: additional options (ifrequired) to a total of forty courses.

## M.A. Degree in Philosophy

See the Graduate Calendar for details about the M.A. program in Philosophy.

### 3.16.3 COURSE DESCRIPTIONS

All courses listed are three hours a week unless otherwise indicated. Not all courses are offered each term or each academic year.

## 34-110. Introduction to Western Philosophy

An introduction to philosophy through the study of major figures and movements in the Western philosophical tradition. The figures and themes selected for any given year will be chosen by the instructor.

## 34-112. Philosophy and Human Nature

What is human nature? How do we think of ourselves as human beings? The course will examine several of the principal theories of human nature that have been put forward in Western philosophy.

## 34-129. Contemporary Moral Issues

A critical examination of arguments about controversial moral issues. Readings will be chosen by the instructor on issues connected with one or several of such areas as: biomedical ethics, euthanasia, suicide, environmental ethics, the treatment of animals,
war and violence, pornography and censorship.
34-130. Philosophy and Popular Culture A philosophical inquiry into some of the more important cultural forms and phenomena of the late twentieth century. Topics may include rock music, television, or virtual reality, among others.

## 34-160. Reasoning Skills

An explanation of, and practice in, the basic knowledge, skills and attitudes which are essential components of reasoning well.

## 34-221. Introduction to Ethics

Asurvey of the main contending positions on basic questions of ethics: Are all moral values and norms subjective or objective, relative or absolute? What makes right actions right? What has intrinsic value? What is the good life for human beings?

## 34-222. Social and Political Philosophy

An examination of some of the main contending theories about the nature of society and the state, or of some of the central controversies in social and political theory. (Prerequisite: Semester 3 or above standing.)

## 34-224. Business Ethics

An introduction to some central ethical notions (e.g., justice, the common good, moral vs. legal obligation); application of these issues and concepts to cases drawn from the experiences of business men and women (concerned with such issues as corporate responsibility, conflict of interest, honesty in advertising, preferential hiring, corporate responsibility for environmental externalities).

## 34-226. Law, Punishment and Morality

An introduction to the philosophical issues related to understanding the nature of law and legal obligation, the relation between law and morality, and the purpose of punishment. The theoretical points and distinctions will be illustrated by their applications to particular current issues. (Prerequisite: Semester 3 or above standing.)

## 34-227. Environmental Ethics

Environmental concerns about the welfare of planet earth have been addressed by philosophers in a variety of ways. Some have
argued that traditional ethical theories (utilitarianism, eudaemonism, contractarianism, formalism) can be extended to provide guiding principles for the solution of environmental problems. Others have argued that only a new approach to philosophical ethics can yield the requisite principles. Both approaches, as well as the range of theoretical and practical issues of interest to theorist and concerned professional alike, will be represented in this course.
34-228. Technology and Human Values An exploration of the philosophically important ethical concepts of human nature, freedom, progress and moral responsibility as these relate to advances in technology. Reading and discussion of case studies dealing with the impact of civil, industrial, military and medical projects on human safety, morale and dignity as well as resources and natural beauty. Topical areas include a wide range, such as the disposal of toxic material and the moral limits of research in biotechnology and transgenics.

## 34-230. Philosophical Themes in Literature

Either a selection of works of literature will be studied with a view to the philosophical themes and ideas expressed in them, or philosophical treatments of literature will be studied, or both. The texts chosen will vary from year to year. The course may also consider the use of different literary genres in which philosophy itself is presented-for example, poetry, the popular essay, and the philosophical dialogue. (Prerequisite: Semester 3 or above standing.)

## 34-236. Feminism and Philosophy

An introduction to the ideas and issues of contemporary feminism and feminist theory. The course combines a study of historical and contemporary theories of feminism with an examination of key themes in philosophical feminism and feminist theory, such as sexism and oppression, theories of women, sex, gender, language, and feminist identity, methodology, and politics. (Prerequisite: Semester 3 or above standing.)

## 34-240. Philosophy of Religion

An examination of the philosophical problems involved with religious belief and lan-
guage. Can the existence of God be proven? Can the non-existence of God be proven? Can claims to religious knowledge be legitimized? Is there a unique logic of religious language that is cognitively meaningful? Is there any basis for claims about life after death? What is the nature of faith? These are the sorts of questions which are dealt with in this course. (Prerequisite: Semester 3 or above standing.)

## 34-242. Aesthetics

Aesthetics is concerned with problems which arise in the appreciation of objects which are deemed to have aesthetic value. Problems which may be raised in this course include the nature of aesthetic experience and aesthetic objects such as works of art and nature, as well as problems related to aesthetic value and judgment. (Prerequisite: Semester 3 or above standing.)

## 34-250. Metaphysics

An examination of basic and very general questions about the nature of reality. What kinds of things are real, and what distinguishes the real from the ideal, or the real from the illusory? Are there abstract entities, such as numbers? What is the nature of necessity and possibility, of essence and existence? Both traditional and contemporary approaches to these questions will be considered in this course. (Prerequisite: Semester 3 or above standing.)

## 34-252. Existentialism

A study of the views of some of the major existentialists. Figures studied may include Kierkegaard, Nietzsche, Sartre, MerleauPonty, Camus and Jaspers. (Prerequisite: Semester 3 or above standing.)

## 34-253. Philosophy of Science

What is a scientific explanation? A scientific theory? Do theories really describe reality? Or are they merely convenient tools for determining future observation? Does anything exist in the real world of the scientist besides observations? How does one distinguish between science and pseudo-science? This course includes an examination of the logical empiricist conception of science, and one or two recent criticisms of it. (Prerequisite: Semester 3 or above standing.)

## 34-260. Informal Logic: Fallacy

The objective is to develop the ability to discriminate between good and bad arguments found in everyday settings, using the concept of fallacy. A variety of kinds of fallacy are explained, and the skill of identifying themis taught. The basic tools for analyzing arguments are presented and put to use. Material for analysis is drawn from newspapers, current periodicals, and other sources of actual arguments. (Prerequisite: Semester3or above standing.)

## 34-261. Informal Logic: Argumentation

 The objective is to develop the ability to analyze and evaluate extended arguments found in the public media, books and articles, and to construct a well-argued case. (Prerequisite: 34-260, or 34-160 and consent of the instructor, or consent of the instructor.)
## 34-262. Symbolic Logic

The course covers propositional logic as well as an introduction to the basic concepts of predicate logic. Topics include the construction of symbolic representation of sentences in natural language, semantic methods for evaluating symbolic formulas, and methods of constructing deductions or proofs. (Prerequisite: Semester 3 or above standing.)

## 34-270. Greek Philosophy: Plato

Early Greek philosophy with emphasis on Socrates and Plato, with readinge from a cross-section of early Greek philosophers and from Plato's Dialogues. (Prerequisites: Semester 3 or above standing and one prior Philosophy course.)

## 34-271. Greek Philosophy: Aristotle

Later Greek philosophy to the close of classical antiquity with emphasis on Aristote, with readings from Aristotte, the Epicureans, the Stoics and Plotinus. (Prerequisites: Semester 3 or above standing and one prior Philosophy course.)

## 34-272. Medieval Philosophy

Philosophy in medieval Europe from the fourth through the fourteenth centuries. The course will deal with a sele ction of topics and philosophical thinkers (the selection may
vary, depending on the instructor). Topics may include: being, knowledge and truth, logic and the problem of universals, the "ontological" argument for the existence of God, divine foreknowledge and human freedom, faith and reason, Platonism and Aristotelianism in medieval philosophy. Philosophical thinkers may include: Augustine, Boethius, John Scotus Erigena, Anselm, Abelard, Avicenna, Averroes, Moses Maimonides, Bonaventure, Thomas Aquinas, John Duns Scotus, William of Ockham. (Prerequisites: Semester 3 or above standing and one prior Philosophy course.)
34-274. Early Modern Philosophy: The Seventeenth Century
An examination of major themes of European thought at the time of the scientific revolution. These may include: the overthrow of the Medieval world view, the revival of Epicureanism, empiricism vs. rationalism, mechanical world view, universal doubt and the grounds of certainty, modern subjectivity, dualism and its critics, God and the world. The views of Descartes will be explored along with the views of some of the following figures: Copernicus, Galileo, Bacon, Hobbes, Malebranche, Spinoza, Leibnitz and Boyle. (Prerequisites: Semester 3 or above standing and one prior Philosophy course.)

## 34-275. Early Modern Philosophy: The Eighteenth Century

The philosophy of the enlightenment. Themes discussed may include the following: toleration and the origins of liberal political theory, popular sovereignty, the rationality of religion, the nature of a person, idealism vs. realism, materialism, the nature of a causation, the origin of ideas, scepticism and deism. Along with some of the major figures such as Hume, Locke and Berkeley, the following thinkers may also be taught: Bayle, La Mettrie, Voltaire, Rousseau and Diderot. (Prerequisites: Semester 3 or above standing and one prior Philosophy course.)

## 34-280-289.Special Topics

Special Topics courses will be offered occasionally, as resources allow, to meet a demonstrated academic need, where that need cannot be satisfied by any of the regular course offerings. Interested students should
inquire in the Philosophy area office. (Prerequisites: Semester 3 or above standing and permission of an advisor in Philosophy.)

## 34-342. Philosophy of Education

A critical examination of theories about the nature, goals and values of education. The approach of the course may be historical, contemporary or a combination. (Prerequisites: Semester 3 or above standing and at least one prior Philosophy course, or consent of the instructor.)

## 34-350. Theory of Knowledge

The nature of knowledge. Topics may include the relation of knowledge to experience, the bases of rationality, the significance of scepticism. (Prerequisite: 34110 or 34-112, or at least one 200-level Philosophy course, or consent of the instructor.)

## 34-353. The Nature of Mind

An examination of contemporary views about the nature of mind and its relation to the body. What is meant by "mind"? What is the essential property of mind? Is mind an independent entity or just a property of the body? Is talk of minds reducible to talk about brains or to talk about human behaviour? Can animals think? Can computers think? Various philosophical positions on such questions are studied critically. (Prerequisite: 34-110 or 34-112, or at least one 200level Philosophy course, or consent of the instructor.)

## 34-354. Phenomenology

Phenomenology is the systematic study of the nature and structure of conscious experience. This course traces the history and thematic development of the phenomenological movement through an examination of key ideas and themes as expressed in the work of thinkers such as Husserl, Heidegger, Sartre and MerleauPonty. (Prerequisite: 34-110 or 34-112, or at least one 200-level Philosophy course, or consent of the instructor.)

## 34-355. Post-structuralist Theory

Philosophers studied in this course may include Derrida, Foucault, Lyotard, Deleuze and Guattari. (Prerequisite: $34-110$ or 34112 , or at least one 200-level Philosophy course, or consent of the instructor.)

### 3.16 Philosophy

## 34-360. Argumentation Theory

Topics may include: the nature and uses of argument; the evaluation of argument; arguments and argumentation; the relations between argument and rhetoric, logic, and pragmatics; linguistic theories of argument; ethics and epistemology related to argument; the role of argument in philosophy. (Prerequisite: 34-260 or 34-261, or consent of the instructor.)

## 34-372. Twentieth-Century British Philosophy

A study of significant developments in recent British thought in this century, as embodied in key works by figures such as Russell, Moore, Wittgenstein, and some contemporary analytic philosophers. (Prerequisite: 34 110, Or 34-112, or at least one 200-level Philosophy course, or permission of instructor.)

## 34-373. Twentieth-Century American Philosophy

A study of major thinkers who shaped recent American thought, with emphasis on the development of pragmatism at the hands of Peirce, James, and Dewey, and the works of recent analytic philosophers such as Quine and Carnap. (Prerequisite: 34-110 or 34112, or at least one 200-level Philosophy course, or consent of the instructor.)

## 34-374. Twentieth-Century French Philosophy

A study of significant developments in recent French thought as found in Bergson, Sartre, Merleau-Ponty, Bataille, and Levi-Strauss, for example. (Prerequisite: 34-110 or 34112, or at least one 200-level Philosophy course, or consent of the instructor.)

## 34-375. Twentieth-Century German Philosophy

Significant developments in German philosophy in the twentieth century will be examined. Portions of the course may be devoted to Husserl (the founder of the phenomenological school), Heidegger (a seminal figure in existentialism), Gadamer (a key figure in the development of hermeneutics), Critical Theory (a Freudian and Marxist approach to social and economic issues), and second-generation critical theorists such as Habermas. (Prerequisite: 34-100 or 34-112,
or one 200-level Philosophy course, or per mission of instructor.)
34-376. Kant
A study of late eighteenth century philose phy, centred on the epistemological and ethical writings of Immanuel Kant. (Preren uisite: 34-110 or 34-112, or at least one 200level Philosophy course, or consent of the instructor.)
34-377. Hegel and German Idealism
A study of early 19th century philosophy cern tred on the idealism of G.W.F. Hegel, foous ing on such problems as the nature of the dialectic, the notion of absolute spiriti, and the Hegelian conception of philosophy. (Pie requisite: 34-110 or 34-112, or at least one 200-level Philosophy course, or consent d the instructor.)
34-378. Nineteenth Century Philosophy Various nineteenth century thinkers maybe studied in this course including Kierkegaard and Nietzsche, but also Dilthey, Schopenhauer, Comte, Mill, and others. (Preree uisite: 34-110 or 34-112, or at least one 200-level Philosophy course, or consent d the instructor.)

## 34-382. Philosophy of History

An exploration of the concept of history from a philosophical viewpoint. Topics include speculative approaches, critical or analyic perspectives, historical explanation and objectivity, the individual, and affinities be tween the work of philosophers and historians.
34-383. Language, Meaning, and Realify An examination of philosophical issues anis ing from the attempt to understand the re. ture of language. The central topics to be studied are meaning and interpretation. The issues may include: theories of meaningand reference; theories of interpretation of textis (including hermeneutics); and the relationship between language and the world.
34-400 to 34-410. Senior Seminars
Senior seminars are the undergraduate sec tions of M.A. courses. (Normally open onlyb Philosophy majors in the final year of thet program. Consent of the instructor is te quired. Consult a program advisor duringthe term preceding planned registration.)

## 34-411. Methods of Philosophy

A study of major approaches to philosophical analysis and interpretation, and to some of the technical aspects of current philosophical writing and research. The course will cover current English-language (Canada, U.S., Britain, Australia, New Zealand) and European philosophical styles. There will be practice in the application of some of these approaches.

## 34-491. Honours Seminar

The aim of the seminar is to give students a solid historical background in a given area of philosophy (e.g. ethics, epistemology, metaphysics). A philosophical theme is traced through a number of key figures in the history of philosophy. (Open only to four-year Honours in Philosophy students in their final year.)

### 3.17 Political Science

(Ext. 2348)

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Nelson, Ralph Carl; B.A., M.A. (DePaul), Ph.D. (Notre Dame)-1961.
Wagenberg, Ronald H.; B.A., M.A. (Assumption), Ph.D. (London)-1963.
Briggs, E. Donald; B.A. (New Brunswick), Ph.D. (London).-1963.
Wurfel, David; B.A. (San Diego), M.A. (California), Ph.D. (Comell)-1968.
Keenleyside, Terence A.; B.A. (Toronto), Ph.D. (London)-1971.

## University Professor

Soderlund, Walter C.; B.A. (Connecticut), M.A., Ph.D. (Michigan)-1968. (Head of the Department)

## Professors

Brown-John, C. Lloyd; B.A. (British Columbia), M.A., Ph.D. (Toronto)-1968.
Stebelsky, lhor; B.A., M.A. (Toronto), Ph.D. (Washington)-1968
Amore, Roy C.; B.A. (Ohio), B.D. (Drew), Ph.D. (Columbia)-1970.
Romsa, Gerald H.; B.Sc. (Manitoba), M.A. (Waterloo), Ph.D. (Florida), M.C.I.P.-1970
Brooks, Stephen; B.A., M.A. (Windsor), Ph.D. (Carleton)-1985.

## Associate Professors

Lee, Martha; B.A., M.A. (Calgary), Ph.D. (Syracuse)-1992.
Maclvor, Heather; B.A. (Dalhousie/King's), M.A. (Queen's), M.Sc. (London), Ph.D. (Queen's)-1992.
Assistant Professors
Spears, lan S.; B. Ph.E. (Toronto), M.A. (Queen's), Ph.D. (McGill)-2000.
Sutcliffe, John; M.A. (Edinburgh), M.A. (Calgary), Ph.D. (Cambridge)-2000.
Miljan, Lydia; B.A., M.A., Ph.D. (Calgary)2001.

Richter, Andrew; B.A., M.A. (Carleton), Ph.D. (York)-2001.

## Adjunct Professors

Burton, Bruce Edward; B.A., M.A. (Oxford), M.Soc.Sc. (Hague)-1966.

Pawley, Howard; B.A. (Winnipeg), LL.B. (Manitoba), LL.D. (Windsor), Q.C., P.C.1991.

## Adjunct Associate Professors

Price, Trevor; B.Sc. (London School of Economics), M.A. (Windsor), Ph.D. (Queen's)1968.

Krause, Robert M.; B.A., M.A. (Windsor)1970.

Gecelovsky, Paul; B.A., M.A. (Windsor), Ph.D. (Alberta)-2000.

### 3.17.1 PROGRAMS OF STUDY

Minor, general degree, four-year Honours degree, and combined four-year Honours degree are available in Political Science.

## Minor in Political Science

(a) 45-100;
(b) one of 45-130 or 45-160;
(c) four Political Science courses at the 200 level or above.

## General Political Science

Total courses: thirty.
Major requirements: twelve courses, including 45-100, 45-130, and 45-160; plus one of 45-201, 45-211, 45-212, 45-213, 45-215, 45-220, 45-313, 45-314, and 45-320 (or 45321). (Students interested in switching to a Political Science four-year Honours degree should take 02-250, 45-275, and two political theory courses from 45-251, 45-252, 45351, or 45-352.)
Option requirements (see 2.4.14 for subject areas): eight courses, including:
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements:
(a) four courses from any area of study, including Political Scienos (Students interested in a Politica Science four-year Honours de gree should take 41-110 and 41. 111.);
(b) six courses from any area of stud, excluding Political Science.

## Honours Political Science

Total courses: forty.
Major requirements: nineteen courses, in cluding 45-100, 45-130, 45-160, and 45 . 275; and two of 45-201, 45-211, 45-212 45-213, 45-215, 45-220, 45-309, 45-313 45-314, 45-320 and 45-321; plus two of 45251, 45-252, 45-351, and 45-352; and twood 45-232, 45-237, 45-239, 45-241, 45-244 45-346, 45-365, and 45-383; plus two of $45-$ 262, 45-264, 45-265, 45-266, 45-268, $45-$ 360, 45-361, 45-363, 45-364, 45-366, and 45-369; seven additional courses, three d which are to be at the 400 level.
Other requirements (see 2.4.14 for subjed areas):
(a) 02-250, 41-110, and 41-111;
(b) six courses from Sociology, Ar thropology, Communication Studies, Geography. History and Psychology;
(c) two courses from Arts, Languages or Science;
(d) four courses from any area of study, including Political Science;
(e) six courses from any area of study, excluding Political Science. (Al least two of 41-231, 41-232, 41283 , and 41-284 are strongly reo ommended.)

## Combined Honours Programs

Total courses: forty:
Major requirements-Political Science:ffl teen courses, including:
(a) 45-100, 45-130, 45-160, and 45. 275;

### 3.17 Political Science

(b) one of 45-201, 45-211, 45-212, 45-213, 45-215, 45-220, 45-313, 45-314, 45-320, or 45-321;
(c) two of 45-251, 45-252, 45-351, 45352;
(d) eight additional courses of which at least three must be at the 400 level
(e) An introductory statistics course (02-250 or the equivalent).

Major requirements-Other Area of Study: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements: additional options (if required) to a total of forty.

### 3.17.2 COURSE DESCRIPTIONS

Political Science 45-100, 45-130, and 45160 are required of all general and four-year Honours students. It is recommended that these be taken in the first year or as corequisite with 200 -level courses. Four-year Honours students are advised where possible to complete 02-250 and 45-275 during their second year. Non-majors wishing to do particular courses as options may do so except where specific prerequisites are stated. Not all courses will necessarily be offered each year. All courses are three hours a week unless otherwise indicated.

## 45-100. Introduction to Canadian Government and Politics

An introduction to the politics and government of Canada. The course will focus on political culture, the constitution, federalism, the executive, parliament, public service, courts, political parties, interest groups, and elections. (3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 45-130. Comparative Politics in a Changing World

Introduces students to issues such as democracy, authoritarianism, nationalism, political culture, and how political power is organized. The course focuses on the democratic states of the west, but also examines non-democratic states such as China and the transitional democracies of Eastern Europe. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## 45-160. Issues in World Politics

An examination of competing perspectives on international relations and of such critical themes as power, security, war, imperialism, nationalism, interdependence, development and underdevelopment, human rights, environmental concems, and the quest for a new world order. ( 3 lecture hours or 2 lecture hours, 1 tutorial hour a week.)

## $45-201$. Current Issues in Canadian Politics

An examination of one or more current issues in Canadian politics, for example, energy and resources, the environment, native peoples, aging, women's rights, urban problems, and health care.

## 45-211. Women and Politics

An introduction to the principal themes in the study of women in Canadian politics. Topics may include: feminist theory, women in Canadian political institutions, the status of women in the Canadian economy, and gender equality rights in the Charter.

## 45-212. Environmental Policy and Politics

The course examines the domestic and intemational context of environmental policymaking in Canada. Topics examined may include global warming, Great Lakes pollution, and endangered species.

## 45-213. Public Opinion, Mass Media and Canadian Democracy

An evaluation of the relationship between public opinion and democratic politics, how opinions, beliefs and attitudes are shaped by the family, educational system, peer groups, and in particular, mass media. Particular attention will be devoted to the role of the mass
media in influencing public opinion and public policy.

## 45-214. Legal Process in Canada

An introduction to the legal system in Canada, including the sources of Canadian law, the general concepts of constitutional and administrative law, the court structure, and the place of the law and the courts in the community. (Also offered as Law 99-110.)

## 45-215. Urban Government and Politics

 An examination of structures of local government and the major elements of the urban political process, and the impact of urbanization on politics at federal, provincial, and municipal levels. (Prerequisite: 45-100 or consent of instructor.)
## 45-220. Introduction to Public Administration

An introductory examination of the major developments in private and public administrative and management theory and practice. Includes institutional structure, crown corporations, regulatory agencies, personnel, and financial management. Both federal and provincial problems are examine d. (Prerequisite: 45-100 or consent of instructor.)

## 45-221. Canadian Public Administration and Policy

An introduction to the processes of public policy formation in Canada. Includes an analysis of political/bureaucratic relationships, decision making theory, and the role of interest groups in the context of selected contemporary policy issues. (Prerequisite: 45-220 or consent of instructor.)

## 45-222. Administrative Law and Professional Ethics

An introduction to the basis and exercise of administrative discretion by public servants, including law and judicial review. Includes a review of the role of professional ethics as a guide to public administrative behaviour. (Prerequisite: $45-220$ or consent of instructor.)

## 45-232. Government and Politics of the United States

The organization and structure of national government in the United States, with emphasis upon congressionalexecutive rela-
tionships, political parties, and the electros process.

## 45-237. Political Geography of Russia and the Former Soviet Republics

An overview of the physical, cultural, histore cal, and political forces shaping the region and aspects of internal and internations politics in the region. (Also offered as Geog. raphy 42-312.) (3 lecture hours a week.)

## 45-239. Political Change in Latin America and the Caribbean

An examination of political life in Latin Ame: ica and the Caribbean focusing on pattems of change in selected countries.

## 45-241. Contemporary African Politics

Characteristic domestic and internationd problems of African states south of the $S_{2}$. hara, including resource scarcity, ethnicd. versity, political stability, and relations with the Great Powers.

## 45-244. Government and Politics in Europe

Examines contemporary issues such 35 democratic development, nationalism, and regionalism, immigration and racism, the status of women, social welfare programs and the consolidation and expansion of the European Union.

## 45-251. Classical Political Thought

An introduction to the history of politiced thought from the ancient Greeks to the end of the Middle Ages. Topics may include hr man nature, justice, natural law, and the fe: lationship between Church and State.

## 45-252. Modern Political Thought

Toward the new science of politics from Me. chiavelli to Rousseau and the French Revolution.

## 45-260. Politics, History, and Asian Religions

An introduction to Hinduism, Sikhism Jainism, Buddhism, Taoism, Confucianism and Shinto, with attention to their role in his tory and politics. (Also offered as Oriented Studies 10-317.)

45-261. Politics, History, and Western Religions
An introduction to Judaism, Zoroastrianism, Christianity, Islam, and BaHai, with attention to their role in history and politics.

## 45-262. The Making of Foreign Policy

 The international objectives of states, domestic and external influences on policy making, and the processes of decision making. (Prerequisite: 45-160 or consent of instructor.)
## 45-264. Introduction to Canadian Foreign Policy

An overview of the formulation and trends of Canadian foreign policy from World War I to the present, together with an examination of the domestic and external determinants of Canadian foreign policy and of the foreign policy making process. (Prerequisite: 45100, or 45-160, or consent of instructor.)

## 45-265. Major Themes of Canadian Foreign Policy.

An exploration of the major elements of Ca nadian foreign policy, including Canadian relations with the United States, Europe, Asia, Latin America, Africa, and the Middle East, and of Canadian policy with respect to such matters as developmental assistance, delence and arms control, the United Nations, and the Commonwealth. (Prerequisite: 45264 or consent of instructor.)

## 45-266. The Politics of the European Union

Examines the development and operation of the European Union. Key issues on the agenda of the European Union are examined, including: the introduction of the single currency; the development of a common foreign and security policy; and the possible enlargement of the European Union. The extent to which the European Union challenges existing state structures is examined thoughout the course.

## 45-268. International Organizations

An introduction to the problems and possibilifies of international co-operation and global governance among states and nonstate actors. The course will provide a survey of various international organizations.

These may include the United Nations, NATO, the European Union, and NAFTA. The role of non-governmental organizations in world politics is also examined. (Prerequisite: 45-160 or consent of instructor.)

## 45-275. Introduction to Research Methods

Introduces students to quantitative and qualitative social research. Looks at how surveys and focus groups are used and abused for political and commercial purposes. Examines what field and archival research can teach us about human behaviour and social, political, and economic trends.

## 45-309. Canadian Provincial Government

A comparative study of provincial governments and politics in Canada including an examination of the powers exercised by provinces, the institutions of provincial government and the behaviour of provincial electorates and politicians. In given terms, Ontario, Quebec, the Atlantic or the Western provinces may be given particular attention. (Prerequisite: 45-100 or consent of instructor.)

## 45-313. Federalism and <br> Federal-Provincial Relations

The theory and practice of contemporary federalism and the roles played by the federal and provincial governments in the Ca nadian policy process. Topics may include the division of powers in the Canadian Constitution, the evolution of Canadian Federalism, the impact of the Quebec issue on Canadian politics, and intergovernmental relations. (Prerequisite: 45-100 or consent of instructor.)

## 45-314. Constitutional Law and Politics in Canada

The nature and purpose of constitution and major issues in Canadian constitutional politics. Topics may include judicial review, the development of human rights law in Canada, the impact of the Charter of Rights on Canadian politics and government, and the Meech Lake and Chariottetown constitu-

### 3.17 Political Science

tional accords. (Prerequisite: 45-100 or consent of instructor.)

## 45-320. Political Parties and Elections

An analysis of the development and functions of parties and of the social, psychological, and political influences on voting in Canada.

## 45-321. The Legislative Process

An introduction to representative democracy, parliamentary behaviour, and legislative process. May include role-playing exercises and a simulation of the Federal House of Commons.

## 45-323. Government and Business

An introduction to the intricate relationship of government to business. Included are: govemment services to business; business and policy development; and regulation and/or de-regulation and regulatory agencies. (Prerequisite: 45-100 or consent of instructor.)

## 45-326. (Municipal) Urban Administration

A study of administrative structures and the principles of administrative organization in local government including budgetary systems, personnel management, the conduct of public relations, and the application of systems methods. (Prerequisites: 45-220 and 45-221, or consent of instructor.)

## 45-328. Public Financial Management

An introduction to managing public finances, including the link between public policy, revenue and expenditures, budgets and budget systems, and accountability. (Prerequisites: 45-220 and 45-221, or consent of instructor.)

## 45-329. Public Personnel Management

An introduction to personnel management under a merit system including the roles of public service commissions (recruitment, training, career development, dismissal) and public sector labour relations agencies (collective bargaining); political rights, employment equity. (Prerequisites: 45-220 and 45-221, or consent of instructor.)

## 45-346. Asian Government and Politics

Comparative analysis of institutions and political processes of Southeast Asia, South Asia, China, or Japan.

## 45-351. Community and Power in Modern European Thought

An exploration of the subject of communt and power in European thought between 1850 and the late twentieth century. Speced attention will be paid to Marxism/Leninisn elitist theory, facism, and structuralismpos structuralism. (Also offered as History 46 326.)

## 45-352. Liberalism in the English-Speaking World

Liberalism in the English-speaking wort Bentham, James Mill, J.S. Mill, T.H. Green H. Spencer, and John Dewey.

## 45-360. International Conflict and lis Resolution

The nature of conflict and how it is managed in the international community; explicit and tacit bargaining strategies and techniquesd conflict resolution. (Prerequisite: 45-160 consent of instructor.)

## 45-361. U.S. Foreign Policy

The American policy-making process and the substance of policy in relation to be communist world, developing countries, ard allies such as Canada and Western Eurpep (Prerequisite: 45-160 or consent of instrue tor.)
45-363. Principles of International Law An introduction to the role of internationd law in intemational relations, this course wil consider the role of justice in the intems tional system and will examine the bas: principles of modern international law, it cluding sources, subjects, and procedures (Prerequisite: 45-160 or consent of instrue tor.)
45-364. International Political Economy
An overview of the major theoretical per spectives and issues in international politited economy. Issues addressed may include:it? ternational trade, foreign investment and multinational corporations, internations monetary institutions, and crisis and change in the international system. (Prerequisise. $45-160$ or consent of instructor.)
45-365. The Politics of the Middle East The nature and causes of the various con flicts in the region, the role of outside powels and international organizations, and the
prospects for conflict resolution. (Prereqvisite: 45-160 or consent of instructor.)
45-366. International Relations in Asia and the Pacific
The foreign policies and relations of Asian states and the interests and roles of outside powers; nationalism and regionalism; independence, dependence, modernization, war, and revolution. (Prerequisite: 45-160 or consent of instructor.)
45-369. International Relations in Latin America and the Caribbean
An examination of major problems of international relations as they affect Latin America and the Caribbean. Included are discussions of the Inter-American system, economic development, regional integration, and the impact of the Cold War. (Prerequisite: 45-160 or consent of instructor.)

## 45-371. Religion and Politics

A study of the relationship between religion and poltics, with special attention to millenarian (e.g., Nation of Islam/Black Muslims, Christian Identity) and/or fundamentalist movements (e.g., Moral Majority, Islamic Jinad).

## 45-383. The Revolutionary Process

An examination of the various types of revolutions, their causes and their successes or failures, looking at the psychological and economic as well as the political dimensions. Cases studied may include successful revolutions as well as unsuccessful attempts, for instance, France, Russia, China, Iran, Vietnam, Cuba, Indonesia, Mexico, and Nicaragua.

## 45-399. Practicum in Government and Politics

Practical work in the office of an elected or appointed official, with oral and written reports to the supervising faculty member. (To be taken only with permission of instructor and a program advisor in Political Science.)
45-411. Survey of Canadian Politics and Government
A review of current literature in Canadian politics and government. (Admission by consent of the instructor.) (2 seminar hours a week.)

## 45-412. Selected Topics in Canadian Politics and Government

 Analysis of selected topics in Canadian politics and government. (Admission by consent of the instructor.) (2 seminar hours a week.)
## 45-417. Seminar in Canadian-American Politics

A focus on various issues central to the Can-ada-U.S. relationship. Typically, this course would include a study of differing approaches to common problems. The evolution and status of socio-economic linkages and an examination of cultural parameters which divide and yet also bind the two states will also be included. (Admission by consent of instructor.) (2 seminar hours a week.)

## 45-421. Seminar in Canadian Public Policy

A detailed analysis of the Canadian public policy process. (Admission by consent of the instructor.) (2 seminar hours a week.)

## 45-422. Seminar in Public Policy Analysis

A survey of the evaluative side of public policy including formulation, adoption, program operations and evaluation techniques. (Admission by consent of the instructor.) (2 seminar hours a week.)
45-431. Seminar in Comparative Politics A comparative examination of national political systems emphasizing areas such as political culture, political parties, elites, and interest groups. In given terms, the focus may be on industrialized or developing countries. (Admission by consent of the instructor.) (2 seminar hours a week.)

## 45-451. Seminar in Contemporary Political Theory

An examination of selected topics in political theory, with special emphasis on the literature of the twentieth century. (Admission by consent of the instructor.) (2 seminar hours a week.)

## 45-461. Seminar in Theories of International Relations

A survey of competing perspectives and approaches employed in the contemporary study of intemational relations. (Admission by consent of the instructor.) (2 seminar hours a week.)

## 45-462. Interdisciplinary Approaches to Research in International Relations

A research oriented seminar that will encourage the use of interdisciplinary perspectives in the examination of selected problems in international relations. (Admission by consent of instructor.) (2 seminar hours a week.)

## 45-488. Selected Topics in Political Science

Topics of current interest which may vary from year to year. (May be repeated for credit with the permission of a program advisor in Political Science.)

## 45-492. Public Service Management Internship Practicum

Supervised work experience in a public service management environment. (Admission only by consent of program advisor.) (Offered on a Pass/Non-pass basis only.) (Must be taken concurrently with 45-493.) (May be repeated once for credit.)

## 45-493. Public Service Management Internship Seminar

A critical examination of selected theories and concepts applicable to research and management practices in the public sector. (Admission by consent of a program advisor.) (Must be taken concurrently with 45 492.) (May be repeated once for credit.)

45-499. Directed Reading in an Approved Special Field
Intended for students with special interest in areas not covered in sufficient depth by other courses. (To be taken only with permission of instructor and a program advisor in Political Science.)

### 3.18 Psychology

(Ext. 2215)

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Holland, Cornelius J.; B.S. (St. Joseph's Philadelphia), M.A. (Detroit), Ph.D. (Catholic U. of America)-1967.

Kobasigawa, Akira; B.A., M.A. (George Pe. abody College), Ph.D. (Iowa)-1969.
Auld, Frank; B.A. (Drew), M.A., Ph.D. (Yale)-1970.
Minton, Henry L.; B.A. (New York), M.A (Southern Illinois), Ph.D. (Pennsylvania State)-1970.
McCabe, Ann E.; B.Sc. (St. Norbert Col. lege), M.S. (Iowa State), Ph.D. (Wiscon-sin)-1973.

## University Professor

Rourke, Byron P.; B.A. (Windsor), M.A, Ph.D. (Fordham), F.R.S.C.-1965.

## Professors

Cohen, Jerome S.; B.A. (Michigan State), M.A., Ph.D. (Wayne State)-1968.

Schneider, Frank W.; B.A. (Ohio Wesleyan), M.S. (Ohio), Ph.D. (Florida)-1968.

Frisch, Giora Ron; B.A. (City College, N.Y), Ph.D. (Tennessee)-1969.
Page, Stewart; B.A., M.A. (Western Ontario), Ph.D. (Toronto)-1981.

## Associate Professors

Daly, Raymond M.; B.S., M.A., Ph.D. (Loy ola)-1967.
Woodyard, H. Dale; B.A., M.A. (Roosevelt, Ph.D. (Florida)-1968.
Orr, R. Robert; B.A. (Valparaiso), M.A. . $_{1}$ Ph.D. (lowa)-1969. (Associate Executve Dean, Faculty of Arts and Social Sciences) Taub, Barry R.; B.A. (S.U.N.Y. Stony Brook), M.A., Ph.D. (Waterloo)-1972. (Director: Psychological Services Centre)
Porter, James E.; B.A. (Toronto), M.A. (Roosevelt), Ph.D. (Windsor)-1980. (Ps) chological Services Centre)

Voelker, Sylvia L.; B.A. (Indiana), M.A., Ph.D. (Wayne State)-1984.
Towson, Shelagh, M.J.; B.A. (York), M.A. (Wisconsin), Ph.D. (Waterloo)-1985. (Head of the Department)
Thomas, Cheryi, D.; B.A., M.A., Ph.D. (Simon Fraser)-1987.
Kral, Michael J.; B.A. (Guelph), M.A., Ph.D. (Califomia School of Professional Psychol-ogy)-1991.
Latreniere, Kathryn D.; B.A. (Windsor), M.A. Ph.D. (York)-1991.

Hakim-Larson, Julie A.; B.S. (Michigan State), M.S. (Eastern Michigan), Ph.D. (Wayne State)-1991.
Senn, Charlene Y.; B.Sc., M.Sc. (Calgary), Ph.D. (York)-1992.
Cramer, Kenneth M.; B.A., M.A., Ph.D. (Manitoba)-1998.
Paivio, Sandra C.; B.A., M.Ed. (Western Ontario), Ph.D. (York)-1998.
Hart, Kenneth E.; B.A. (Laurentian), M.A. (Lakehead), Ph.D. (Houston)-2001.

## Assistant Professors

Shore, Douglas L.; B.A., M.A., Ph.D. (Wayne State)-1985.
Martini, Tanya S.; B.Sc. (Toronto), M.A. (Windsor), Ph.D. (Toronto)-1998.
Menna, Rosanne; B.A. (Brock), M.A., Ph.D. (Toronto)-1998.
Casey, Joseph; B.A. (Windsor), M.A. (Carleton), Ph.D. (Windsor)-2000.
Coutts, Larry; B.A. (Winnipeg), M.A., Ph.D (Windsor)-2000.
Hibbard, Stephen; B.A. (Santa Clara), M.A. (California State), Ph.D. (Tennessee)2000.

Newby-Clark, lan; B.Sc. (Toronto), Ph.D. (Waterloo)-2000.
Buchanan, Lori; B.A. (Wilfrid Laurier), M.A., Ph.D. (Waterloo)-2001
Jary, Josee L.; B.A. (Sherbrooke), M.Ps. (Montreal), Ph.D. (Toronto)-2001.
Kuo, Ben C.; B.A., M.Ed. (Toronto)-2001.

## Adjunct Associate Professors

Broga, Mary; B.A. (Waterloo), M.A., Ph.D. (Western Ontario)-1987.
Rudzinski, Donald; B.A. (Illinois), M.A. (Roosevelt), Ph.D. (Windsor)-1991.

## Adjunct Assistant Professors

Abrash, Donald; B.A., M.A., Ph.D. (Wind-sor)-1994.
Fuerst, Darren; B.A. (York), M.A., Ph.D. (Windsor)-1994.
Vokes, Ted; B.A. (York), M.A., Ph.D. (Wind-sor)-1999.

### 3.18.1 PROGRAMS OF STUDY

Minor, General degree, four-year Honours degree, and combined four-year Honours degree programs are available in Psychology.

## Minor in Psychology

Requirements: Six courses in Psychology, including 46-115, 46-116, and four courses at the 200 level or above.

## Minor in Child Psychology

Requirements: Six courses in Psychology, including 46-115, 46-116, and four of 46223, 46-224, 46-322, 46-323, 47-327, 46422, 46-423, 46-424, 46-425, 46-427, and 46-437.

## General Psychology

Total courses: thirty.
Major requirements: ten courses, including $46-115$ and 46-116; plus at least one of 46220, 46-223, or 46-236; and at least two 300-level courses.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements:
(a) 02-250;
(b) three courses from any area of study, including Psychology;

### 3.18 Psychology

(c) eight courses from any area of study, excluding Psychology.

## Honours Psychology

This program is one of two four-year Honours programs in psychology. It is intended for students who wish to study the discipline of psychology over a four-year period, including those who might wish to study at the graduate level in professions or disciplines other than psychology.
Total courses: forty.
Major requirements: eighteen courses, including 46-115, 46-116, 46-229 or 46-230, 46-320, 46-353 or 46-358; plus at least one of $46-220,46-223$, or $46-236$. The total number of courses must include at least four 300level courses and three 400 -level courses.
Option requirements (see 2.4.14 for subject areas): six courses, consisting of
(a) two Arts or Languages courses;
(b) two Science courses;
(c) two additional courses from Arts, Languages or Science.

Other requirements:
(a) 02-250;
(b) two courses from any area of study, including Psychology.
(c) thirteen courses from any area of study, excluding Psychology.

## RECOMMENDED COURSE SEQUENCE

First Year: 46-115 and 46-116.
Second Year: 02-250, 46-229 or 46-230, and one of 46-220, 46-223, or 46-236.
Third or Fourth Year: 46-320, 46-353 or 46358.

## Honours Psychology with Thesis

This program is oriented primarily toward students with a serious interest in psychological research and/or who intend to study at the graduate level in psychology, or perhaps in related areas such as sociology, anthropology, criminology, or social work. Students taking this program should be able to do independent research (thesis) work, and have competence in statistics and research methods. In the third year, students
should ascertain test dates for the Graduak Record Examination, which must be witten no later than the fall of the fourth year by stidents considering graduate studies in psF chology. In the fourth year, the program requires completion within a two-term periof (Fall and Winter terms only) of a thesis, The thesis is an independent research study done in conjunction with a program advisor. Total courses: forty.
Major requirements: eighteen courses, in. cluding 46-115, 46-116, 46-229 or 46-230. $46-313,46-320,46-353$ (or $46-358$ ), 46-498 and 46-497; and at least one of 46-220,48223 , or 46-236. The total number of courses must include at least four 300 -level courses and three 400-level courses.
Option requirements (see 2.4.14 for subjer areas): six courses consisting of
(a) two Arts or Languages courses;
(b) two Science courses;
(c) two additional courses from Aits Languages, or Science.

Other requirements:
(a) 02-250;
(b) two courses from any area of study, including Psychology;
(c) thirteen courses from any aread study, excluding Psychology.

## RECOMMENDED COURSE SEQUENCE

Note: Students considering this program should seek academic advising before the end of the third year of study. Students also should try to generate a thesis topic, at least in general terms, before the fourth year of study.
First Year: 46-115 and 46-116.
Second Year: 02-250, 46-229 or 46-230, and one of 46-220, 46-223, or 46-236.
Third Year: 46-313, 46-320, 46-353 (or 46358).

Fourth Year: 46-496 and 46-497.

Combined B.Sc. Honours Program in Biological Sciences and Psychology: Behaviour, Cognition and Neuroscience
See Biological Sciences-Programs of Study, 4.3.1.

## Other Combined Honours Programs

 Total courses: forty.Major requirements-Psychology, fourteen courses, including 46-115, 46-116, 46-229 or 46-230, and 46-320; plus one of 46-220, 46-223, or 46-236; and 46-353 or 46-358. The total number of Psychology courses must include at least four 300-level courses and two 400 -level courses. Students should consult with a Psychology program advisor before undertaking a combined Honours program. The two, required fourth-year courses may be 46-496 and 46-497, but only with permission of a Psychology program advisor, and if a student has taken 46-313 or an equivalent statistics course from another area of study

Major requirements - Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subject areas): eight courses including
(a) two Arts or Languages courses;
(b) two Science courses;
(c) four additional courses from any area of study, excluding Social Sciences.

Other requirements:
(a) $02-250$;
(b) additional options (if required) to a total of forty.

### 3.18.2 COURSE DESCRIPTIONS

Not all courses will be offered each year. All courses are three hours a week unless otherwise indicated.
Priority for registration in 300-and 400-level courses may be given to students with General Psychology Majors, Psychology Honourss or Combined Honourss.

46-115. Introduction to Psychology as a Behavioural Science
Introduction to selected areas in psychology including learning, perception, physiological psychology, emotion, and motivation.

## 46-116. Introduction to Psychology as a Social Science

Introduction to selected areas in psychology including developmental, social, personality, and clinical.
46-115 and 46-116 are prerequisites for all other courses in Psychology. Some courses may require additional prerequisites.

## 46-220. Introduction to Adjustment and Personality

A survey of major approaches to the study of personality with a particular focus on the processes involved in adjustment.

## 46-223. Developmental Psychology: The Child

The study of normal child development from conception to puberty, including physical, cognitive, and social development within the child's family, school, and cultural contexts. Specific topics include temperament, language development, intelligence testing, personality development, and parenting styles.

## 46-224. Developmental Psychology: Adolescence

The study of normal adolescent development from puberty to early adulthood. Topics include physical changes at puberty, cognitive and social development, and the impact of adolescent development within various contexts, including families, peer groups, and schools.

## 46-225. Developmental Psychology: Adulthood and Aging

The study of adult development including stages in adulthood, problems of aging, and issues related to death and dying.

## 46-229. Experimental Psychology

Introduction to experimental design and research methodology, illustrated with laboratory exercises. (Credit will be granted for only one of 46-229 and 46-230.) (2 lecture, 2 laboratory hours a week.)

## 46-230. Social Science Research Methods

An introduction to experimental and non-experimental research methods and designs commonly used in psychology (e.g., laboratory and field experiments, quasi-experimental designs, survey research, and observational studies). The course will include a review of ethical principles in research and instruction on report writing in APA style. (Credit will be granted for only one of 46-229 and 46-230.) (2 lecture, 2 laboratory hours a week.)

## 46-232. Abnormal Psychology I

Definition, history, and basic theoretical approaches to abnormal behaviour, with a focus on anxiety, personality disorders, and drug and alcohol abuse.

## 46-233. Abnormal Psychology II

Description and theories of affective, schizophrenic, and organic disorders; and disorders of childhood and adolescence. (Prerequisite: 46-232.)

## 46-235. Identity Processes

An exploration of the pivotal role identity plays in the organization and actions of social life. (Also offered as Sociology 48-235.) (Prerequisites: both 46-115 and 46-116, or 48-101 and either of 48-102 or 49-112.)

## 46-236. Introduction to Social Psychology

An introduction to the theories, methods, findings, and problems associated with the study of the individual in the social context. Topics include social cognition; interpersonal behaviour (attraction, aggression, altruism); social attitudes, prejudice, and discrimination; social influence and group processes (conformity, leadership, intergroup relations). (Also offered as Sociology 48-236.) (Prerequisites: 46-115 and 46-116, or 48-101 and 48-102.)

## 46-240. Psychology of Sex and Gender

 Review of philosophical, historical, theoretical, and research literature in the psychology of sex and gender. Topics include male/female stereotypes; similarities/differences based on research data; and current social issues.46-256. Introduction to the Brain and Human Behaviour
Reviews basic research relating brain ard behaviour with a focus on human function ing. Includes the study of neuronal and s: naptic activity and results from current research and case histories which link hyman behaviour to basic neuroanatomical and biochemical brain systems. (May notbs taken concurrently with 46-336 or 46-337.)

## 46-310. Tutorial

Individual projects in specific areas of pspchology. (May be repeated for credit.) (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-313. Advanced Statistics

One-way, two-way, and higher order ANOVA, repeated measures ANOVA, muth ple comparisons, correlation and univarás regression, introduction to multivariate regression and the general linear model, with an emphasis on computer data analysis (Prerequisite: 02-250.)

## 46-315. Recent Research in Basic Psychology

Current issues in psychology will be se lected from the areas of physiological, leaming, motivation, cognition, and perception (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-316. Recent Research in Human Psychology

Current issues in psychology will be selected from the areas of developmental, so cial, personality, and clinical psycholog. (Prerequisites: $46-115,46-116$, and four abditional courses in Psychology.)

## 46-320. Tests and Measurement

An introduction to basic concepts of psychological testing, with a focus on test development, measurement, and test evaluation. Standard tests used to assess personalify, achievement, and aptitudes will be sulf veyed. (Prerequisite: 02-250.)

## 46-322. Child Psychopathology

An overview of theory and research related to the assessment, diagnosis, and treatment of childhood and adolescent disorders. Rish factors, vulnerability to stress, and protective factors will be addressed in relation to ad

### 3.18 Psychology

justment disorders, conduct disorder, depression, and anxiety in children and adolescents. (Prerequisite: 46-223 or 46-224.)

## 46-323. Developmental Disabilities

An overview of theory and research related to the biological foundation of childhood and adolescent developmental disabilities. Mental relardation, sensory and motor impairments, learning disabilities, and disorders with physical manifestations are included in the topics covered. (Prerequisite: 46-223 or 46-224.)

## 46-324. Educational Psychology

Psychology of the learning process and the variables that affect learning such as intelligence, motivation, attitudes, interpersonal relations, and cultural background. (Prereqvisite: 46-223.)

## 46-325. Mental Health and Aging

Topics include: Psychological disorders and dementing diseases of adulthood, identification of elderly "at risk", substance abuse, dependency, emotional support, caregiver, stress and elder abuse. Course work may also include exercises on assessment, communications, and counselling with field experience in the community. (Prerequisite: 46-225.)

## 46-327. Psychological Perspectives on Parenting

Contemporary theories and practices of parenting throughout the life cycle, with an emphasis on the psychological aspects of the family system. (Prerequisite: 46-223.)

## 46-330. Personality Theory and Research

Survey of personality theories and relevant research. Theories may include psychoanayytic, trait, behavioral, humanistic, cognitive, and biological. Research may include per-son-situation debate, nature-nurture, personality change, and inventories.

## 46-334. Applied Social Psychology

The application of social psychology to solving social issues. Topics include improving job satisfaction and organizational life, promoting community health, meeting social welfare needs, dealing with environmental problems, improving educational systems, and addressing the issues of social justice
and equality. The course may involve a fieldwork component. (Prerequisite: 46-236.)

## 46-335. Human Sensation and Perception

The study of underlying mechanisms and processes of human sensation and perception, methods of measuring human sensory abilities, and the perceptual processes for integrating and interpreting such information. (Prerequisite: 46-229 or 46-230.) (2 lecture, 2 laboratory hours a week.)

## 46-336. Behavioural Neuroscience

Issues relevant to behavioural neuroscience. Functional neuroanatomy and models of brain systems related to perception, emotion, motivation, learning, and memory. Introduction to neurotransmitter systems and their relationship to behaviour. (May not be taken concurrently with 46-256.) (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-337. Human Cognitive Neuroscience

Issues relevant to the brain and human behaviour. Recent research selected from areas of developmental, cognitive, and clinical neuropsychology. Introduction to cognitive neuroscience modelling. (May not be taken concurrently with 46-256.) (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-340. Human Sensation and Perception

The study of the visual system; basic visual functions; colour perception; shape, distance and motion perception; constancies and illusion.

## 46-342. Culture and Psychology

This course examines psychological theory and research on the commonalifies and variations in human behaviour within and across cultures. Topics may include individualism and collectivism, perpectives on the self, communication and interpersonal relations, intergroup relations, organizational behaviour, and the consequences of cross-cultural contact. (Prerequisite: 46-236.)

## 46-344. Psycholinguistics

A survey of theories and research on the cognitive processes involved in language production, comprehension, and acquisi-

### 3.18 Psychology

tion. (Also offered as English 26-396.) (Prerequisites: 46-115 and 46-116, or two 100level English courses, or consent of instructor.)

## $46-353$. Learning and Behaviour

Basic principles and theories of classical and operant conditioning and their application to human behaviour. (Prerequisite: 46-229 or 46-230.) (2 lecture, 2 laboratory hours a week.)

## 46-355. Comparative Psychology

Introduction to animal behaviour from the viewpoint of its role in the natural life of the individual and the species. A synthesis of contributions by comparative psychologists, ethologists, ecologists, and zoologists. (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-358. Cognitive Processes

A review of current contributions to the understanding of attentional, memory, problem solving, and reasoning processes. (Prerequisite: 46-229 or 46-230.) (2 lecture, 2 laboratory hours a week.)

## 46-360. Marxist Approaches to Psychology

A Marxist class analysis of psychology as a social science; as a profession, particularly as a helping profession; and its role within the superstructure of the state. (Prerequisites: 46-115, 46-116, and four additional courses in Psychology; or 54-100 and 54200.)

## 46-370. Organizational Psychology

The study of human behaviour in organizational settings and the organization itself. Topics include organizational design, organizational change and development, organizational culture, norms and roles, work motivation, job satisfaction, communication, work teams decision making, power and politics, and leadership. (Prerequisites: 46115 and 46-116; or Labour Studies students must have at least Semester 5 standing; or consent of instructor.)

## 46-371. Personnel Psychology

The study of human resource issues in work and other organizational settings. Topics include job analysis, job design, job evaluation, selection and promotion techniques,
employment equity issues, performanes management, training and developmert compensation and reward systems, and the changing nature of jobs. (Prerequisites: 48: 115 and 46-116, or consent of instructor.)
46-400. Selected Topics in Psychology Seminar on a selected topic in psychologi Content will vary from term to term. (Preereq uisites: 46-115, 46-116, and four additione courses in Psychology.)

## 46-413. Multivariate Statistics

A comprehensive examination of multiplere gression and the general linear model. Into duction to matrix algebra. Selected lopis from the following: multivariate analysis d variance and discriminant function analyss factor analysis and principal components analysis, logistic regression and log-linea models, multidimensional scaling and cuss ter analysis. Mainframe and personal computer analysis of multivariate dala. (Prerequisite: 46-313.)

## 46-415. History and Systems of Psychology

The emergence and development of psp: chology as a science. A review and evalration of major systems of psychology, such as structuralism, functionalism, behaviour. ism, Gestalt psychology, and psychoana) ; sis. Emphasis will be placed on the contributions of the systems to contemporary theoretical conceptions and trends (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-422. Advanced Developmental Psychology: Emotional Development

This seminar examines issues related to emotional development from infancy through adult years. The experience, ex pression, and regulation of emotion will be discussed from various historical and acł demic perspectives. (Prerequisite: 46-228 or 46-224.)

## 46-423. Advanced Developmental Psychology: Cognitive Development

An examination of current theories, research methods, and findings in the area of coght
five development. (Prerequisite: 46-223 or 46-224.)
46-424. Advanced Developmental Psychology: Social Development
This seminar examines established and newly-emerging theories of development and their impact on social development research. Emphasis is placed on describing social developmental outcomes (e.g., gender, emotion, mortality), and the influence of biological factors (e.g., temperament) and socialization agents (e.g., parents, media) on such outcomes. (Prerequisite: 46-223 or 46-224.)

## 46-425. Seminar in Developmental Psychology

Focus on a particular topic within the area of developmental psychology. Topics will vary from term to term. (May be repeated for credit.) (Prerequisites: 46-115, 46-116, 46223 and three additional courses in Psychology.)
46-427. Methods of Behavioural Change Survey of theories and methods of behavloural change, including behavioural assessment and analysis, relaxation training, graduated exposure, contingency management, and cognitive restructuring. (Prerequisite: 46-353.)

## 46-429. Seminar in Personality

Focus on a particular topic within the area of personality. Topics will vary from term to term. (Prerequisite: 46-330.)

## 46-430. Clinical and Counselling Psychology

The principles and techniques underlying dinical interviewing and modern psychotherapeutic methods. Emphasis will be placed upon the application of clinical interviewing and modern psychotherapeutic method's, as well as the application of clinical methods in clinics, hospitals, schools, mental health settings, and community agencies. (Prerequisite: 46-233.) (2 lecture, 2 laboratory hours a week.)

## 46-432. Community Psychology

An examination of societal and environmental influences on the community and individual community members, the
development of the community mental health movement, and current issues in theory, research, and practices in community psychology. Emphasis will be placed on prevention, crisis intervention, and effecting social change. An overview of community-based professional and volunteer services will be presented. Community responses to issues such as homelessness, suicide, and violence against women will be considered. (Prerequisite: 46-236.)
46-433. Seminar in Law and Psychology Issues in the interaction between law and psychology; discussion of the use/misuse/nonuse of behavioural sciences in the law; emphasis on how psychology can best be applied to family, criminal, and civil law. (Prerequisites: 46-115, 46-116, and four additional courses in Psychology.)

## 46-434. Seminar in Social Psychology

Focus on a particular topic within the area of social psychology. Topics will vary from term to term. (Prerequisite: 46-236.)

## 46-435. Health Psychology

Application of psychology to the areas of health promotion, prevention and treatment, and improvement of health-care delivery. Theory, research, and practice in health psychology and behavioural medicine will be examined. Specific areas of emphasis may include stress, illness, and coping; patientpractitioner interaction; adjustment to chronic illness; reproductive health issues; and cross-cultural conceptions of illness and healing. (Prerequisite: 46-236.)

## 46-436. Seminar in Psychopathology

Focus on a particular topic within the area of abnormal behaviours. Topics will vary from term to term. (Prerequisites: 46-232 and 46233.)

## 46-437. Seminar in the <br> Neuropsychology of Learning Disabilities

Theory, research, and practice in the neuropsychology of learning disabilities across the life span. Emphasis on subtypes of childhood learning disabilities and their relationships to academic and psychosocial functioning. (Prerequisites: two of 46-223, 46-322, 46-323, or their equivalents.)

### 3.18 Psychology

## 46-438. Psychological and Neuronal Regulation

The fundamentals of neuroelectric imaging or quantitative electroencephalography (QEEG), including administration, pattern analysis, digital topographic mapping, and statistical data base analyses will be considered. The relationship between selected QEEG parameters and a broad band of clinical syndromes will be investigated. The utilization of the QEEG and Neurotherapy to enhance normal EEG activity and to regulate abnormal brain states will be demonstrated. (Prerequisites: 46-115, 46-116, and four additional Psychology courses.) (2 lecture, 2 laboratory hours a week.)

## 46-440. Seminar in the Psychology of Women

An examination of the feminist critique of mainstream psychology research of the last century, of feminist approaches to research and theorizing, and applications of feminist psychology to the study of a number of topics in the psychology of women (e.g., mental health, violence against women, sexuality). (Prerequisite: 46-240 or consent of instructor.)

## 46-445. Stereotyping, Prejudice, and Discrimination

Psychological theory and research on stereotyping, prejudice, and discrimination; their formation and function; the role of individual and sociocultural factors in their development and maintenance; individual responses and psychological interventions. (Prerequisite: 46-236.)

## 46-457. Comparative Cognition

Evidence of general and specialized cognitive processes in human and nonhuman organisms will be investigated. Topics to be covered include memory systems, concept formation, and nature of stimulus representation. Current research on these and other topics will be reviewed and analyzed. (Prerequisite: 46-353 or 46-358.)

## 46-458. Artificial Intelligence and Human Thinking

Current issues related to artificial and human intelligence, reasoning, decision mak-
ing, and knowledge representation. Inte grates relevant concepts from psycholog, philosophy, linguistics, computer science, and cognitive neuroscience. An individual project is required. (Prerequisites: 46-115, 46-116, and four additional courses in Ps. chology.)
46-463. Women, Gender, and Sexuality in North America
The cultural ideology, social regulation, and experience of reproduction and sexual relstions with an emphasis on women. Topicsinclude childbirth, slavery and sex, abortion and birth control, and the role of psychologg and popular culture in the development d modern heterosexual and homosexualidentities. (Also offered as History 43-463.) (Prerequisite: one of 43-249, 43-250, 46-240, a 46-440.)

## 46-470. Seminar in Industrial-Organizational Psychology

Focus on a particular topic within the aread industrial-organizational psychology. Topis will vary from term to term. (Prerequisites 46-370 and 46-371.)
46-475. Popular Literature in Psychologit A forum for critical examination and analysis of popular literature written by psychologists or others functioning in the role of counselfor or lay expert. The maingoal is to identify both traditional and novel criteria for assessing the validity of popular literature and its corr tribution to knowledge. (Prerequisites: 46 115, 46-116, and four additional courses in Psychology.)

## 46-496. Thesis: Seminar

Experience in conducting psychological itsearch is viewed as necessary for graduate work in psychology. This course is designed to provide such experience through plart ning, developing, and writing a research proposal under individual faculty supervision. Group sessions on research ethics, proces dures, writing, and data analysis. (Prereauisites: either 46-229 or 46-230, 46-313, and either 46-353 or 46-358; and cumulative and major averages of at least 8.0.)

46-497. Thesis: Research
Students will conduct and write an undergraduate thesis under individual faculty supervision. The thesis is developed and begun while taking 46-496.) (Prerequisite: 46-496.)

### 3.19 Social Work

(Ext. 3064)
OFFICERS OF INSTRUCTION

## Professors Emeriti

Taylor, Patricia Ann; B.A. (Assumption), B.S.W., M.S.W. (Toronto)-1968.

Kroeker, Bernhard J.; B.Ed. (Alberta), B.S.W., M.S.W. (Toronto)-1969.

## Professors

Holosko, Michael J.; B.A.(Hons.) (York), M.S.W. (Toronto), Ph.D. (Pittsburgh)1985.

Hawkins, Frank R.; B.Ed., B.A. (Memorial), M.S.W. (Toronto), D.S.W. (Tulane)-2000. (Director of the School)

## Associate Professors

Hansen, Forrest C.; B.A. (Alberta), B.S.W., M.S.W., Ph.D. (Toronto), C.S.W.-1971.

Gallant, Wilfred A.; B.A. (St. Francis X.), M.S.W. (Maritime School of Social Work), Ed. D. (Wayne State), C.S.W.-1973.
Cassano, D. Rosemary; B.A., B.S.W., M.S.W., Ph.D. (Toronto), C.S.W.-1979.

Daly, Catherine; B.A. (British Columbia), M.S. W., M.P.H., Ph.D. (Hawaii), A.C.S.W.1989.

Gorey, Kevin M.; B.A., M.S.W., Ph.D. (S.U.N.Y. Buffalo)-1994.

## Assistant Professors

Leslie, Donald R.; B.A. (Guelph), M.S.W. (British Columbia), Ph.D. (Georgia)-1994.
Bidgood, Bruce; B.A. (Brock), M.S. W., Ph.D. (Wilfrid Laurier)-2000.
Taylor, Laura E.; B.A. (McMaster), M.S.W. (Wilfrid Laurier), Ph.D. (Toronto)-2001.

## Field Liaison Specialist

McAvoy, Freida L.; B.A., M.S.W. (Wilfrid Laurier)-1999.
Field Education Centres
Field placements are in Windsor, Essex County, Chatham-Kent, Samia, and Metropolitan Detroit.

## WINDSOR

AIDS Committee of Windsor
Alzheimer Society of Windsor and Essex County
Big Brothers Association of Windsor and Essex County
Big Sisters Association of Greater Windsor
Bulimia Anorexia Nervosa Association (B.A.N.A.)

Canadian Mental Health
Association-Windsor-Essex
Children's Achievement Centre
Children's Crisis Centre
Children's Rehabilitation Centre
The Child's Place
Citizen Advocacy Windsor-Essex
Drouillard Place
Family Respite Services
Glengarda Child and Family Services
Hiatus House
The Hospice of Windsor and Essex County, Inc.
Hotel Dieu-Grace Hospital
House of Sophrosyne
Huron Lodge Home for Seniors
Infant and Family Program
The Inn of Windsor
Invest Computer Centre (GECDSB)
Kids' Alliance
Legal Assistance of Windsor (L.A.W.)
Maryvale Family and Adolescent Services
Multiple Sclerosis Society of Canada
New Beginnings
Programmed Activity Therapy Health (P.A.T.H.)

St. Leonard's House
Sandwich Community Health Centre
Sexual Assault Crisis Centre
United Way/Centraide, Windsor-Essex County
Villa Maria Home for the Aged
Windsor Community Living Support
Services
Windsor-Essex Catholic District School
Board
Windsor-Essex Children's Aid Society
Windsor Jewish Community Centre
Windsor Regional Children's Centre
Windsor Regional
Hospital-Psychogeriatric Department

Windsor Regional Hospital-Mental Health Clinic
Windsor Regional Hospital-Essex County
Addiction Assessment Referral Service
Windsor Social Services
The Windsor Women's Incentive Centre

## ESSEX COUNTY

Essex County Association for Community Living
Richmond Terrace Nursing Home
Victim Services

## CHATHAM

Canadian Mental Health
Association-Bereavement Program
Chatham and District Association for Community Living
Chatham-Kent Health Alliance-St. Joseph's Campus
Chatham-Kent Integrated Children's Service
Kent County-Chatham Probation and Parole
Kent County Children's Treatment Cente

## SARNIA

St. Clair Catholic District School Board
St. Clair Children and Youth Centre

## DETROIT

## Adult Well-Being

Barat House
Children's Aid Society of Wayne Countly
Communities in Schools of Detroit, Inc.
Covenant House, Michigan
Crossroads
Detroit Public Schools
Highland Park Teen Health Center
International Institute of Detroit
Mariner's Inn
Project Transition
Quality Behavior Health, Inc.
Wayne County Neighbourhood Legal Services
Women's Justice Center

### 3.19 Social Work

### 3.19.1 PROGRAM REGULATIONS

AB.S.W. degree accredited by the Canadian Association of Schools of Social Work is required to become a Registered Social Worker in Ontario.

## ADMISSION REQUIREMENTS

Years / and 2: Admission to the pre-professional program is governed by the general requirements of the University. A minimum of wenty courses (including four Social Work courses, a statistics course, two Science courses, and ten courses from Arts, Languages and Social Sciences) is required prior to admission to Year 3.
In preparation for application to the professional program in Year 3, students are strongly encouraged to engage in volunteer experiences in human services agencies andorganizations in the community.
Years 3 and 4:Admission to the professional program in Year 3 requires that students apply to the Office of the Registrar prior to March 1. Applications are available from the Office of the Registrar or the School of Social Work. A minimum average of 8.0 in Social Work courses is required. References must accompany the application. An interview may be required, and early applications are encouraged. Entry is for the next Fall term only, and enrolment is limited. Students who are accepted to Year 3 will be notified by the Office of the Registrar. Selection of candidates for admission will be based on grades and other relevant criteria determined by the Social Work Admissions Committee.
Years 3 and 4 normally require full time study. Part-time study will be considered upon request by written application.
Aboriginal peoples, persons with disabilities, and members of visible minorities are encouraged to apply.
Transfer from other programs: Applicants transterring from other programs will be assessed individually by the Office of the Registrar and are subject to the same admission procedure to Year 3 as outlined above.
Admission for University Graduates: University graduates with a three-year or General
degree in Arts or Social Sciences with a minimum cumulative G.P.A. of 8.0 , or an average of at least 8.0 in their last twenty courses taken, including at least one course in statistics or research methods, may be considered for direct admission to a two-year, four-semester program leading to a Bachelor of Social Work (B.S.W.) degree.
University graduates with a four-year Honours degree in Arts or Social Sciences, with a minimum cumulative G.P.A. of 8.0 , or an average of at least 8.0 in their last twenty courses taken, including at least one course in statistics or research methods, may be considered for direct admission to a oneyear, three-semester advanced program leading to a B.S.W. degree.

### 3.19.2 PROGRAM OF STUDY

The undergraduate programs are organized as a sequence which combines studies in the social sciences, the humanities, and other course options along with professional courses in social work. The objective of the programs is to prepare graduates for generalist Social Work practice and for graduate Social Work study.
Field education is an essential requirement of the Social Work program, and successful completion of eight Field Practice courses is required for graduation. This may involve travel and/or weekend hours, and students are responsible for transportation to their field placement. All students will be assigned a field placement in a human service organization or community setting normally for two days per week in both the Fall and Winter semesters. There are approximately 400 hours of Field Practice in each of Years 3 and 4 of the program.
Theory and Practice of Generalist Social Work courses 47-336, 47-337, 47-436, and 47-437 are taken prior to or concurrent with Field Practice courses.

## Bachelor of Social Work

Total courses: forty-four:
Major requirements: 47-117, 47-118, 47204, 47-205, 47-303, 47-304, 47-336, 47337, 47-344, 47-361, 47-362, 47-363,

### 3.19 Social Work

47-364, 47-436, 47-437, 47-447, 47-461, 47-462, 47-463, and 47-464; plus eight Social Work elective courses at the 300 or 400 level.

Other requirements (see 2.4.14 for subject areas):
(a) 02-250;
(b) two courses from Science;
(c) ten courses from Arts, Languages, or Social Sciences, excluding Social Work;
(d) three courses from any area of study excluding Social Work.

RECOMMENDED COURSE SEQUENCE
Year 1: 47-117, 47-118, and eight options (Recommended: 46-115, 46-116, 48-101, 48-102).
Year 2: 47-204, 47-205, 02-250, and seven options (Recommended: 46-223, 46-224, 46-225, 48-204).
Year 3:47-303, 47-304, 47-336, 47-337, 47344, 47-361, 47-362, 47-363, and 47-364; plus additional Social Work electives at the 300 or 400 level, or options to a total of twelve courses.
Year 4:47-436, 47-437, 47-447, 47-461, 47462, 47-463, and 47-464; plus additional Social Work electives at the 300 or 400 level, or options to a total of twelve courses.
Social Work Electives (Regular Program): 47-346, 47-347, 47-356, 47-357, 47-410, 47-412, 47-456, 47-458, 47-459.

## Bachelor of Social Work (for University Graduates)

ONE-YEAR ADVANCED PROGRAM
Total courses: seventeen.

## Required:

Fall Semester: 47-303, 47-304, 47-336, 47-$361,47-362$, and 47-436; plus one Social Work elective.

Winter Semester: 47-337, 47-363, 47-364, 47-437, and 47-447; plus one Social Work elective.
Summer Semester: 47-461, 47-462, 47463 , and 47-464.

## TWO-YEAR PROGRAM

Total courses: twenty-four.
Required:
Year 1:47-303, 47-304, 47-336, 47-337,47. 344, 47-361, 47-362, 47-363, and 47-364, plus three Social Work electives.
Year 2: 47-436, 47-437, 47-447, 47-461, 47. $462,47-463$, and 47-464; plus five Social Work electives.
Social Work Electives (B.S.W. for Universit) Graduates Programs): 47-204, 47-205, 47. $346,47-347,47-356,47-357,47-410,47$. 412, 47-456, 47-458, 47-459.

### 3.19.3 COURSE DESCRIPTIONS

Social Work required courses $47-117,47$. 118, 47-204, and 47-205 are open to all strdents in the University. Acceptance to the B.S.W. program is required for registrationin all other required 300 - and 400 -level courses.
Elective (non-required) Social Work courses at the 300 and 400 level are open to third: and fourth-year students in other programs but Social Work majors will be given priority when registering for these courses.
All courses are three hours a week unless otherwise indicated.
Social Work electives can be taken inte: changeably by Year 3 and Year 4 students.
Not all courses listed will necessarily be of fered each year.

## 47-117. Meeting Human Needs through Social Welfare

Examines the historical, philosophical and political aspects of the development and delivery of the Canadian Social Welfare S/Fs tem. Special attention will be focussed on the needs and services available to vulnerable populations. ( 2 lecture hours, 1 labor. tory hour a week.)

## 47-118. Meeting Human Needs through Social Work

Examines the ways in which social workers in general practice intervene to meet the so cial needs of Canadians. Attention will b: given to the development of an under
standing of generalist social work practice within an ecological and systems perspective. (2 lecture hours, 1 laboratory hour a week.)

## 47-204. Social Work Intervention with Citizens in a Welfare State

Examines various perspectives of a social worker's interactions with citizens in a wellare state and explores the roles of social workers and the skills they require to deal effectively with client systems and organizations. Value conflicts, resulting from the impact of dominant cultures on policies and sevices will also be emphasized. (Prerequisites: 47-117 and 47-118.)

## 47-205. Organizational Practices in Human Services

Examines organizational theory, interorganizational behaviours, formal and informal communications in organizations, labour relations, and conflict resolution within the context of a professional social work approach to administration. (Prerequistes: 47-117 and 47-118.)
47.303. Social Policy and Social Welfare Introduces the student to the formulation and analysis of social policy. The student uses knowledge of social services as a basis for assessing and recommending changes in existing programs or services, and for introducing new services. Special attention is given to identifying policy gaps in services and unmet needs of vulnerable populations within the general practice framework.

## 47-304. Professional Communication in Generalist Social Work Practice

Examines the various types of professional communication utilized in generalist social work practice. Selected conceptual frameworks for verbal, nonverbal and written communication are reviewed and analyzed. Professional communication skills are developed through the use of laboratory exercises which focus on translating conceptual frameworks for communication into action in generalist social work practice. (Must be taken concurrently with 47 336, 47-361, and 47-362.)

## 47-336. Theory and Practice of Generalist Social Work I

Examines the knowledge base, principles and techniques of social work generalist practice and the use of social work values in the context of offering help focusing on individuals (micro-level). Included in this are the use of interpersonal relationships as a medium for helping and the use of theories of human interaction within various systems and subsystems as a base for problem assessment. Emphasis will be on practice with individuals in their social context. Special time will be taken to ensure the integration of classroom leaming with student's experiences in their field placements. (Must be taken concurrently with $47-304,47-361$, and 47-362.)

## 47-337. Theory and Practice of Generalist Social Work II

Builds upon the generalist practice model of social work presented in 47-336. It extends generalist social work concepts to small groups as client systems. Focus will be on analysis and application of generalist knowledge, values and skills for assessment and intervention with small groups. Special time will be devoted to ensure the integration of classroom learning with students' experiences in their field placements. (Must be taken concurrently with 47-304, 47-363, and 47-364.)

## 47-344. Research I: Foundations of Social Work Research

Prepares students to critically analyze social work research applicable to generalist practice. Foundation principles of rational and empirical inquiry are examined across the continuum of qualitative and quantitative research designs which may be appropriately employed in a variety of practice contexts. The course's central purpose is to enable the practical interpretation of social work research to be used integratively in practice with diverse clients, particularly those who have been marginalized or oppressed.

## 47-346. Human Behaviour and Social Environment: Deviant Behaviour

Examines the holistic approach to the study of the client's efforts to adapt to the social en-
vironment. Emphasis is upon understanding of abnormal or deviant adaptation to this environment and upon the traditional current view of at risk or vulnerable populations. A focus is placed on the implications for assessment and intervention in social work practice. (Open to all students. Social Work majors will be given registration priority.)

## 47-347. Family Violence

Examines all aspects of violence in the family. The primary focus is generalist social work practice family intervention in cases of abusive violence and societal provision for sheltered separation and family reconstitution or dissolution. (Open to all students. Social Work majors will be given registration priority.)

## 47-356. Serving Older People

The role of the social worker in such areas as institutionalization, community care and social support, separation and loss, family structures, and retirement, withemphasis on social policy as a determinant of services and practice. (Open to all students. Social Work majors will be given registration priority.)

## 47-357. Child Welfare

Examines issues in the present structure and functioning of services for children. The rights of children and their need for services will be examined in relation to existing services, such as protection, adoption, foster care, health services, and compulsory education, with special attention being given to the trend toward extra-family parenting responsibilities. (Open to all students. Social Work majors will be given registration priority.)

## 47-361. Field Practice I

Provides students with professionally supervised experience in community agencies and programs and with opportunities to carry generalist social work practice responsibilities. (Open only to third-year Social Work majors.) (Must be taken concurrently with 47-304, 47-336, and 47-362.) ( 100 hours per semester, normally 1 day per week.)

## 47-362. Field Practice I

(Open only to third-year Social Work majors.) (Must be taken concurrently with 47=

304, 47-336, and 47-361.) (100 hours per semester, normally 1 day per week.)

## 47-363. Field Practice I

(Open only to third-year Social Work mejors.) (Must be taken concurrently with 4 7. 337 and 47-364.) (100 hours per semester: normally 1 day per week.)

## 47-364. Field Practice I

(Open only to third-year Social Work mz jors.) (Must be taken concurrently with 47. 337 and 47-363.) ( 100 hours per semester normally 1 day per week.)

## 47-410. Social Work and the Law

Explores the evolution of law in our sociey) along with a critical examination on the insttutions which law has spawned. The legisttive, administrative, and judicial functionsol law will be studied in terms of their social inplications. Significant, current legislationwil be reviewed to understand their context purpose, development, and impact. Finding tracking, referencing, and analyzing legisetion is an integral part of this course. (Open to all students. Social Work majors will be given registration priority.)
47-412. Selected Topics in Social Work Selected topics according to faculty andstrdent interests may be offered. Topics mayin clude social issues, social work practioe issues, and issues in social welfare, orin fields of practice. All such courses musthave the approval of the Undergraduate Comnt tee and a program advisor in Social Wotk (May be repeated for credit provided the course content is not duplicated.) (Opentb all students. Social Work majors will begiven registration priority.)

## 47-436. Theory and Practice of Generalist Social Work III

Builds upon the generalist model of sood work practice presented in courses $47.36 \%$ and 47-337. It extends generalist social wort concepts to families as multi-client systems Focus will be on analysis and applicationd generalist knowledge, values and skills to assessment and intervention with familes Special time will be taken to ensure the ittegration of classroom learning with stry dents' experiences in their field placements (Prerequisite: 47-337.)

## 47-437. Theory and Practice of Generalist Social Work IV

Applies the generalist social work practice model at the macro level. It focuses on planning, implementing, and evaluating interventions with communities and human service organizations. Special emphasis will be placed upon addressing the needs and issues of oppressed and culturally diverse groups. In addition, the integration of classroom learning with the students' experiences in their field placements is emphasized. (Prerequisite: 47-436).

## 47-447. Research II: Evaluation of Social Work Practice

Prepares students to evaluate generalist social work practice. It builds on the principles covered in Foundations of Social Work Research and focuses on conducting research relevant to the evaluation of individual practice interventions, programs and policies. The course's central purpose is to enable students' to incorporate such methods in their practice with diverse clients, particulatly with those who have been marginalized or oppressed, to effectively serve them. (Prerequisite: 47-344.)

## 47-461. Field Practice II

Provides students with professionally supervised experience in community agencies and programs and with opportunities to carry generalist social work practice responsibilities. (Open only to fourth-year Social Work majors.) (Must be taken concurrently with 47-436 and 47-462.) ( 100 hours per semester, normally 1 day per week.)

## 47-462. Field Practice II

(Open only to fourth-year Social Work majors.) (Must be taken concurrently with 47 436 and 47-461.) ( 100 hours per semester, normally 1 day per week.)

## 47-463. Field Practice II

(Open only to fourth-year Social Work majors.) (Must be taken concurrently with 47 437 and 47-464.) ( 100 hours per semester, nomally 1 day per week.)

## 47-464. Field Practice II

(Open only to fourth-year Social Work majors.) (Must be taken concurrently with 47-

437 and 47-463.) (100 hours per semester, normally 1 day per week.)

## 47-456. Social Work and Health

Explores generalist social work practice with various client systems in transaction with the Canadian health care system. Systems' structural characteristics as well as their philosophical underpinnings will be surveyed in a historical and the oretical context. This will be accomplished with current social work models using the person-in-environment framework and general systems theory. (Open to all students. Social Work majors will be given registration priority).

## 47-458. Women's Issues and Social Work

Examines gender issues, social processes and policies which construct women's' realities. The course will critique issues such as: poverty, equality, unemployment and welfare, child-care, reproductive rights, mental health, physical health and domestic violence. (Open to all students. Social Work majors will be given registration priority).

## 47-459. Social Work and Criminal Justice

The role of social work in various correctional areas and the place of corrections within the criminal justice field will be critically examined, along with some of the issues which currently confront these fields of practice. Emphasis throughout will be on the community context of practice and reference to such concepts as prevention, recidivism, and treatment will be discussed in terms of the implications for practice. (Open to all students. Social Work majors will be given registration priority).

### 3.20 Sociology and Anthropology

(Ext. 2188)
OFFICERS OF INSTRUCTION

## SOCIOLOGY

## Professors Emeriti

Ferguson, John D.; B.A., M.A. (Toronto), Ph.D. (Columbia)-1968.
Whitehurst, Robert N.; B.A. (Butler), M.S., Ph.D. (Purdue)-1969.
Singh, Ripu Daman; B.A., M.A., (Lucknow), M.A., Ph.D. (Oregon)-1970.

## University Professor

Adam, Barry D.; B.A. (Simon Fraser), M.A., Ph.D. (Toronto)-1976.

## Professors

Ramcharan, Subhas; B.A., M.Sc. (U. of West Indies); Ph.D. (York)-1971.
Phipps, Alan G.; B.A. (Manchester), M.A. (Queen's), Ph.D. (lowa), M.C.I.P.-1988.
Maticka-Tyndale, Eleanor; B.A. (State University of New York, Binghamton), M.A. (McGill), Ph.D. (Calgary)-1993.

## Associate Professors

Shuraydi, Muhammad; B.A. (American U. of Beirut), Ph.D. (Alberta)-1973.
Booth, Gerald V.; B.A. (Victoria), M.A., Ph.D. (Southern Illinois)-1975.
Drakich, Janice; B.A., M.A. (Windsor), Ph.D. (York)-1989.
Basok, Tanya; B.A., M.A., Ph.D. (York)1989.

Gannagé, Charlene; B.A., M.A., Ph.D. (Toronto)-1992.
Sears, Alan; B.A., M.A. (Carleton), Ph.D. (Warwick)-1992. (Program Chair, Criminology)
Vakil, Anna C.; B.A. (Carleton), M.U.P. (McGill), Ph.D. (Michigan), M.C.I.P.-1993.
Ilcan, Suzan M.; B.A. (Saint Mary's) M.A. (Dalhousie), Ph.D. (Carleton)-1994.

Hall, Alan; B.A. (Bishop's), M.A. (Guelph) Ph.D. (Toronto)-1994. (Program Chair, La bour Studies)
Lewis, Jacqueline; B.A., M.A., Ph.D. (Toronto)-1994.
Nakhaie, M. Reza; B.A. (National Universi) of Iran), M.A. (Guelph), Ph.D. (Waterloo)1997.

## Assistant Professors

Mogyorody, Veronika; B.A. (Windsor), MA (Wayne State), B.Arch. (Detroit), Ph.D. (Rensselaer)-1977.
Lippert, Randy; B.A. (Lethbridge), M.A. (Ottawa), Ph.D. (British Columbia)-2000.
Mann, Ruth M.; B.A. (York), M.A., Ph.D. (Toronto)-2000.
Maurutto, Paula; B.Sc. (Toronto), M.A. Ph.D. (York)-2000.
O'Connor, Daniel; B.A., M.A. (Manitoba), Ph.D. (Carleton)-2000.
Pratt, Anna C.; B.A., M.A., Ph.D. (Toronto)2000.

Soulliere, Danielle; B.A., M.A. (Windsor), Ph.D. (Wayne State)-2001.

## ANTHROPOLOGY

## Associate Professors

Hedley, Max J.; B.A. (York, Eng.), M.A, Ph.D. (Alberta)-1976.
Phillips, Lynne; B.A. (British Columbia), M.A., Ph.D. (Toronto)-1989. (Head of the Department)

## Assistant Professors

Reid, Peter E. W.; B.A. (Toronto); M.A. (Manitoba); Ph.D. (SUNY at Buffalo)-1977.
George, Glynis; B.A., M.A., Ph.D. (Toronto)-2000.

## Adjunct Assistant Professors

Clark, Barry; M.Th.St. (Wilfrid Laurier)1999.

M'Claskey, Kathy; B.A., M.A. (Windsor), Ph.D. (York)-1999.
Quist-Adade, Charles; M.A. (Leningrad State U.), Ph.D. (St. Petersburg State U.)1999.

### 3.20 Sociology and Anthropology

Bourouh, Chaoura; B.A. (Constantine), M.A., Ph.D. (American U.)-2000.

### 3.20.1 PROGRAMS OF STUDY-SOCIOLOGY

Minor, general degree, four-year Honours degree, and combined four-year Honours degree programs are available in Sociology.
The study of sociology is an opportunity to leam about the many aspects of social relations, ranging from face-to-face, intimate and family relationships, to those among such social groups as households, genders, classes, movements, race and ethnic groups, unions, corporations, and governments, as well as industrial and developing societies. The faculty have particular strengths in researching social justice issues concerning AIDS, crime, occupational health, decline of family farms, First Nations, third world development, health care, employment equity, prison reform, sex work, gay and lesbian communities, immigrant workers, and Latin America and the Middle East. Please note in particular the following course sequences:
Criminology: 48-260, 48-261, 48-262, 48360, 48-361, 48-362, 48-363, 48-366, 48367, 48-368, 48-460, 48-461, 48-464, 48-465, 48-466.

Family, Sex, and Gender: 48-104, 48-204, 48-205, 48-206, 49-214, 48-251, 48-304, 48-306, 48-329, 48-350, 48-351, 48-352, 48-354, 48-409, 48-461.
Intermational Development: 49-112, 48-226, 48-227, 48-232, 48-321, 48-325, 48-327 (or 54-327), 48-330, 48-331, 48-332, 48-340, 48-352, 48-411.
Race and Ethnic Relations: 48-232, 48-240, 48-241, 48-333, 48-486, 49-331, 49-406.
Social Planning: 48-180, 48-225, 48-226 (or 49-226), 48-227, 48-228, 48-241 (or 49241), 48-280, 48-281, 48-320, 48-326, 48352 (or 49-352), 48-354, 48-380, 48-381, $48-480,50-192,50-341,50-401,50-452$, 43-347.
Work: 48-225, 48-228, 48-321, 48-326, 48332.

## Minor in Soclology

Required: six Sociology (48-) courses, including 48-101, 48-102, and four courses at the 200 level or above.

## Minor in Studies of Sexuality

Required: six of 48-205,53-215,53-220, 46240, 48-350, 48-351, 43-412, 43-463 (or 46463).

## General Sociology

Total courses: thirty.
Major requirements: ten courses, including 48-101, 48-102, 48-202, 48-210, 48-302, and 48-310 (or 49-355); plus three additional Sociology (48-) courses at the 300 or 400 level; and 49-112.
Option requirements (see 2.4.14 for subject areas):
(a) two courses from Arts or Languages;
(b) two courses from Science;
(c) four courses from any area of study, excluding Social Sciences;
(d) six courses from any area of study, including Sociology (48-);
(e) six courses from any area of study, excluding Sociology (48-) and any Anthropology (49-) courses crosslisted with Sociology.

## Honours Sociology

Total courses: forty.
Major requirements: nineteen courses, including 48-101, 48-102, 48-202, 48-210, 48302, 48-308, and 48-310 (or 49-355); two of 48-403, 48-404, 48-405, 48-406, 48-408, 48-415; two additional Sociology (48-) courses at the 300 or 400 level; plus 49-112 and one additional Anthropology (49-) course which is not cross-listed with Sociology.
Other requirements (see 2.4.14 for subject areas):
(a) 02-250;
(b) two courses from Arts or Languages;
(c) two courses from Science;
(d) four courses from Arts, Languages, or Social Sciences, including Sociology (48-);
(e) twelve courses from any area of study, excluding Sociology (48-) and any Anthropology (49-) courses cross-listed with Sociology.

## Combined Honours Sociology Programs

Total courses: forty.
Major requirements - Sociology: fifteen courses including 48-101, 48-102, 48-202, 48-210, 48-302, 48-308, 48-310 (or 49-355); and two of 48-403, 48-404, 48-405, 48-406, 48-408, 48-415 (or 49-415); plus 49-112. Two additional Sociology ( 48 -) courses must be taken at the 300 or 400 level. An introductory statistics course (02-250 or the equivalent) is required. An equivalent statistics course may be substituted for 48-308, in which case one additional Sociology (48-) or Anthropology (49-) course is required.
Major requirements - Other Subject: as prescribed by that area of study.
Other requirements:
(a) two courses from Arts or Languages;
(b) two courses from Science;
(c) additional options (if required) to a total of forty.

## Combined Honours Sociology and Criminology

Admission requirements and application procedures for entry to the third year of the combined Sociology and Criminology Honours program are as described for the Criminology Honours degree.
Total courses: forty.

## Major requirements:

(a) 48-101, 48-102, 48-202, 48-207, 48-210, 48-260, 48-261, 48-262, 48-302, 48-308, 48-310 (or 49355), 48-360, and 48-363; plus two of 48-403, 48-404, 48-405, 48406, 48-408, 48-415 (or 49-415); plus 49-112;
(b) 02-250 and 34-226;
(c) two of 46-220, 47-347, 47-410, 48. $360,48-361,48-362,48-366,48$. 367, 48-368, 48-375 (or 49-375), 48-462, 49-323;
(d) one of 48-407, 48-410, 48-460, $48-461,48-464,48-465,48-466 ;$

## Other requirements:

(a) two courses from Arts or Languages;
(b) two courses from Science;
(c) eight courses from Arts, Lan. guages, or Social Sciences, including Sociology;
(d) seven courses from any area of study, excluding Sociology (48-) and any Anthropology (49.) courses which are cross-listed with Sociology.

## COURSE DESCRIPTIONSSOCIOLOGY

Not all courses listed will necessarily be of fered each year. All courses are three hours a week unless otherwise indicated.

## 48-101. Principles and Methods of Sociology

The course is designed to acquaint students with the basic theories and methods usedby sociologists. Emphasis will be placed on such concepts as culture, socialization, sex roles, organizations, stratification, and dev. ancy. (3 lecture, or 2 lecture, 1 tutoriallaboratory hour a week.)

## 48-102. Social Institutions and Social Change

The course will focus on the description and analysis of institutions such as the family, teligion, education, polity, and economy. Changes in society reflected in population and urban living, and the ories of change will be discussed. (Prerequisite: 48-101.) (3leo ture, or 2 lecture, 1 tutoria//aboratory houra week.)

## 48-104. Family Development

An introductory examination of families and their members through a life cycle from
physiological, psychological, and sociological perspectives.
48-180. Introduction to Social Planning and Geography
A survey of the development of spatial aspects of urban life, principles of urban land use, and interaction patterns of urban activities. (Also offered as Geography 42-150.) (3 lecture hours a week.)

## 48-202. Foundations of Sociological Theory

The theories of Comte, Marx, Durkheim, Weber, and others who contributed to the development of the discipline of sociology. (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-204. Sociology of Families

Theories of the family are reviewed in both historical and cross-cultural context as an introduction to family relations and forms. Recent historical changes involving aspects of modernism are considered as they have affected structure and organization of families in Canada and other parts of the world. (Prerequisites: 48-101 and either 48-102 or 49112.)

## 48-205. Sociology of Sex

An analysis of sexual differentiation, sex role acquisition, sexual attitudes, sexual behavlour, and the sex structure of Canadian society. (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-206. Family Dynamics

An analysis of family dynamics throughout the family life cycle. Specific topics include socialization processes, dating, mate-selection, sexual expression, marital interaction, parent-child relationships, divorce, remarniage, and aging. (Prerequisite: 48-104.)

## 48-207. Canadian Social Problems

An analysis of the diverse problem areas in the complex Canadian society, including the effects of social, technological, and culture change on institutions, and the problems caused by social disorganization, intergroup conflict, deviance, and crime. (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-210. Quantitative Research

Introduction to social research focusing on classical (positivist and post-positivist) re-
search paradigms. The use of existing data, experimental methods, and survey methods will be covered. (Prerequisites: 48-101 and either 48-102 or 49-112; or Labour Studies students must have at least Semester 3 standing.)

## 48-225. Work and Organizations

An examination of the changing world of work from a variety of theoretical perspectives. The course examines workplace organization, including management strategies and workers' responses. Special topics include: work in the automobile, clothing, or other specific industries, contemporary changes in work organization and organizational issues involving class, ethnicity, and gender. (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54-100; or Labour Studies students must have at least Semester 3 standing.)

## 48-226. Introduction to International Development

An overview of the history and contemporary problems of economic development and underdevelopment and their effects upon marginalized populations; an assessment of issues such as the impact of colonialism, the nature and function of the global economy, the problems of food production, economic dependency, cultural resistance, and social change. (Also offered as Anthropology 49226.) (Prerequisites: any two of 48-101, 48102, 49-111, 49-112, or 54-100.)

## 48-227. Globalization and Social Change

 An analysis of global and local social factors leading to the rise and decline of authoritarian, liberal democratic and post-revolutionary state systems in Canadian and Latin American societies. Topics include the formation of international elites and trading blocs, the pressure to restructure, and popular responses to globalization. (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54-100.)
## 48-228. Class, Wealth and Power in Canada

The study of structured social inequality. The existence of class and power structures and their effects on the lives of Canadians. The relation of different forms of inequality based on class, ethnicity, and gender. The various
strategies people employ to respond to inequality. (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54-100.)

## 48-232. Indigenous Peoples: A Comparative Perspective

A cross-cultural examination of issues conceming indigenous peoples in Canada and other parts of the world through a discussion of topics such as land claims, resource development, resistance, cultural rights, popular movements, and government policy. (Also offered as Anthropology 49-232.) (Prerequisites: any two of 48-101, 48-102, 49111, 49-112, or 54-100.)

## 48-234. Sociology of Everyday Life

A study of how face-to-face, person-to-person interaction is sustained in human society. The course is built around the fact that human beings operate on the level of symbolic meanings. It thus takes into account the ways in which framing, or definition of a situation influences the character of the interaction. Included is the study of the underlying structures of social interaction, such as the organization of talk, spatial relationships, and body-language. (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-235. Identity Processes

An exploration of the pivotal role identity plays in the organization and actions of social life. (Also offered as Psychology 46 235.) (Prerequisites: 48-101 and either 48-102 or 49-112; alternate prerequisites: 46-115 and 46-116.)

## 48-236. Introduction to Social Psychology

An introduction to the theories, methods, findings, and problems associated with the study of the individual in the social context. Topics include social cognition; interpersonal behaviour (attraction, aggression, altruism); social attitudes, prejudice, and discrimination; social influence and group processes (conformity, leadership, intergroup relations). (Also offered as Psychology 46-236.) (Prerequisites: 46-115 and 46-116, or 48-101 and 48-102.)

## 48-240. Ethnic Relations in Canada

Astudy of ethnic minorities in pluralistic Canada, with particular focus on immigration
trends, theories of assimilation and ethnic retention, policies of multiculturalism, differential adaptation, separatist movements, and the pursuit of collective rights. (Also of fered as Anthropology 49-240.) (Prerequistes: 48-101 and 48-102, or 49-111 and 49-112, or consent of instructor.)

## 48-241. Race and Racism in Canada

An analysis of the nature and practice of ra. cism, and the role and status of racial minorities in Canada, focusing on causes and consequences of racism, forms of discrimination, anti-racist struggles, and policy initiatives for the creation of an egalitarian society. (Also offered as Anthropology 49. 241.) (Prerequisites: any two of 48-101, 48102, 49-111, 49-112, or 54-100, or consent of the instructor.)

## 48-251. Women and Diversity

Examines the intersection of gender with other oppressions experienced by groups such as women of colour, older women, disabled women, working-class women, and lesbians. The perspective taken is the critical analysis of gender offered by feminism(s). (Also offered as Women's Studies 53-201.)

## 48-280. Urban Design

An introduction to the visual and spatial elements which affect urban form. The course includes a survey of analytical methods employed in the design process, such as: assessment and monitoring of user needs, analysis of environmental contexts, and the incorporation of new technologies. (Also offered as Planning 50-251.) (3 lecture hours a week.)
48-281. Contemporary Architecture A survey of the roots of contemporary architectural theory through an examination of representative structures since the Industrial Revolution. Students will be introduced to those individuals who have played a central role in the development of architectural thought in North America. (Also offered as Planning 50-291 and Art History 28-391.) (3 lecture hours a week.)

## 48-302. Contemporary Sociological

 TheoryA review of modern theoretical approaches in sociology. Emphasis is placed on current
schools of thought, such as Symbolic Interactionism, Structural-Functionalism and other approaches. (Prerequisite: 48-202.)

## 48-304. Evaluation Research

An examination of the approach and methods of evaluating programs and policies in public and private organizations with the purpose of designing interventions, monitoring implementation, and assessing effectiveness. (Prerequisite: 48-210 or consent of instructor.)

## 48-305. Religion

The study of the interrelations between religious phenomena and social institutions, social structure and human behaviour. (Also offered as Anthropology 49-305.) (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112.)

## 48-306. Sociology of Women

An overview of the economic, educational, familial, political, and religious factors affecting the position of women in society. A sociohistorical analysis of the change in the roles and status of women in Canada and internationally with a view to understanding the nature of their impact upon major societal institutions. (Also offered as Anthropology 49-306.) (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112.)

## 48-308. Intermediate Statistics

Basic inferential statistics, including estimation, confidence intervals, and hypothesis testing. Also included is the application of computer packages to selected statistical problems. (Also offered as Geography 42 231 and Planning 50-231.) (Prerequisite: 02-250.) (2 lecture hours, 1 laboratory hour a week.)

## 48-309. Visual Sociology

An inquiry into the social dimensions of visualimagery: how society both produces and responds to images. The course will include an introduction to research in which visuals are used as data. Students may be required to complete a project using at least one of the three standard visual media: still photography, film, and video. (1 lecture hour, 2 laboratory hours a week.)

## 48-310. Qualltative Research

An introduction to interpretive research strategies, such as participant observation, historical comparative analysis, interviewing, and discourse analysis. Ethical issues raised in research will also be discussed. (Prerequisites: 48-101, 48-210, and either 48-102 or 49-112; or Labour Studies students must have at least Semester 5 standing.)

## 48-320. Environment and Culture

Considers the relationship between humans and their physical and biological environment. Topics include environmental influences on human growth and development, risk and risk assessment, adaptive responses to changes in environmental conditions, toxicology and human health, and environmental influences on genetic variation. (Also offered as Anthropology 49320.)

## 48-321. Formal Organizations in Comparative Perspective

An examination of the organization of work in national and cultural contexts. The focus is on the influence of societies, including their traditions, languages, and institutions on the organization of work. This course examines organizations in comparative perspective, looking at Japanese or other managerial strategies in industrialized and newly industrializing countries. (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112; or Labour Studies students must have at least Semester 5 standing.)

## 48-325. Introduction to African Development

A multidisciplinary course introducing students to developmental issues currently confronting African countries and peoples, focusing on the sub-Saharan region. Using a sectoral approach, including health, education, agriculture, and the environment, the course reviews multiple and conflicting approaches to development and addresses both the potentials and the barriers associated with them. (Also offered as Geography 42-361 and Anthropology 49-325.)

## 48-326. Work and Occupations

An examination of occupations and the changing labour market. This course exam-
ines the ways people choose occupations and develop careers, the nature of professions and professionalization, unemployment and its consequences, and the influence of occupations on individuals and society in a wider sense. Special topics include the impact of technological change on the occupational structure of younger and other populations. (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54-100; or Labour Studies students must have at least Semester 5 standing.)

## 48-327. Social Movements

An examination of theories and case studies of world revolutions, class struggles, and various social movements, such as the feminist, gay and lesbian, labour, native, ecological, and other movements. (Also offered as Labour Studies 54-327.) (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or $54-100$; or Labour Studies students must have at least Semester 5 standing.)

## 48-329. The Family and Social Change

An analysis of social change and the family in contemporary societies, with emphasis on current trends in the Canadian family, including such issues as aging, divorce, children's issues, gender equality, and evolving family forms. (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112; and 48-204.)

## 48-330. Latin America: A Comparative Perspective

Selected problems of rural and urban development, the debt crisis, nationalism, and cultural change will be examined through an analysis of specific Latin American countries. (Also offered as Anthropology 49-330.)

## 48-331. Collective Behaviour

Psycho-social analysis of mass behaviour, fads and crazes, crowds and mobs, and religious cults. (Prerequisites: any two of 48101, 48-102, 49-111, 49-112, or 54-100.)

## 48-332. Labour and the Industrialization Process

The development of Canadian industry and workers' responses to industrialization are examined. Special topics may include early industrialization and its effects, the develop-
ment of monopoly capitalism, the emergence of service and other new industries, the impact of new technologies, changes in the division of labour, the impact of globalization and economic restructuring, the dovelopment of new management approaches such as lean production, changes in women's work, the development of labour unions, and the role of women, youth, and minorities at work. (Prerequisites: any two of 48-101, 48-102, 49-111, 49-112, or 54-100; or Labour Studies students must have af least Semester 5 standing.)
48-333. Nationalism and Ethnic Conflict An analysis of ethnic identity, ethnic group formation, ethnopolitical mobilization, nationalism, racism, ethnic conflicts, ethnic violence including genocide, and contlict resolution in various societies throughout the world. (Also offered as Anthropology 49 333.) (Prerequisites: any two of 48-101, 48102, 49-111, 49-112, or 54-100.)

## 48-334. Dynamics of Interaction

Interaction with others is a central activity in everyday life. This course examines processes of interaction, such as negotiation, conflict, coalition building, and communication in the context of interpersonal and group relations. (Prerequisites: 48-101 and eilher 48-102 or 49-112; 48-235 is recommended.)

## 48-335. Human Growth and Aging/Gerontology

General and cross-cultural aspects of body growth, maturity and aging; influence of so-cio-cultural environments; social systems, longevity and aging; a demographic profle of the aged in Canada. Medical technology and the aged; problems of the aged in Ca . nadian context. Theories on aging and theif significance. (Also offered as Anthropology 49-335.)
48-336. Medical Anthropology/Sociology A brief history of the development of the dis: cipline. Problems and the nature of health and diseases in ancient and modern human populations; concepts of health and disease and indigenous medical systems. Aspectsol social organization and the prevalence of diseases. Roles of curers, medical practitioners, support staff, patients, and their interrelations; technological innovations and the
problems of health. (Also offered as Anthropology 49-336.) (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112.)

## 48-337. Demography and Epidemiology

 An introduction to the basic concepts and techniques of demography and epidemiology. Through a survey of methods, students assemble and critically examine population data. Topical areas include development and health status, health of aboriginal peoples, crime statistics, and demographic profliling of special populations, i.e., the aged, women, ethnic groups, young offenders, etc. (Also offered as Anthropology 49-337.) (Prerequisites: 48-101 and 48-102, or 49-111 and 49-112.)48.340. Food and Global Sustainability A comparative examination of the emergence of a global food system and its implications for culture and the environment. (Also offered as Anthropology 49-340.)

## $48-350$. Theories of Sexuality

A consideration of various theoretical models applied to the study of human sexuality. Specific topics include socio-historical perspectives, feminist issues, men's studies, gay and lesbian studies, forms of sexual imagery and expression, and the social impact of sexually transmitted disease. (Prereqvisite: 48-205 or consent of instructor.)

## 48-351. Gay and Lesbian Studies

A multidisciplinary review of critical issues in the social organization and representation of same-sex bonding, including discussion of: cross-cultural studies, historical constructions of homosexuality and romantic friendship, coming out and identity, relationships and family, theories of homophobia and sexual repression, the development of communities and social movements in modern societies, the impacts of AIDS, and the emergence of queer theory.

## 48-352. Women and International Development

An examination of the impact of global processes on gender relations, including a consideration of the importance of cross-cultural variations in the family, politica//economic systems, and gender ideologies. (Also offered as Anthropology 49-352.) (Prereq-
uisite: 48-226 or 49-226, or consent of instructor.)

## 48-354. Gender, Space, and Time

An examination of sociological and anthropological approaches to the study of spacetime relations within the field of gender studies, including a focus on the development of gendered environments and cultural practices. (Also offered as Anthropology 49354.) (Prerequisites: 48-101 and 48-102; or 49-111 and 49-112.)

## 48-355. Field Methods in Anthropology

Examination of questions of ethics, responsibility, and objectivity in problem formulation, research design, and data collection. Historical and contemporary significance of fieldwork to anthropology and social science generally. Techniques of fieldwork and data collection methods. The development of a limited research project will be encouraged. (Also offered as Anthropology 49-355.) (Prerequisite: 49-112 or consent of instructor.)

## 48-375. Social Justice in the Global Context

An examination of social justice from an anthropological perspective including, but not limited to, minority rights and world development problems. (Also offered as Anthropology 49-375.) (Prerequisite: 49-213.)
48-380. Social Planning and Geography An introduction to the history of social geographical ideas, and the modern and postmodern concepts in social geography, with special application to western cities. (Also offered as Geography 42-337 and Planning 50-337.) (Prerequisite: one of 42-130, 42131, 42-150, or 48-180.) (3 lecture hours a week.)

## 48-381. Neighbourhood Planning

The theory and methods of urban planning in Canadian communities, with emphasis on: social issues in inner city neighbourhoods, planning for the inner city, and the roles of planners in residential communities. (Also offered as Planning 50-342.) ( 3 lecture hours a week.)

## 48-403. Culture and Ideology

The study of the influence of social location on human understanding, including the social organization, creation, and distribution
of knowledge. Topics may include how social practices shape scientific knowledge, the origins of common sense and conventional wisdom, how politics affect medical definitions, and cultural constructions of class, gender, race, and sexuality. (Prerequisite: 48-302, or consent of instructor.)

## 48-404. Theories of Postmodernism

An inquiry into the sociological dimensions of the current debate over modernity, postmodernity, and poststructuralism. The course will critically discuss Enlightenment legacy embodied in contemporary debates over science, knowledge, representation, subjectivity, power, and liberation. It will ask such questions as: Is the modern world coming to an end, or a new beginning? Do conventional ways of conceptualizing social relations need reformulation? Have metanarratives come to an end? (Prerequisite: 48-302, or consent of instructor.)
48-405. Symbolic Interactionist Theories An exploration of the methodological and theoretical perspectives within symbolic interactionism. These distinct perspectives encompass the classical Meadian tradition, dramaturgy, ethomethodology, reality construction, and the most recent thoughtways of reflexive sociology and cultural studies. (Prerequisite: 48-302, or consent of instructor.)

## 48-406. Marxist Social Theories

An examination of the central concepts of Marxist theories. The course will cover the evolution of Marxist theories as well as current debates about the relationship of Marxism to feminism, social movements, culture, and contemporary class structures. (Prerequisites: 48-202, and 48-302 or consent of instructor.)
48-407. Alcohol, Drugs, and Society
A primarily social science orientation to alcohol and drugs with a focus on social structure, social learning, and public policy. Advanced concepts and issues surrounding substance use and abuse are introduced in a critical examination of current theoretical and research paradigms. Legislative, law enforcement, treatment, and prevention strategies are described and evaluated. Special topics include problems of alcohol
and drugs as related to sports, work, crime, and the current "war on drugs". (Also offered as Anthropology 49-407.) (Prerequisites 48-260, 48-302, and 48-310 (or 49-353), or consent of instructor.)

## 48-408. Feminist Theories

Classical and contemporary theories andresearch in feminist analysis, which may include liberal, radical, socialist, postcolonial and poststructural versions of feminism, and queer theory. (Prerequisite: 48-302, or consent of instructor.)
48-409. Family, Gender and Culture A critical examination of key issues and debates in the study of family relations with an emphasis on gender politics and ideologies. Topics may range from explanations of the diverse images and meanings of familiesto issues of moral regulation, pro-family movements, and reproductive policies. (Preereuisite: 48-204 or consent of instructor.)

## 48-410. Crime and Culture in a Global Context

This seminar course examines the cultural construction of crime. The course will focus on the effects of imposing laws, methodsol judging, and definitions of criminality in various social cultural contexts, including those that are indigenous and colonized. (Also of fered as Anthropology 49-410.) (Prerequisites: 49-213 or 48-260, and one of 48-310, 49-330, 49-352, 49-355, or 49-375.)
48-411. Challenging Global Developmert A critical examination of theories and polF cies of global development and underdevet opment, including explorations of altematives to modernization. (Also offered as Anthropology 49-411.) (Prerequisites: $48{ }^{-}$ 226 or 49-226, or consent of instructor.)

## 48-415. Culture, Class, and Power

Discussion of the theoretical issues raised by application of cultural theory in a glotal context, including a discussion of contemporary theoretical approaches to under: standing the way local cultural practice is influenced by macrosocial processes, and including an assessment of the post-mod. emist critique of anthropology. (Also offered as Anthropology 49-415.) (Prerequisite: 48. 302 , or any two 200 -level or higher Antho-
pology (49-) courses, or consent of instruc10r.)

## 48-416. Methods of Survey Research

The design, implementation, and analysis of sample surveys will be carried out through completion of a sample survey. Topics will indude research design, questionnaire construction, and techniques of interviewing, coding, and data analysis. (Prerequisites: 48-210, 48-308, or consent of instructor.) (3 lecture hours, or 2 lecture hours, 1 tutoniallaboratory hour a week.)

## 48-418. The Ethnography

An exploration of the methodological and theoretical implications of the ethnography in the social sciences, including historical and contemporary approaches to ethnographic writing. (Also offered as Anthropology 49-418.) (Prerequisite: 49-213 or consent of instructor.)

## 48-420. Special Topics in Power and Social Change

The focus of this seminar may vary from term to term; consult a Sociology program advisor for details. (Prerequisite: 48-302, or consent of instructor.)

## 48-421. Special Topics in Social Psychology

Topics may vary from term to term; consult a Sociology program advisor for details. (Prerequisite: 48-302, or consent of instructor.)

## 48-425. Field Studies

A field course designed to give advanced students the opportunity to study cultures and environments in Canada and elsewhere. The focus and selected topics will vary with the geographic location. An additional fee will be charged to cover travel and accommodation costs. (Also offered as Anthropology 49-425.) (Prerequisites: 49-111, 49-112, and three 200-or 300-level courses.)

## 48-480. Housing Policy

A study of social issues related to housing. Emphasis is on the supply, demand, and legal aspects of housing policy, as well as current, pressing issues such as affordability and sustainability. (Also offered as Planning $50-403$.) (3 lecture hours a week.)

## 48-486. Minorities, Women, and the Mass Media

Using critical cultural studies theory, the course studies power and representation, introducing the voices of diverse groups who are often silenced or distorted by mainstream media. It examines both the means used to identify, label, objectify, symbolically annihilate and stereotype, and counter hegemonic texts that critique ideologies which institutionalize racism, sexism, classism, and heterosexism. (Also offered as Communication Studies 40-486.) (Recommended prerequisite: one or more of 40202, 40-262, 40-275, 40-361, 40-461, 48-241, 48-306, 49-306, or 48-333.)

## 48-496. Honours Essay

Independent research or internship conducted under the supervision of an individual faculty member. (Prerequisites: 48-302, and one of 48-310, 49-355, or 48-360, or consent of instructor.)

### 3.20.2 PROGRAMS OF STUDYCRIMINOLOGY

## Certificate in Criminology

See "Certificate Programs", 3.23.2.
The Criminology degree combines courses from several areas to provide a broad liberal arts background with specialization in all areas of criminology: theory and methods, crime and criminals, criminal justice, sociology of law, and penology.

## Honours Criminology

The number of places available in the third year of the Criminology Honours program is limited, and admission will be competitive. Entry shall be for the Fall term only. Students are eligible to apply for entry into the third year of the program after the completion of twenty courses, which shall include 48-101, 48-102, 48-202, 48-207, and 48-260; plus two of 46-220, 48-261, and 48-262; and 34226. Applications and information sheets are available at the Office of the Registrar and must be returned to that office by May 1st.

### 3.20 Sociology and Anthropology

No late applications will be accepted. Decisions will be rendered by June 1st, with notification shortly thereafter.
Total courses: forty.
Major requirements: nineteen courses, including
(a) 48-101, 48-102 (or 49-112), 48202, 48-207, 48-210, 48-260, 48261, 48-262, 48-302, 48-308, and 48-310 ( or 49-355);
(b) 02-250 and 34-226;
(c) four of 43-287, 46-220, 47-347, 47410, 48-360, 48-361, 48-362, 48-363, 48-366, 48-367, 48-368, 48-375 (or 49-375), and 49-323;
(d) two of 48-407 (or 49-407), 48-410 (or 49-410), 48-460, 48-461, 48464, 48-465, 48-466.

Other requirements (see 2.4.14 for subject areas):
(a) five courses from Arts, Languages, or Social Sciences, including Sociology;
(b) two courses Arts or Languages;
(c) two courses from Science;
(d) twelve courses from any area of study, excluding Sociology (48-) and any Anthropology (49-) courses cross-listed with Sociology.

## RECOMMENDED COURSES

Second Year: 45-214, 45-220, 48-232, 48234, 48-235, 48-333.
Third Year: 45-326, 46-233, 46-330, 48-306 (or 49-306), 48-331, 48-334, 49-430.
Fourth Year. 43-448, 46-433, 48-461.
Notes:

1) Criminology Honours students interested in graduate studies should take two courses from 48-403, 48-404, 48-405, 48406, 48-408, or 48-415 (or 49-415), since these courses or their equivalents are required for admission to the graduate program
2) Students interested in government sen. ice should include French language coursen among their options; other non-English lann guage courses also are recommended.

## Combined Honours Criminology Pro grams

Admission requirements and application procedures for entry to the third year of any other program combining Criminology Horours with another subject are as abovelor Criminology Honours.
Total courses: forty.
Major requirements-Criminology: eighteen courses, consisting of:
(a) 48-101, 48-102 (or 49-112), 48. 202, 48-207, 48-210, 48-260, 48261, 48-262, 48-302, 48-308, and 48-310 (or 49-355);
(b) 02-250 and 34-226;
(c) four of 43-287, 46-220, 48-337, 48360, 48-361, 48-362, 48-363, 48-366 48-367, 48-368, 48-375 (or 49375), and 49-323;
(d) one of 48-407 (or 49-407), 48-410 (or 49-410), 48-460, 48-461, 48464, 48-465, 48-466.

An equivalent statistics course may be substituted for 48-308, in which case one addtional Sociology (48-) or Anthropology (49): course is required.
Major requirements - Other Area of Study as prescribed by that area of study.
Other requirements (see 2.4.14 for subject areas):
(a) two courses from Arts or Lant guages;
(b) two courses from Science;
(c) additional options (if required) pa total of forty.

## COURSE DESCRIPTIONSCRIMINOLOGY

48-260. Introduction to Criminology
Theories and research in crime causation, the nature and extent of crime and criminat

### 3.20 Sociology and Anthropology

behaviour systems. (Prerequisites: 48-101 and either 48-102 or 49-112.)
48-261. Law and Society
Astudy of the mutual influence between legal and social systems. Topics include the relationship between formal and informal legal practice, the influence of social factors on jurisprudence, and the effect of law on social change. Materials may be drawn from crosscultural as well as Canadian sources. (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-262. Administration of Criminal Justice

This course seeks to provide the student with a basic understanding of some of the fundamental principles of Cana dian criminal law and of selected features of the administration of criminal justice in Canada. Topics such as the history and background of the criminal law, the basis of criminal liability, the criminal courts, discretion in the criminal process, and penal policy will be discussed. (Also offered as Law 99-215.) (Open only to students enroled in Criminology or Certificate in Criminology and Criminal Justice programs.) (Prerequisites: 48-101 and either 48-102 or 49-112.)

## 48-360. Criminological Theory

An examination of theoretical developments in criminology. (Prerequisites: 48-207, 48260, and 48-261.)
48-361. Youth in Conflict with the Law The course covers theories of delinquency causation, the juvenile justice system, Young Offenders Act, prevention, and treatment programs for juveniles. (Prerequisite: 48-260.)

## 48-362. Victimology

Anew emphasis in criminology has been on the role of the victim in crime. This course focuses on victim precipitation, restitution, and the varied involvement in and consequences of crime on the crime victim. (Prerequisite: 48-260.)

## 48-363. Penology

Study of the correctional institution including the impact of prison on inmates, the prison subculture, prison architecture, and administration, special institutions, and the assess-
ment of education, occupational, recreational, and treatment programs. (Prerequisite: 48-260.)
48-366. Selected Topics in Criminology (Prerequisites: 48-260, 48-261, and 48262.)

## 48-367. Corporate Deviance and Crime

The course will examine the issues of individual level professional and white-collar crime and broader corporate and institutional practices. Law creation and enforcement will be considered along with analyses aimed at explaining corporate and institutional behaviour. Topical areas will include occupational health and safety, employment and labour law, environmental law, food and drug safety, price fixing, stock and money trade infractions, tax fraud, bribery and influence peddling, and intemational trade practices. (Prerequisites: 48-260, 48-261, and 48-262, or consent of instructor.)

## 48-368. Policing Society

An overview of the institutional context of public and private policing in Canadian society. The student will be introduced to the historical development of policing and to the concepts of police discretion, accountability, organization, and autonomy. (Prerequisites: 48-260, 48-261, and 48-262.)

## 48-460. Social Construction of Deviance

 An investigation of theory and research concemed with deviant behaviour. Topics may include: moral entrepreneurs and symbolic crusades, the medicalization on deviance, elite deviance, labeling mental illness and drunk driving, studies of the police, social agencies, correctional programs, and the treatment of mental iliness. (Prerequisites: 48-207, 48-210, 48-260, 48-261, 48-262, 48-302, 48-310 (or 49-355), and 48-360, or consent of instructor.)
## 48-461. Family Law and Social Policy

This course examines the law and government policies applicable to the family with a view to determining their impact upon the family. Particular topics may include family law reform, divorce and property rights, the care and custody of children, and definitions of family. (Prerequisites: 48-204, 48-210,

### 3.20 Sociology and Anthropology

48-260, 48-261, 48-302, and 48-310 (or 49355 ), or consent of instructor.)

## 48-464. Sociology of Law

An investigation of the theoretical and research problems in jurisprudence, legal structures, and legal behaviour. Focus of the course will vary by instructor. (Prerequisites: 48-210, 48-260, 48-261, 48-262, 48-302, 48-310 (or 49-355), 48-360, or consent of instructor.)

## 48-465. Women, Law, and Crime

This course will examine major issues in the study of law and crime relevant to women. It will include a discussion of females as criminal offenders and as victims of crime, as well as addressing a variety of current topics in feminist legal scholarship, such as an examination of legislation governing women's bodies (e.g., abortion, sexual assault, prostitution, pornography, reproductive technologies). Focus of the course will vary by instructor. (Prerequisites: 48-207, 48-210, 48-260, 48-261, 48-262, 48-302, 48-310 (or 49-355), and 48-360, or consent of instructor.)

## 48-466. Crime and Criminology

An advanced critical analysis of theory and research on crime and criminality. Focus of the course will vary by instructor. (Prerequisites: 48-210, 48-260, 48-261, 48-262, 48-$302,48-310$ (or 49-355), and 48-360, or consent of instructor.)

### 3.20.3 PROGRAMS OF STUDYANTHROPOLOGY

Minor, general degree, four-year Honours degree, and combined four-year Honours degree programs are available in Anthropology.
The Anthropology program in the Department of Sociology and Anthropology is organized around the study and analysis of culture in contemporary and ancient societies.
The major in Anthropology is designed to provide a broad background in cultural issues from the perspectives of archaeology, physical anthropology, and socio-cultural anthropology.

The Honours degree in Anthropology provides a greater depth and understandingol research methods and cultural theory in the discipline. It offers students the opportunity to fulfill the requirements for high school teaching certificates, to become more profcient in dealing with social research, and to allow for greater concentration in specialized areas of anthropology.

## Minor in Anthropology

Required: six Anthropology (49-) courses, including 49-111, 49-112; and at least one di 49-213, 49-215, or 49-217.

## General Anthropology

Total courses: thirty.
Major requirements: twelve courses, including 49-111, 49-112, four 200-level coursesin Anthropology, and six additional Anthropology courses. At least four of the twelverequired courses must be at or above the 300 level.

Other requirements (see 2.4.14 for subjat areas):
(a) two courses from Arts or Languages;
(b) two courses from Science;
(c) four courses from areas of study outside of Social Sciences;
(d) four courses from any area of study, including Anthropology (49-) and any Sociology (48-) courses which are cross-listed with Anthropology;
(e) six courses from any area of sludy, excluding Anthropology (49-) and any Sociology (48-) courses which are cross-listed with Anthropot ogy.

## Honours Anthropology

Total courses: forty.
Major requirements: twenty courses, including 49-111, 49-112, 49-356, 49-415, and 44 418; plus three additional 200 -level Anthropology (49-) courses; plus five adótional 300-level Anthropology (49-) courses and six additional Anthropology (49.) courses; plus 02-250.

Other requirements (see 2.4.14 for subject areas):
(a) any two Sociology (48-) courses which are not cross-listed with Anthropology (49-);
(b) two courses from Arts or Languages;
(c) two courses from Science;
(d) four more courses from Arts, Languages, Social Sciences, or Science, excluding Anthropology (49-) and any Sociology (48-) courses which are cross-listed with Anthropology;
(e) six more courses from Arts, Languages, Social Sciences, or Science, including Anthropology (49-) and any Sociology (48-) courses which are cross-listed with Anthropology:
(f) four courses from any area of study, excluding Anthropology (49-) and any Sociology (48-) courses which are cross-listed with Anthropology.

Note: Anthropology Honours students interested in graduate studies in Sociology should include the following courses in their program: 48-302, 48-308, plus two courses from 48-403, 48-404, 48-405, 48-406, or their equivalents.

## Combined Honours Anthropology Programs

Total courses: forty.
Major requirements-Anthropology: sixteen courses, including 49-111, 49-112, 49-356, 49-415, and 49-418; plus three Anthropology (49-) courses at the 200 level; and five Anthropology (49-) courses at the 300 level; plus two additional Anthropology (49-) courses; and 02-250.
Major requirements-Other Area of Study: as prescribed by that area of study.
Other requirements:
(a) two courses from Arts or Languages;
(b) two courses from Science;
(C) additional options (if required) to a total of forty.

## COURSE DESCRIPTIONSANTHROPOLOGY

Not all courses listed will necessarily be offered each year. All courses are three hours a week unless otherwise indicated.
Students wishing to concentrate in the area of international development in anthropology should consider the following guide for course selection: 49-112, 49-226 (or 48226), 48-227, 49-232 (or 48-232), 48-321, 49-325 (or 48-325), 48-327 (or 54-327), 49330 (or 48-330), 49-331, 48-332, 49-340 (or 48-340), 49-352 (or 48-352), and 49-411 (or 48-411).

## 49-111. The Human Condition in an Evolutionary Perspective

An introduction to the biological evolution of humanity and the culltural evolution of human society, including a consideration of the significance of humanity's evolutionary past for an understanding of the contemporary world.

## 49-112. Culture in Comparative Perspective

An introduction to the variety of human cultures throughout the contemporary world. An examination of the significance of cultural anthropology for overcoming the barriers preventing the understanding of other cultures and ourselves.

## 49-213. Perspectives on Culture

An examination of the emergence, development, meaning, and idea of culture. The different ways the concept is used in applied anthropology, ethnographic research, and popular discourse are discussed. (Prerequisite: 49-112.)

## 49-214. Gender and Culture in Anthropology

Current perspectives in anthropology on the intersection of gender and culture. Examines cross-culturally the themes of gender relations, concepts of masculinity and femininity, and gender-related power and politics. (Prerequisite: 49-112.)

## 49-215. Introduction to Physical Anthropology

A study of humans as biological beings, humans in evolutionary context and their spe-

### 3.20 Sociology and Anthropology

cializations; their nearest living relatives and varieties. Sources and the nature of variations in living human populations; significance of the variations and the concept of race; approaches to the problems of evolution of human populations. (Prerequistes: 49-111 and 49-112, or consent of instructor.)

## 49-217. Principles of Archaeology

A survey of the history, theory, and methods of anthropological archaeology. Emphasis is placed on archaeology's role as a social science, aimed at documenting and explaining past human cultural behaviour. (Prerequisites: 49-111 and 49-112, or consent of instructor.)

## 49-220. Regional Aboriginal Archaeology

Several important processes in the historical evolution of Native cultures in the Lower Great Lakes region are examined through the results of recent archaeological research. Topics include the peopling of the region, the development of farming, and early interactions with European culture. (Prerequisites: 49-111 and 49-112.)

## 49-226. Introduction to International Development

An overview of the history and contemporary problems of economic development and underdevelopment and their effects upon marginalized populations; an assessment of issues such as the impact of colonialism, the nature and function of the global economy, the problems of food production, economic dependency, cultural resistance, and social change. (Also offered as Sociology 48-226.) (Prerequisites: any two of 49-111, 49-112, 48-101, 48-102, or 54-100, or consent of instructor.)

## 49-232. Indigenous Peoples: A Comparative Perspective

A cross-cultural examination of issues conceming indigenous peoples in Canada and other parts of the world through a discussion of topics such as land claims, resource development, resistance, cultural rights, popular movements, and government policy. (Also offered as Sociology 48-232.) (Prerequisites: any two of 49-111, 49-112, 48-101, 48-102, or 54-100.)

## 49-233. Selected Topics in World Ethnography

Issues arising from the worldwide variation in the human condition are examined using ethnographic descriptions from different parts of the world. Topics may include outtural ecology, political organization, warfare, colonialism, and ethnic and national identties. The topics and cultures discussed map vary from year to year. (Prerequisites: 49 111 and 49-112.)
49-240. Ethnic Relations in Canada A study of ethnic minorities in pluralistic Canada, with particular focus on immigration trends, theories of assimilation and ethic retention, policies of multiculturalism, dillerential adaptation, separatist movements, and the pursuit of collective rights (Also dfered as Sociology 48-240.)

## 49-241. Race and Racism in Canada

An analysis of the nature and practice of 6 cism, and the role and status of racial minoorties in Canada, focusing on causes and consequences of racism, forms of discimit nation, anti-racist struggles, and policy initiotives for the creation of an egalitarian society. (Also offered as Sociology 48-24.1.) (Prerequisites: any two of 49-111, 49-112 48-101, 48-102, or 54-100, or consent of the instructor.)

## 49-305. Religion

The study of the interrelations betweenrelig. ious phenomena and social institutions, $50-$ cial structure and human behaviour. (Also offered as Sociology 48-305.) (Preres: uisites: 49-111 and 49-112, or 48-101 and 48-102.)

## 49-306. Sociology of Women

An overview of the economic, educational familial, political, and religious factors affed: ing the position of women in society. Asocihistorical analysis of the change in the roks and status of women in Canada and intemstionally with a view to understanding the ner ture of their impact upon major societal institutions. (Also offered as Sociology 48 306.) (Prerequisites: 49-111 and 49-112, $\alpha$ 48-101 and 48-102.)

49-317. Selected Topics in World Archaeology
Current archaeological thinking on serveral important episodes of humanity's cultural evolution are discussed. Topics include the human condition in the Pleistocene, the development of farming, the origins of civilization, and the archaeology of ethnicity. (Prerequisite: 49-217.)

## 49-318. Field School: Excavation and Recovery Methods

An introduction to the use of field recovery methods used in archaeology and/or forensicinvestigations. Emphasis is placed on the collection of information, analyzing data, description and classification, and interpretafion. (Additional fees may be necessary to defray the costs of accommodation or meals on site.) (Prerequisites: 49-111, 49-112, and 49-217.)

## 49-320. Environment and Culture

Considers the relationship between humans and their physical and biological environment. Topics include environmental influences on human growth and development, risk and risk assessment, adaptive responses to changes in environemental conditions, toxicology and human health, and environmental influences on genetic variation. (Also offered as Sociolology 48-320.)

## 49-323. Forensic Anthropology

Asurvey of the history and methods of forensic anthropology (medico-legal aspects). Students are introduced to the basic matenials, methods, and techniques used in identifying human individual(s) on the basis of population groups, gender, age, and individual characteristics emerging from available evidences; the significance of these to anthropologists and criminologists. (Prerequisite: one of 49-111, 49-215, or consent of instructor.) (Restricted only to majors in Anthropology, Sociology, Criminology, Family and Social Relations, or Biology.) (2 lecture hours, 1 laboratory hour a week.)

## 49-325. Introduction to African Development

A multidisciplinary course introducing students to developmental issues currently confronting African countries and peoples, focusing on the sub-Saharan region. Using
a sectoral approach, including health, education, agriculture, and the environment, the course reviews multiple and conflicting approaches to development and addresses both the potentials and the barriers associated with them. (Also offered as Geography 42-361 and Sociology 48-325.)

## 49-330. Latin America: A Comparative Perspective

Selected problems of rural and urban development, the debt crisis, nationalism, and cultural change will be examined through an analysis of specific Latin American countries. (Also offered as Sociology 48-330.)

## 49-331. Aboriginal Peoples of Canada

 An examination of aboriginal communities in Canada and the processes leading to their transformation. The course will focus on specific ethnographic examples and provide an in-depth analysis of different ways of life. (Prerequisite: 49-232 or 48-232 or consent of instructor.)49-333. Nationalism and Ethnic Conflict An analysis of ethnic identity, ethnic group formation, ethnopolitical mobilization, nationalism, racism, ethnic conflicts, ethnic violence including genocide, and conflict resolution in various societies throughout the world. (Also offered as Sociology 48333.) (Prerequisites: any two of 49-111, 49112, 48-101, 48-102, or 54-100.)

## 49-335. Human Growth and Aging/Gerontology

General and cross-cuitural aspects of body growth, maturity and aging; influence of so-cio-cultural environments; social systems, longevity and aging; a demographic profile of the aged in Canada. Medical technology and the aged; problems of the aged in Ca nadian context. Theories on aging and their significance. (Also offered as Sociology 48 335.)

## 49-336. Medical Anthropology/Sociology

A brief history of the development of the discipline. Problems and the nature of health and diseases in ancient and modern human populations; concepts of health and disease and indigenous medical systems. Aspects of social organization and the prevalence of diseases. Roles of curers, medical practitio-

### 3.20 Sociology and Anthropology

ners, support staff, patients, and their interrelations; technological innovations and the problems of health. (Also offered as Sociology 48-336.) (Prerequisites: 49-111 and 49112 , or $48-101$ and $48-102$.)
49-337. Demography and Epidemiology An introduction to the basic concepts and techniques of demography and epidemiology. Through a survey of methods, students assemble and critically examine population data. Topical areas include development and health status, health of aboriginal peoples, crime statistics, and demographic profiling of special populations, i.e., the aged, women, ethnic groups, young offenders, etc. (Also offered as Sociology 48-337.) (Prerequisites: 49-111 and 49-112, or 48-101 and 48-102.)

## 49-338. Selected Topics in Material Culture

The presentation and interpretation of material artifacts of culture. Topics may include museology, visual displays, the social construction of the past, and may vary from year to year.

## 49-340. Food and Global Sustainability

A comparative examination of the emergence of a global food system and its implications for culture and the environment. (Also offered as Sociology 48-340.)

## 49-352. Women and International Development

An examination of the impact of global processes on gender relations, including a consideration of the importance of cross-cultural variations in the family, politica/economic systems, and gender ideologies. (Also offered as Sociology 48-352.) (Prerequisite: 49-226, or 48-226, or consent of instructor.)

## 49-354. Gender, Space, and Time

An examination of sociological and anthropological approaches to the study of spacetime relations within the field of gender studies, including a focus on the development of gendered environments and cultural practices. (Also offered as Sociology 48 354.) (Prerequisites: 49-111 and 49-112, or 48-101 and 48-102.)

49-355. Fleld Methods in Anthropology Examination of questions of ethics, respon sibility, and objectivity in problem formule. tion, research design, and data collection Historical and contemporary significanced fieldwork to anthropology and social sciences generally. Techniques of fieldwork and dab collection methods. The development ota limited research project will be encouraged (Also offered as Sociology 48-355.) (Prerepuisite: 49-112 or consent of instructor.)

## 49-356. Cultural Theory

Through a selective examination of classical theories, this seminar offers a discussionol the value and limitations of interpretive ans thropology. (Prerequisite: 49-112 or consent of instructor.)
49-375. Social Justice in the Global Context
An examination of social justice from an anthropological perspective including, but mot limited to, minority rights and world development problems. (Also offered as Sociology 48-375.) (Prerequisite: 49-213.)

## 49-380. Selected Topics in Early Complex Societies

Several Old and New World cases of the ise of complex society or civilization are consid. ered, focussing on such topics as ecological requirements, specialization and stratific:tion, techniques of rule, and the collapsed complexity. (Prerequisites: 49-111 and 49 112.)

## 49-406. Aboriginal Peoples

Advanced seminar on issues relating to aboriginal peoples in Canada and elsewhere.
49-407. Alcohol, Drugs, and Society
A primarily social science orientation to allophol and drugs with a focus on social stroe ture, social learning, and public policy. Advanced concepts and issues surrounding substance use and abuse are introducedh a critical examination of current theoretical and research paradigms. Legislative, law enforcement, treatment, and prevention strategies are described and evaluated Special topics include problems of alcohol and drugs as related to sports, work, cime. and the current "war on drugs". (Also offered as Sociology 48-407.) (Prerequisites: 48

260,48-302, and 48-310 (or 49-355), or consent of instructor.)
49-410. Crime and Culture in a Global Context
This seminar course examines the cultural construction of crime. The course will focus on the effects of imposing laws, methods of judging, and definitions of criminality in various social cultural contexts, including those that are indigenous and colonized. (Also oftered as Sociology 48-410.) (Prerequisites: 49-213 or 48-260, and one of 48-310, 49330, 49-352, 49-355, or 49-375.)
49-411. Challenging Global Development A critical examination of theories and policies of global development and underdevelopment, including explorations of atematives to modemization. (Also offered as Sociology 49-411.) (Prerequisites: 48226 or 49-226, or consent of instructor.)

## 49-415. Culture, Class, and Power

Discussion of the theoretical issues raised by application of cultural theory in a global conlext, including a discussion of contemporary theoretical approaches to understanding the way local cultural practice is influenced by macrosocial processes, and including an assessment of the post-modemist critique of anthropology. (Also offered as Sociology 48-415.) (Prerequisites: 48202 and 48-302, or any two 200-level or higher Anthropology courses, or consent of instructor.)

## 49-418. The Ethnography

An exploration of the methodological and theoretical implications of the ethnography in the social sciences, including historical and contemporary approaches to ethnographic writing. (Also offered as Sociology 48-418.) (Prerequisite: 49-213 or consent of instructor.)

## 49-425. Field Studies

A field course designed to give advanced students the opportunity to study cultures and environments in Canada and elsewhere. The focus and selected topics will vary with the geographic location. (An addifionalfee may be charged to cover travel and accommodation costs.) (Also offered as So-
ciology 48-425.) (Prerequisites: 49-111, 49112 , and three 200-or 300 -level courses.)

## 49-430. Research Methods in Physical Anthropology

An examination of current the oretical and research trends in physical anthropology. Discussions of research design, data collection, analysis and report writing will be applied to individual student projects. (Prerequisite: 49-215 or consent of instructor.) (I lecture, 2 laboratory hours a week.)

## 49-441. Topics in Anthropology

(May be offered as a seminar course if enrolment warrants, or as an independent study course.)

## 49-445. Directed Studies in Anthropological Research I

The student will carry through a limited research project under the direct supervision of a faculty member. (Prerequisite or corequisite: 49-441.)

## 49-446. Directed Studies in Anthropological Research II

The student will carry through a limited research project under the direct supervision of a faculty member. (Prerequisite or corequisite: 49-441.)

### 3.20.4 PROGRAMS OF STUDYPLANNING

The planning program provides students with knowledge about the theories, ethics, and practices of community urban planning, primarily in western, developed countries, and secondarily in developing countries, within the contexts of the social, economic, political, and environmental processes creating the societies. In addition to the core and the urban planning foundations, seven areas of concentration are offered: business, computer design, environment, gerontology, international, public administration, and social planning. Students complete prescribed senior courses within each of the concentration areas, especially outside of the disciplines of planning and geography; the exception is in business, where first-year courses are prerequisite.

A four-year Honours degree program is available in Planning.

## Honours Planning

Total courses: forty.
Major requirements-Planning: 50-150 (or 48-180), 50-192, 50-231 (or 48-308), 50251 (or 48-280), 50-291 (or 48-281), 50-337 (or 48-380), 50-341, 50-342 (or 48-381), 50391, 50-397, 50-401, 50-403 (or 48-480), 50-452, 50-490, and 50-491;
Other requirements:
(a) $02-250,26-100,42-130,42-250$, 42-392, 43-347, 45-215, 48-101, 48-102 (or 49-112), and 99-213;
(b) one of the following, four-course concentrations: 70-151, 71-140, 72-171, and 72-271; or 50-298, 50-343, 50-499, and 67-405; or 42-200 (or 67-200), 42-249, 45212, and either 50-320 or 50-393; or 42-361 (or 45-241), 48-226, 48352 (or 49-352), and 50-415 (or 48-411, or 49-411); or 45-220, 45221, 45-326, and 45-328; or 48207, 48-227, 48-228, and 48-320.
(c) two courses from Arts or Languages;
(d) two courses from Science;
(e) seven additional courses from any area of study.

## COURSE DESCRIPTIONSPLANNING

## 50-150. Introduction to Social Planning and Geography

A survey of the development of spatial aspects of urban life, principles of urban land use, and interaction patterns of urban activities. (Also offered as Geography 42-150 and Sociology 48-180.) (3 lecture hours a week.)

## 50-192. Urban Planning Research Techniques

An introduction to planning and its techniques, such as mapping, remote sensing, surveys, and spatial statistics. Course objectives are to improve basic mathematical and scientific knowledge, essay writing, and computer skills. (Prerequisite: 50-150 or 42-

150 or 48-180 or consent of instructor.) (1.5 lecture, 1.5 laboratory hours a week.)

## 50-231. Intermediate Statistics

After a review of univariate and bivariate ste. tistical methods, an introduction to multivar ate statistics for geographers and planners. Computer analyses of selected geographcal data sets. (Also offered as Geography 42-231 and Sociology 48-308.) (Preereq uisite; 02-250 or equivalent.) (2 lecture, 2 laboratory hours a week.)

## 50-251. Urban Design

An introduction to the visual and spatialele. ments which affect urban form. The course includes a survey of analytical methods em: ployed in the design process, such as: as sessment and monitoring of user needs analysis of environmental contexts, and the incorporation of new technologies. (Also of fered as Sociology 48-280.) (3 le cture hours a week.)

## 50-291. Contemporary Architecture

A survey of the roots of contemporary archtectural theory through an examination ol representative structures since the Indus. trial Revolution. Students will be introduced to those individuals who have played acent tral role in the development of architectural thought in North America. (Also offered as Sociology 48-281 and Art History 28-391.)/ lecture hours a week.)
50-298. Technology and Social Values
An exploration of the mutual influence be tween technological development and social values. The course entails a study of the history of scientific thought and examines such issues as receptivity to technologiad change in different societies and different historical eras. Emphasis will be on late modern and contemporary developments such as the effect of computer technology on work, human relations, and the evolution of cities.
50-320. Women, Power, and the Environment
This course focuses on environmental is: sues as they affect women across cultures It provides a feminist critical analysis of fthe power relations in modern societies that cause environmental degradation and 0 x.
amines the theories, policies, and institubions that contribute to unsustainable practices. Emphasis is placed on the women-nature debate within various enviconmental social movements and the historical role women have played as activists. (Also offered as Women's Studies 53-320.) (Prerequisite: completion of at least ten courses in any program.)
50-337. Social Planning and Geography An introduction to the history of social geographical ideas, and the modern and postmodern concepts in social geography, with special application to western cities. (Also offered as Geography 42-337 and Sociology 48-380.) (Prerequisite: one of 42-130, 42131, 42-150, or 48-180, or 50-150.) (3 lecture hours a week.)

## 50-341. Planning Theory and Methods

Asurvey of approaches to planning, including strategic and communicative planning; principles of urban design and planning with the natural environment; and an overview of planning tools such as population projection and cost-benefit analysis. (Prerequisite: 50150.) (3 lecture hours a week.)

## 50-342 Neighbourhood Planning

The theory and methods of urban planning in Canadian communities, with emphasis on: social issues in inner city neighbourhoods, planning for the inner cily, and the roles of planners in residential communities. (Also offered as Sociology 48-381.) (3 lecture hours a week.)

## 50-343. Planning Studio

Students carry out exercises in small scale land use surveying; the preparation of applications for minor variances, zoning bylaw amendments, and official plan amendments; and the subdivision of vacant land. (Prerequisites: 50-150 and 50-192.) (3 laboratory hours a week.)

## 50-391. Design Studio

An introduction to the basic principles and graphic communication skills used in the design of the built environment. The course is project-oriented and introduces the student to spatial organization, site analysis, and presentation techniques employed in plan-
ning, architecture, and landscape architecture. (Prerequisite: 50-251.) (1 lecture hour, 2 studio hours a week.)

## 50-393. Environmental Planning

An introduction to the principles of sustainable development as applied to urban planning. This course will focus on the policies, standards, and practices used in creating and maintaining environmentally responsible communities. Topics will include growth management, mixed land use, adaptive infrastructures, altemative transportation, energy conservation, and waste management.

## 50-397. Computer-Aided Design/Drafting

Hands-on instruction introducing students to hardware and software involved in com-puter-aided design/drafting. The course requires students to do a series of projects illustrating the capabilities and applications of the CADD system. (Prerequisite: 50-391 or consent of instructor.) (1 lecture hour, 2 laboratory hours a week.)

## 50-401. Urban Planning in Ontario

Analysis of the present practice and strategy of urban planning, with particular emphasis on Ontario. Case studies are used to illustrate planning legislation, legal tools (official plans, zoning, sub-division control), establishment of community standards for land use, analysis of traffic and its impact, recurrent land use problem areas (downtown, heritage districts, waterfronts), and site planning. (Prerequisite: 50-341.) (3 lecture hours a week.)

## 50-403. Housing Policy

A study of social issues related to housing. Emphasis is on the supply, demand, and legal aspects of housing policy, as well as current, pressing issues such as affordability and sustainability. (Also offered as Sociology 48-480.) (3 lecture hours a week.)

## 50-415. Analysis of Western European Planning Practices

A seminar course focusing on current planning issues: environmental, urban, regional, housing, tourism, transportation, etc. (Also offered as Geography 42-415.) (Prerequisite: third year standing or consent of instructor.) (3 lecture hours a week.)

50-450. Advanced Topics in Planning
Directed readings and research on a topic selected in consultation with instructor. (Credit may be obtained for only one of 42 450 or 50-450.) (2 seminar hours a week.)

## 50-452. Recreation Planning

The process of planning for leisure needs is discussed and carried out through a consultant report. Recreational behaviour, theories, and distributive mechanisms are analyzed. Planning for the recreational needs of specific groups such as children, tourists, and the elderly are examined. (3 lecture hours a week.)
50-490. Research Strategies in Planning A seminar course on concepts and methodologies in research leading to formulation of a research project. (Also offered as Geography 42-490.) (Prerequisite: four-year Honours, make-up, or special student status with at least twelve courses in Geography, or consent of instructor.)

## 50-491. Planning Research Projects

Guided research based on primary and secondary sources on a research project. (Also offered as Geography 42-491.) (Prerequisite: 42-490.) (Compulsory for four-year Honours, make-up, or special students.)
50-499. Advanced Computer Mapping
Advanced CADD projects in which the student is required to develop an integrated design. (Prerequisite: 50-397.) (1 lecture hour, 3 laboratory hours a week.)

### 3.21 Visual Arts

(Ext. 2828)
OFFICERS OF INSTRUCTION

## University Professor

Baxter, lain; B.Sc. M.Ed. (Idaho), M.F.A (Washington State), R.C.A.-1988.

## Professors

Gold/Smith, Susan B.; B.A., M.A. (Wayna State)-1970.
DeAngelis, Joseph R.; B.F.A. (Rhode Istand School of Design), M.F.A. (Syracuse)1969.

Bélanger, Sylvie; Bacc. Spec. (Montreal), Ed. Cert. (Quebec), B.F.A. (Concordia), M.F.A. (York)-1989.

Dingler, Daniel W.; B.F.A. (Layton Schoold Art), M.F.A. (Cranbrook Academy of Art)1971.

## Associate Professors

Farrell, Michael J.; B.A., M.A. (Florids State)-1968.
Law, William C.; B.F.A. (Atlanta Schoold Art), M.F.A. (Tulane)-1970. (Director of the School)

## Sessional Lecturers

Duck, Adèle; B.F.A. (Windsor), M.F.A. (Forida State)-1976.
Brown, Brian E.; B.F.A. (Windsor), M.FA. (Southem Illinois)-1977.
Strickland, Rod; B.F.A. (Windsor), M.FA. (Tennessee)-1984.

### 3.21.1 GENERAL INFORMATION

Transfer Students: Students who have had art courses at other post-secondary insitithtions and desire credit for basic courses in Visual Arts must submit a portfolio of theif own work for evaluation by Visual Arts and an official transcript of their record, togethet with catalogues describing the courses taken, all of which must be submitted no later than two weeks before the first day of classes. Transfer students who wish to teceive art history credit for courses taken at other institutions may be required to take a
qualifying examination during the first week of fegularly scheduled classes. The examination will cover those Art History courses from which the student wishes to be exempted. For admission from Sheridan or Fanshawe Colleges of Applied Arts and Technology, see 2.3.6.

## Program Requirements

1) $28-114$ and 28-115 must be taken in the first year.
2) Visual Arts students must take 27-105 and 27-106 concurrently in the first term, and 27107 must be taken in the first year.
3) Registration in any studio courses numbered in the 27-400s requires a successful B.F.A. portfolio evaluation, completion of eighteen studio courses as well as any spedific prerequisite course(s). Prior to registering in 400-level courses students must receive advising in Visual Arts.
4) Each fourth-year B.F.A. student who has completed the portfolio evaluation will be required to participate in the B.F.A. Candidates' Exhibit. The selection of work to be exhibited is to be made with the approval of the student's major instructor.

### 3.21.2 PROGRAMS OF STUDY

Aminor is available in Visual Arts. General B.A. degree programs are offered in Visual Ats and Art History. Four-year Honours B.A. degree programs are offered in Visual Arts and Communication Studies, and Visual Arts and Art History. Combined, four-year B.A. Honours programs are available in Visual Arts. An Honours B.F.A. program is offered in Visual Arts.
Requirements for degree programs in Visual Ats make reference to the following groups of courses:
Basic Courses: 27-105, 27-106, 27-107, and Art History 28-114 and 28-115.
Drawing: 27-203, 27-303, 27-365, 27-400, 27-401, and 27-470.
Painting: 27-213, 27-313, 27-365, 27-410, 27-411, 27-470.

Printmaking: 27-223, 27-224, 27-225, $27-$ 323, 27-324, 27-325, 27-365, 27-420, $27-$ 421, 27-470.
Sculpture: 27-233, 27-333, 27-365, 27-430, 27-431, 27-470.
Photography: 27-253, 27-353, 27-365, 27440, 27-441, 27-470.
Multi-Media: 27-243, 27-343, 27-345, 27-
365, 27-440, 27-441, 27-470.
Intemship: 27-480.
Seminar: 27-490.
Art History: see 3.21.5.

## Minor in Visual Arts

Requirements: six Visual Arts courses, consisting of 28-114 and 28-115; plus one of 27 105, 27-106, or 27-107; and three courses at the 200 level or above.

## General B.A. Degree in Visual Arts

Total courses: thirty.
Major requirements: sixteen courses, including 27-105, 27-106, 27-107, and 27203; and eight other studio courses numbered 27-213 through 27-365; plus 28114, 28-115, and two other Art History courses.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements:
(a) two other courses from Arts, Languages, Social Sciences, or Science, excluding Visual Arts;
(b) two of 07-201, 07-202, or 07-203;
(c) four more courses from any area of study, excluding Visual Arts.

## General B.A. Degree in Art History

Total courses: thirty.
Major requirements: sixteen courses, including 28-114 and 28-115; plus ten other Art

History courses chosen in consultation with a program advisor in Visual Arts; plus 27 105, 27-106, and 27-107; and one 200-level studio course.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.
Other requirements:
(a) two other courses from Arts, Languages, Social Sciences, or Science, excluding Visual Arts;
(b) two of 07-201, 07-202, or 07-203;
(c) four more courses from any area of study, excluding Visual Arts.

## B.A. Degree in Honours Visual Arts and Communication Studies

Total courses: forty.
Major requirements-Visual Arts: seventeen courses, consisting of 27-105, 27-106, and 27-107; plus eleven other studio courses numbered 27-203 through 27-380 (at least four courses must be at the 300 level); plus 28-114, 28-115, and one other Art History course.
Major requirements-Communication Studies: sixteen courses, including 40-100, 40101, and any four courses from Groups I, II, and III; plus at least two (and up to six) in each of the Design and Applications, Policy and Systems, and Culture and Theory streams. At least three Communication Studies courses must be at the 400 level. Students must also include at least one Research Methods course.
Other requirements: at least two Language or Science courses; plus five additional options.

## B.A. Degree in Honours Visual Arts and Art History

## Total courses: forty.

Major requirements-Visual Arts: fourteen courses, consisting of 27-105, 27-106, and

27-107; plus eleven other studio courses numbered 27-203 through 27-380 (at leas four courses must be at the 300 level).
Major requirements-Art History: fourteen courses, including 28-114 and 28-115; plys twelve other Art History courses numbered 28-300 through 28-456.
Other requirements:
(a) four courses in the same foreign language;
(b) four History courses chosen in consultation with a History adve sor;
(c) four options from any area of study, excluding Visual Arts (27.) and Art History (28-).

## Combined B.A. Four-Year Honours Degree Programs

Total courses: forty.
Major requirements-Visual Arts: seventeen courses, consisting of 27-105, 27-106, and 27-107; plus eleven other studio courses numbered 27-203 through 27-380, with at least four courses at the 300 leved plus 28-114, 28-115, and one other Art History course.
Major requirements-Other Subject: as prescribed by that area of study.
Option requirements (see 2.4.14 for subjed areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Ats, Languages, Social Sciences, or Science.

Other requirements: additional options (iffequired) to a total of forty courses.

## Bachelor of Fine Arts Degree in Visual Arts

Total courses: forty-two.*
Major requirements: 27-105, 27-106, 27. 107, 27-203, 27-303, 27-370, and 27-490, plus four other 200 -level courses from four of the following five areas: painting, pint making, sculpture, multi-media, and phoiog-
raphy; and ten additional studio courses; and two workshop courses not necessarily in the same studio area; and two major studio courses from the same studio area; plus 28-114, 28-115, and four other Art History courses; plus one of 07-201, 07-202, 07203; and a positive B.F.A. portfolio evaluation.
Option requirements (see 2.4.14 for subject areas): six courses including
(a) two Social Science courses;
(b) two Language courses in the same language or two Science courses;
(c) two additional courses from Arts, Languages, Social Sciences, or Science.

Other requirements: four additional options.
'Within the program, students may take up to four additional Visual Arts or Art History courses.
Portfolio Evaluation: A successful portfolio evaluation is required. Additionally, studio courses numbered in the $27-400$ s, which are necessary for completion of the B.F.A. degree, are restrcied to students who have recelved a successful portfolio evaluation.
Before submitting a portfolio, the student must have eamed credit in at least: 27-105, 27-106, 27-107, 27-203, 28-114, and $28-$ 115; plus four additional 200 -level courses in four of the following five areas: sculpture, painting, printmaking, multi-media, and pholography; and at least two additional 300level studio courses. The student also must have a minimum average of 5.0 in Art History courses.
Students who are otherwise in good standing, but whose portfolio evaluation is not successful may:
(a) be allowed to continue in the B.F.A. program on a conditional basis, subject to re-evaluation;
(b) be allowed to transfer to the general Bachelor of Arts-Visual Arts program.

Consult a program advisor in Visual Arts for details regarding portfolio requirements and procedures.

### 3.21.3 MASTER OF FINE ARTS

Visual Arts offers a two-year graduate program leading to the Master of Fine Arts degree in Painting, Drawing, Printmaking, Sculpture, and Multi-Media. For complete information consult the Graduate Calendar.

### 3.21.4 COURSE DESCRIPTIONSVISUAL ARTS

Not all courses listed will necessarily be offered each year. Studio courses are six hours a week unless otherwise indicated. Art History courses are three hours a week unless otherwise indicated. Prerequisites for all Art History courses are waived for non-Visual Arts majors.

## 27-105. Studio Fundamentals

Introduction to the basic vocabulary, concepts, and processes of form in visual arts. Includes an exploration of media such as photography and video. (Must be taken concurrently with 27-106 by students in Visual Arts programs.)

## 27-106. Studio Fundamentals

Introduction to the basic vocabulary, concepts, and materials of form in visual arts. Includes an examination of issues in contemporary art and art criticism. (Must be taken concurrently with $27-105$ by students in Visual Arts programs.)

## 27-107. Studio Fundamentals

Introduction to the basic vocabulary, concepts, and materials of drawing.

The following courses are open to Visual Arts students only.

## 27-203. Introductory Drawing

Media, techniques, vocabulary, and concepts of drawing, including the human figure and other subject matter. Development of drawing skills with exposure to more complex drawing situations, approaches, and

### 3.21 Visual Arts

points of view. Emphasis on a variety of materials (traditional and non-traditional). (Prerequisites: 27-105, 27-106, and 27-107.)

## 27-213. Introductory Painting

Introduction to traditional and contemporary painting concerns, problems in rendering three-dimensional form in space and organization of the two-dimensional surface. (Prerequisites: $27-105$ and $27-106$.)

## 27-223. Introductory <br> Printmaking-Intaglio

Basic processes and techniques of intaglio printing utilizing etching processes and engraving. (Prerequisites: 27-105 and 27106.)

## 27-224. Introductory <br> Printmaking-Lithography

Basic processes and techniques of stone and plate lithographic printing, transfer methods and colour registration with introduction to papermaking. (Prerequisites: $27-$ 105 and 27-106.)
27-225. Introductory Printmaking-Relief Introduction to wood cut, wood engraving, lino cut, and letterpress. (Prerequisites: 27105 and 27-106.)

## 27-233. Introductory Sculpture

An introduction to the various concepts and processes of contemporary sculpture practice. Issues will be addressed through group discussion and practical application. (Prerequisites: 27-105 and 27-106.)

## 27-243. Introductory Multi-Media

An introduction to the uses of technique in production of video, sound, performance and processed images. An exploration of the media's language, discourse, and issues through creative expression. (Prerequisites: 27-105 and 27-106.)

## 27-253. Introductory Photography

An introduction to the study of the photographic process in the areas of camera use, black and white prints, and related darkroom techniques. Traditional and non-traditional approaches to technical skills, composition, ideas, and content are emphasized. (Prerequisites: $27-105$ and $27-106$.)

## 27-303. Drawing

Advanced problems in drawing, emphasie: ing individual directions, concepts, and valous media. (Prerequisite: 27-203.) (May be repeated for credit.)

## 27-313. Painting

Development of the concepts and painiting skills encountered in 27-213. Explorationd the creative potential, range, and flexibilityd non-traditional techniques, forms and me dia. (Prerequisites: 27-107 and 27-213.) (May be repeated for credit.)

## 27-323. Printmaking-Intaglio

Continued development of expressive and interpretive skills of intaglio printing. Addtional techniques available are multipple colour printing, colour viscosity, and photgravure. (Prerequisites: 27-107 and 27. 223.) (May be repeated for credit.)

## 27-324. Printmaking-Lithography

Continued development of expressive and interpretive skills of lithographic printing techniques through stone and plate colour printing, and photo-transfer processes. (Prerequisites: 27-107 and 27-224.) (Maybe repeated for credit.)

## 27-325. Printmaking-Relief

Continued development of expressive and interpretive skills of relief printing. Additiond printing techniques of multi-block and redue tion-block colour printing. (Prerequisites: 27. 107 and 27-225.) (May be repeated for credit.)

## 27-333. Sculpture

An in-depth study of concepts and proo esses as they pertain to contemporary sculpture practice. Issues will be addressed through group discussion and practical ${ }^{2} p$ plication. (Prerequisites: 27-107 and 27. 233.) (May be repeated for credit.)

## 27-343. Multi-Media

Continued development of creative fe search through the integration of different media according to various artistic forms and contexts. (Prerequisites: 27-107 and 27-243.) (May be repeated for credit)

## 27-345.net.art

Exploration and investigation of the intemel as an artistic medium. There will be ongoing

### 3.21 Visual Arts

research and discussion of various issues associated with electronic culture. The focus of the course will be on studio practice. (Prereqiste: consent of instructor.)

## 27-353. Photography

Continuation of the study of the photographic process in the areas of camera use, black and white, and related darkroom techniques. Students are encouraged to expand their analytical, experimental, and creative skills. Traditional and non-traditional approaches to the use of the photographic image, ideas, and content are emphasized. (Prerequisites: 27-107 and 27-253.) (May be repeated for credit.)

## 27-365. Independent Studio

Individual work on specific projects under the guidance of an instructor. Consult a program advisor in Visual Arts for areas of study offered. (Prerequisite: one 300-numbered studio course in the subject desired and consent of instructor.) (May be repeated for credit.)

### 27.370. Critical Issues

Development of an understanding of issues which have been addressed by contemporary artists and critics contextualized in history and artistic practices with an emphasis on individual student's concerns. (Prerequisites: 27-105 and 27-106.) (Restricted to B.F.A. Visual Arts students only after successful completion of portfolio review.)

## 27-380. Visual Arts Internship

Practical work experience in arts organizafions such as art centres, galleries, artists' studios, and visual arts related professional businesses. (Offered on a Pass/Non-Pass tasis.) (Restricted to B.F.A. Visual Arts Majors in good standing after successful completion of portfolio review, and to Visual Arts Combined Honours with an average of 9.0 or better and with permission of the Visual Arts Internship Coordinator.) (100 hours toal.)

## 27-390. Studies in the Visual Arts

Special projects, topics or cross-disciplinary undertakings in the Visual Arts, organized periodically. Specific information on course content will be available from Visual Arts
(Prerequiste: consent of instructor.) (May be repeated for credit.)

## 27-400. Studio Major-Drawing

The advanced student is given wide range to work in a chosen medium to synthesize accumulated knowledge and experience with individual criticism provided by the instructor. (Prerequisites: three 300 -level drawing courses.) (12 hours a week.) (May not be taken concurrently with more than one 300 level studio course.)

## 27-401. Studio Major-Drawing

The advanced student is given wide range to work in a chosen medium to synthesize accumulated knowledge and experience with individual criticism provided by the instructor. (Prerequisite: 27-400.) (12 hours a week.) (May not be taken concurrently with 300 -level studio courses.)

## 27-410. Studio Major-Painting

The advanced student is given wide range to work in a chosen medium and to synthesize accumulated knowledge and experience with individual criticism provided by the instructor. (Prerequisite: three 300 -level painting courses.) ( 12 hours a week.) (May not be taken concurrently with more than one 300level studio course.)

## 27-411. Studio Major-Painting

The advanced student is given wide range to work in a chosen medium and to synthesize accumulated knowledge and experience with individual criticism provided by the instructor. (Prerequisite: 27-410.) (12 hours a week.) (May not be taken concurrently with 300 -level studio courses.)

## 27-420. Studio Major-Printmaking

The student is given wide range to experiment in chosen print media and to synthesize accumulated knowledge and experience with the instructor acting in an advisory capacity. (Prerequisite: three 300level printmaking courses.) (12 hours a week.) (May not be taken concurrently with more than one 300 -level studio course.)

## 27-421. Studio Major-Printmaking

The student is given wide range to experiment in chosen print media and to synthesize accumulated knowledge and experience with the instructor acting in an
advisory capacity. (Prerequisite: 27-420.) ( 12 hours a week.) (May not be taken concurrently with 300 -level studio courses.)

## 27-430. Studio Major-Sculpture

The advanced student is given free range to work in a chosen medium and to synthesize previous knowledge and experience with the instructor providing advice and criticism. (Prerequisite: three 300-level sculpture courses.) ( 12 hours a week.) (May not be taken concurrently with more than one 300level studio course.)

## 27-431. Studio Major-Sculpture

The advanced student is given free range to work in a chosen medium and to synthesize previous knowledge and experience with the instructor providing advice and criticism. (Prerequisite: 27-430.) (12 hours a week.) (May not be taken concurrently with 300level studio courses.)

## 27-440. Studio Major-Multi-Media

The advanced student is given free range to work in chosen media and to synthesize previous knowledge and experience with the instructor providing advice and criticism. (Prerequisite: three 300 -level multi-media courses.) (12 hours a week.) (May not be taken concurrently with more than one 300level studio course.)

## 27-441. Studio Major-Multi-Media

The advanced student is given free range to work in chosen media and to synthesize previous knowledge and experience with the instructor providing advice and criticism. (Prerequisite: 27-440.) (12 hours a week.) (May not be taken concurrently with 300level studio courses.)

## 27-470. Workshop

Individual work on specific projects under the guidance of an instructor. Consult Visual Arts for specific areas of study offered. (Prerequisite: one 300 -level studio course in the subject area desired and the consent of the instructor and a program advisor in Visual Arts.) (May be repeated once for credit.)

## 27-490. Seminar

Investigation of professional practice and contemporary developments in the arts may include group discussion, visits to galleries, projects, lectures, written assignments. (Re-
stricted to students registered in $400-$-level Honours Thesis Studio Courses in the B.FA program only.)

### 3.21.5 COURSE DESCRIPTIONSART HISTORY

Not all courses listed will necessarily be offered each year. Prerequisites for all Arthis? tory courses are waived for non-Visual Ats majors. Art History courses are three hours a week unless otherwise indicated.

## 28-114. Survey of Art History

History of art from prehistoric through medieval, with an introduction to composition, the language of the plastic arts and its reletionship to culture.

## 28-115. Survey of Art History

History of art from Italian Renaissance to the twentieth century, with emphasis on the influence of social and philosophical ideas. (Prerequisite: 28-114.)

## 28-300. Ancient Near Eastern Art

A comprehensive study of the art of Egyplian and Mesopotamian civilizations with emr phasis upon those periods which had dis: tinct cultural influence upon the peripheral areas of the Eastern Mediterranean. (Pterequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-301. Northern Renaissance Art

The art of Northern Europe during the ifi teenth and sixteenth centuries with partior lar emphasis upon the Franco-Fleinish and German painting traditions and the beginnings of Graphic Art. (Prerequisites for Vis ual Arts majors: 28-114 and 28-115.)

## 28-307. Renaissance Art I

The Renaissance in Italy during the fifteenth century with special attention given to thear. chitecture, sculpture, and painting of Florence. (Prerequisites for Visual Arts maz jors: 28-114 and 28-115.)

## 28-308. Renaissance Art II

The art of the Renaissance in Italy with amm jor consideration of the architecture, sculpture, and painting produced in Rome and Venice during the sixteenth century. (Prow requisites for Visual Arts majors: 28-114 and 28-115.)

28-312. Baroque Art
An analysis of the architecture, painting, and sculpture of the seventeenth century in Europe. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-314. European Art During the Eighteenth Century

The study of the art of the Rococo in Europe and the evolution of the Neo-Classic movement. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-331. Nineteenth-Century European Art

An analysis of the major movements in European painting during the nineteenth century including Neo-Classicism, Romanticism, Realism, Impressionism, and Post-Impressionism. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-336. Early Medieval Art

An examination of the painting, sculpture, and architecture of Europe including the Early Christian, Byzantine, Hiberno-Saxon, Carolingian, and Ottonian periods. (Prerequisite for Visual Arts majors: 28-114.)

## 28-337. Later Medieval Art

An examination of the evolution of architecture and sculpture in Europe during the Romanesque and Gothic periods. (Prerequisite for Visual Arts majors: 28-114.)

## 28-338. Islamic Art

Anexamination of important trends in the artistic development of the Muslim era, including the Umayyad, Tulunid, Fatamid, Seljuk, Mongol, Nasrid, Mamluk, Ottoman, Timurid, Satvid, and Mughal dynasties. (Prerequisites for Visual Arts majors: 28-114 and 28115.)

## 28-339. Japanese Art

The architecture, sculpture, and painting of Japan and the relationship of Japanese culture to continental artistic developments. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-340. Art of India

A general survey of Indian architecture, sculpture, and painting with particular emphasis on the development of the Buddha Image. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-341. Art of China

An examination on the architecture, sculpture, and painting of China from the Shang through the Ching dynasties. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-342. The Development of American Art

A study of the art and architecture created in the United States from Colonial times to the twentieth century. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-343. Canadian Art

A study of the development of visual art in Canada from its early beginnings to the present. Gallery visits and primary sources in Ontario will supplement class lectures and readings. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-344. Art of the Twentieth Century-Pre-1940

An examination of the sources, movements, and major figures contributing to twentieth century architecture, sculpture, and painting in Europe and North America before 1940. (Prerequisites for Visual Arts majors: 28-114 and 28-115.)

## 28-345. Art of the Twentieth Century-Post-1940

An examination of the sources, movements, and major figures contributing to twentieth century art in Europe and North America from 1940 on. (Prerequisite: 28-344.)

## 28-391. Contemporary Architecture

A survey of the roots of contemporary architectural theory through an examination of representative structures since the Industrial Revolution. Students will be introduced to those individuals who have played a central role in the development of architectural thought in North America. (Also offered as Sociology 48-281 and Planning 50-291.) (3 lecture hours a week.)

## 28-400. Directed Individual Studies

This course involves examination of a particular problem in a specific area of interest in which a paper will be required. May be repeated for credit with permission of Visual Arts. For specific topics consult a program advisor in Visual Arts. (Prerequisites: 28114, 28-115, a 300 -numbered course in the
subject desired and consent of the instructor.)

## 28-456. Proseminar

A Proseminar course based on group encounters with particular studies in the History of Art, which will be considered by means of readings, discussions, papers, and museum trips. May be repeated for credit with permission. For specific topics consult a program advisor in Visual Arts. (Prerequisites: 28114, 28-115, and consent of the instructor.)

### 3.22 Women's Studies

(Ext. 2315)

## Program Chair: Dr. Anne Forrest

Other faculty teaching courses that fulfil the requirements for degree programs in Women's Studies are listed in the "Officers of Instruction" for many different areas of study in Arts, Languages, Social Sciences, Science, and Business.

Program requirements in Women's Studies make reference to Women-Emphasis courses. These currently include: English 26-128, 26-301; Philosophy 34-236; Communication Studies 40-486; History 43-216, $43-249,43-250,43-312,43-335,43-336$, 43-412, 43-463; Political Science 45-211; Psychology 46-240, 46-440, 46-445, 46463; Social Work 47-347, 47-458; Sociology 48-204, 48-205, 48-206, 48-306, 48-329, 48-350, 48-351, 48-352, 48-354, 48-408, 48-409, 48-461, 48-465; Anthropology 49 . 214, 49-306, 49-350, 49-352; Nursing 63 241, 63-243; Business Administration 71-347; and Kinesiology 95-405.
Various areas of study from time to time offer courses dealing specifically with women under specific course titles or general titles such as, "Special Topics", "Directed Readings", or "Seminars". Information regarding such courses will be available from a program advisor in Women's Studies and they may be taken with permission of the program.

### 3.22.1 PROGRAMS OF STUDY

Minor, certificate, general degree, four-year Honours degree, and combined four-year Honours degree programs are available in Women's Studies.

## Minor in Women's Studies

Requirements: six Women's Studies (53-) courses, including 53-100.
Certificate in Women's Studies
See "Certificate Programs", 3.23.6.

General B.A. in Women's Studies
Total courses: thirty.
Major requirements:
(a) Women's Studies 53-100 and at least two of 53-200, 53-201 or 53210 ; plus one of 53-300 or 53-301;
(b) six Women's Studies or WomenEmphasis courses, with at least one at the 100 -level;

Other requirements (see 2.4.14 for subject areas):
(a) two courses from Arts or Languages;
(b) two courses from Science ${ }^{*}$
(c) two courses from Social Sciences, excluding Women's Studies (53-);
(d) fourteen additional courses from any area of study, no more than six of which may be Women's Studies (53-).

- $53-220,63-241$, and $63-243$ will satisfy a Science requirement for non-Science maprs.
B.A. in Honours Women's Studies Total courses: forty.
Major requirements:
(a) Women's Studies 53-100, at least two of 53-200, 53-201, or 53-210, plus 53-300, 53-301, and 53-400;
(b) fourteen Women's Studies or Women-Emphasis courses with at least one at the 100 -level and one at the 400 -level;

Other requirements (see 2.4.14 for subject areas):
(a) two courses from Arts or Languages;
(b) two courses from Science*
(c) two courses from Social Sciences, excluding Women's Studies (53-);
(d) fourteen additional courses, no more than four of which may be Women's Studies (53-).

* $53-220,63-241$, and 63-243 will satisfy a Science requirement for non-Science majors.


## Combined Honours Women's Studies

Total courses : forty.
Required-Women's Studies: 53-100; at least two of 53-200, 53-201, 53-210; plus 53300, 53-301, and 53-400; plus ten Women's Studies or Women-Emphasis courses with at least one at the 100 level and at least one at the 400 level.
Major requirements-Other Subject: as prescribed by that area of study.
Other requirements: as prescribed by the other area of study; plus additional courses to a total of forty.

### 3.22.2 COURSE DESCRIPTIONS

## 53-100. Women in Canadian Society

An introduction to Women's Studies of an interdisciplinary nature, designed to illustrate and account for the position of women in Canadian society. Possible areas of enquiry include health, law, politics, history, women and work, representation of women in literature, Canadian women artists and musicians.

## 53-106. Women and Religion

A comparative, feminist-critical exploration of the status of women and women's religious experience in selected examples of traditional (e.g., Judaism, Christianity, Islam, Hinduism, Buddhism) and non-traditional (e.g., Goddess religions, Wicca, Feminism) religions, ancient and modern.

## 53-200. History of Women's Movements in North America

An exploration of the collective action of women in the past and present in North America. Areas of study may include women's involvement with the temperance, civil rights, suffrage, trade union, environmental, reproductive rights, and women's liberation movements. (Also offered as History 43-251.)

## 53-201. Women and Diversity

Examines the intersection of gender with other oppressions experienced by groups
such as women of colour, older women, disabled women, working-class women, and lesbians. The perspective taken is the critical analysis of gender offered by feminism(s). (Also offered as Sociology 48-251.)

## 53-210. Women and the Law

This course examines the relationship between gender inequality and the legal system. Topics include abortion, marriage, divorce, custody, equal pay, sexual harassment, rape, pornography, and prostitution. Students are introduced to basic legal research tools, such as statutes, regulations, cases, and legal literature.

## 53-215. Religion and Sexuality

The role of religion in shaping, positively and negatively, the understanding of sexuality and sexual roles. The impact of current reevaluations of bodiliness and feminine-masculine stereotyping on societal views of marriage, premarital sex, homosexuality, etc.

## 53-220. Biology of Sex and Gender

Human reproductive "strategies" are investigated within a framework of evolutionary biology. Attributes of sex and gender are explored as continuous variables resulting from physiological, endochrinological, and phylogenetic factors, along with environmental and cultural influences on sex and gender. Problems of gender chauvinism and biological determinism are discussed. (Prerequisite: OAC Biology, or any universitylevel Biology course, or consent of the instructor.)

## 53-225. Feminist Theology

An introduction to the various dimensions of feminist theology. These include: postChristian feminism; feminist hermeneutics; liberation theology; and the stories, both fiction and non-fiction, of women's lives. Students are encouraged to study the material in relation to their own lives and values.

## 53-230. Gender and Moral Choice

This course examines how gender affects personal and public definitions of moral problems and their resolution. Issues such as reproductive choices, childrearing, poverty, and war will be used to explore these ideas.

53-240. Helpmates, Harlots, Deliverers, and Disciples: Women in the Bible
A feminist-critical examination of selected passages from the Hebrew bible (Tanakilid Testament), the Apocrypha, and/or the New Testament, focusing on gender ideologyand the depiction of the legal, social, and religious status of women in ancient Israel, eaty Judaism, and/or early Christianity. The course will also explore the ways in which biblical gender ideology continues to shape attitudes toward women in contemporary societies.
53-300. The Meaning of Feminist Inquiny An exploration of diverse feminist theories supporting women's studies scholarship within the humanities, social sciences, and natural sciences, and the relationship between feminist theories and practices. By deconstructing traditional narratives, stodents examine questions of identity, objec tivity, and evidence. (Prerequisites: two of 53-200, 53-201, or 53-210, or consent of the instructor.)

## 53-301. Frameworks for Feminist Research

An exploration of the diverse approachesto feminist research in a variety of fields. Students will examine the core questions and approaches that various disciplines bring to the study of women. (Prerequisites: two of $53-200,53-201$, or 53-210, or consent of the instructor.)

## 53-320. Women, Power, and

 EnvironmentsThis course focuses on environmental is: sues as they affect women across cultures. It provides a feminist critical analysis of the power relations in modern societies that cause environmental degradation and examines the theories, policies, and institutions that contribute to unsustainable practices. Emphasis is placed on the women-nature debate within various environmental social movements and the historical role women have played as activists. (Also offered as Planning 50-320.) (Prerequisite: completion of at least ten courses in any program.)

### 53.330. Women, Movement, and Performance

This course explores how women come to know themselves and others through their bodies, gender and racial stereotypes, body image and body language, women's use of space, the gendered construction of sport, and movement as a cultural message. (Prerequisite: completion of at least ten courses in any program and consent of instructor.)

## 53-350. Special Topics

The content will vary to reflect student need and faculty expertise and may be offered as a cross-listed course with other programs. (Prerequisite: consent of the instructor.)

## 53-400. Seminar/Practicum

The course involves the study of a problem or theory related to women or gender which will result in a practicum report or thesis. Students will select individual topics of interest and will be supervised and assisted by a facully member. (Open only to Semester 7 and Semester 8 students.) (Prerequisites: 53 300 and 53-301.)

### 3.23 Certificate <br> Programs

This section describes several Certificate programs administered by the Faculty of Arts and Social Sciences. These programs are intended primarily for students who wish to receive recognition for studies in an area, but who do not necessarily intend to complete a degree program. These programs do not have any completion time expectations. The courses which comprise Certificate programs may not necessarily be available on an annual basis.
Certificate programs require the completion of the prescribed courses with a minimum G.P.A. of 5.0.

### 3.23.1 CERTIFICATE IN ARTS MANAGEMENT

Total courses: ten.
Requirements:
(a) 70-151, 71-140, 74-231;
(b) 01-360, 40-398, 40-399;
(c) one of $24-210,26-100,26-302$, 40-225, 40-252, 40-272, 40-380, 40-381;
(d) three of 24-100, 24-111, 24-200, 24-225, 24-235, 24-325, 24-330, 24-333, 24-335, 24-351, 24-352, 24-439, 32-106, 32-107, 32-126, 32-127, 32-346, 32-420, 27-370, $28-345,28-400$, including two or four of the 1.50 credit hour courses 33-210, 33-220, 33-260, 33-310.
3.23.2 CERTIFICATE IN CRIMINOLOGY AND CRIMINAL JUSTICE

Total courses: ten.
Requirements:
(a) 34-226;
(b) 48-101, 48-102, 48-260, 48-261, 48-262, and 48-363;
(c) three of 43-287, 46-220, 47-347, 47-410, 48-207, 48-361, 48-362, 48-366, 49-323.

The Certificate in Criminology and Criminal Justice is intended as a program of part-time study only. Entrance is restricted to those engaged in careers related to the discipline of criminology. Students must apply and be accepted into the program prior to beginning course work. A limited number of students will be admitted each year. Applications may be obtained from the Office of the Registrar and must be returned to that office by the deadline dates of May 1st for admission to the Fall term and November 1st for admission to the Winter term. A letter from the applicant's employer, confirming the applicant's full-time employment status and describing the nature of the position, must be attached. Under special circumstances, persons on study leave may be permitted to enrol full-time for one term. Such applications must be made in writing directly conforming to the deadlines indicated above.
Courses are included as part of the regular Sociology program and are acceptable for credit towards a degree.

### 3.23.3 CERTIFICATE IN LABOUR STUDIES

Total courses: ten.
Requirements:
(a) 54-100 or 54-105; 54-200 or 54204; 54-327.
(b) seven of 43-349, 46-370, 48-225, 48-228, 48-326, 48-332, 71-344, and 71-449.

### 3.23.4 CERTIFICATE IN LATIN AMERICAN AND CARIBBEAN STUDIES

Total courses: ten.

## Requirements:

(a) three of 45-239, 45-369, 48-226 (or 49-226), 48-330 (or 49-330), 48-411 (or 49-411);
(b) two courses in Spanish language or two courses in French language at the university level;
(c) five of 23-235, 23-261, 23-331,28 353, 26-354, 40-461, 40-486, 48 227, 48-232 (or 49-232), 48-340 (or 49-340), 48-352 (or 49-352).

## FIELD EXPERIENCE

Students are encouraged to take summer courses offered by Canadian and American universities in Latin American and Caribbean countries. Students interested in such field experience should discuss their plans with a program advisor in Latin American and Caribbean Studies in order to recevive full credit for the selected course(s).
Through University of Windsor affiliation with the Ontario Co-operative Program in Latm American and Caribbean Studies (OCPLACS), students have access to the staff and library resources of five additional Ontario universities.

### 3.23.5 CERTIFICATE IN PUBLIC ADMINISTRATION

Total courses: ten.
Requirements:
(a) 45-100, 45-220, 45-221, 45-328, and 45-329;
(b) 41-110 and 41-111;
(c) three of 45-214, 45-222, 45-313 70-151, 71-140, 71-243.

Inquiries about the program should be drrected to a program advisor in Political So ence.

### 3.23.6 CERTIFICATE IN WOMEN'S STUDIES

Total courses: ten.
Requirements:
(a) Women's Studies 53-100, and al least two of 53-200, 53-201, or 53 210;
(b) seven Women's Studies of Women-Emphasis courses, with at least one at the 100 level.

## 4 FACULTY OF SCIENCE

## Dean

Richard J. Caron; B.M., M.M., Ph.D. (Waterloo).

## Associate Dean

Lesley Lovett-Doust; B.Sc. (Edinburgh), Ph.D. (Wales).

Students are directed to become familiar and to comply with the general regulations of the University as described in 2.4 which apply to all students. Additionally, individual programs within the Faculty of Science may have particular regulations. Students enroled in programs in the Faculty of Science also must comply with these particular requirements which may be found in the program sections of the Faculty.
Students also are directed to read the "Statement of Responsibility" on the inside front cover and the "Calendar of the Academic Year", 1.1.

### 4.1 Interdisciplinary Degree Programs

### 4.1.1 BACHELOR OF SCIENCE (ENVIRONMENTAL SCIENCE)

The environmental problems confronting our society increasingly demand interdisciplinary solutions, and the individual who has been prepared by an interdisciplinary education is in a strong position to contribute to societal needs. This program provides preparation for a career in environmental science. With the B.Sc., the graduate will be able to work as part of an interdisciplinary or multidisciplinary research team, or to work with government agencies or utilities in the monitoring of environmental quality. Students who complete an honours research thesis will be eligible for graduate school.
The field of environmental science requires education in a mix of biology (ecology) and
study of the physical environment, as well as a background in the aspects of chemistry involved in chemical assessment and monitoring of the environment. Students will also have the opportunity at some point to elect to emphasize biology, physical geography or geology, or to take a similar number of courses in all three areas. This program places strong emphasis on the technical side of environmental assessment, in contrast to the field of environmental studies in which human and planning-related aspects of the environment are emphasized.
In addition to the three core areas of geology, physical geography and biology, the chemistry of the environment is addressed through courses in instrumentation and analysis, and the application of chemical principles to environmental problems is developed in course offerings in geochemistry. The additional development that makes this program unique and particularly relevant to modern environmental scientists is the incorporation of required courses in Geographic Information Systems, or GIS. The GIS approach to organization of spatial data is central to integrated assessment of environmental variables and biological responses.
Inquiries about the Environmental Science Program should be directed to the Department of Earth Sciences, Room 204 Memorial Hall, extension 2486.

## Honours Environmental Science

Total courses: forty.
Major requirements: twenty-two courses, including Biology 55-140, 55-141, 55-210, 55211, 55-213, 55-237, 55-341; Geology 61-140, 61-141, 61-220, 61-224, 61-232, 61-440, 61-441; Environmental Science 66280; and Physical Geography 67-100, 67102, 67-246, 67-210, 67-310, 67-334, 67-402.

## Other requirements:

(a) Chemistry 59-140, 59-141, 59230; Mathematics and Statistics 62-120, 65-205; Computer Science 60-206; Human Geography 42-200;
(b) eleven courses chosen from the list of approved courses in Science and Arts And Social Sciences; up to four can be from the Faculty of Arts and Social Sciences; at least one must be from Arts (01-) and one from Social Sciences (02-). Any substitutions for the approved courses must be approved by the Department Head.

## Honours Environmental Science with Thesis

Total courses: forty.
Major requirements: twenty-four courses, including Biology 55-140,55-141,55-210, 55211, 55-213, 55-237, 55-341; Geology 61-140, 61-141, 61-220, 61-224, 61-232, 61-440, 61-441; Environmental Science 66280, 66-499 (a 6 credit course); and Physical Geography 67-100, 67-102, 67-246, 67210, 67-310, 67-334, 67-402.
Other requirements:
(a) Chemistry 59-140, 59-141, 59230; Mathematics and Statistics 62-120, 65-205; Computer Science 60-206; Human Geography 42-200;
(b) nine courses chosen from the list of approved courses in Science and Arts and Social Sciences; up to four can be from the Faculty of Arts and Social Sciences; at least one must be from Arts (01-) and one from Social Sciences (02-).

## RECOMMENDED COURSE SEQUENCE

The courses that are part of this program are well-defined, and since Science courses typically build on pre-requisites, the sequence of courses must be carefully followed. The sequencing outlined below is not very flexible for the first and second year, when students take a common core of introductory Biology, Geology, Physical Geography, Chemistry, and Mathematics and Statistics. However, the program has some flexibility in the third and fourth years.

## FIRST YEAR

Fall term: 55-140, 59-140, 61-140, 62-130, 67-100.
Winter term: 55-141, 59-141, 61-141, 65 205, 67-102.

## SECOND YEAR

Fall term: 55-210, 59-230, 61-220, 61-224, 61-232.
Winter Term: 55-211, 55-213, 42-200, 60 206, elective **.

## THIRD YEAR

Fall term: 55-237, 67-246, three electives"
Winter term: $66-280^{*}, 55-341,67-210,67$. 334 , one elective ${ }^{* *}$

## FOURTH YEAR

Fall term: 66-499+, 61-441, 67-402, 67-310. one elective**
Winter term: 66-499+, 61-440, three eleo tives ${ }^{* *}$
+Thesis, available only to Honours students with a major G.P.A. of 8.0 or above.

* Field course in environmental science.


## **Approved Elective Courses

Students in this program will take nine of eleven approved electives, depending on whether or not they undertake honours thesis research. To be eligible to take thesisiesearch a student must be in honours standing (major G.P.A. of 8.0 or above). The elective courses, listed in the following table, are all relevant to environmental science. Up to four (and a minimum of two) of these eleotives should be from the Faculty of Aris and Social Sciences with at least one Arts (01-) course and one Social Science (-02) course
APPROVED SCIENCE ELECTIVES
Biology: 55-324, 55-325, 55-366, 55-430, 55-437, 55-444, 55-445, 55-468
Chemistry: 59-250, 59-321
Geology: 61-221, 61-230, 61-231, 61-323, 61-324, 61-326, 61-424, 61-436
Physical Geography: 67-220, 67-221,67320, 67-410, 67-443
Physics: 64-290
General Science: 03-240

APPROVED ARTS AND SOCIAL SCIENCES ELECTIVES
Communication Studies: 40-367
Planning: 50-320; 50-393
Philosophy: 34-227
Political Science: 45-211
Sociology: 48-320

## COURSE DESCRIPTIONSENVIRONMENTAL SCIENCE

## 66-280. Field Methods in Environmental

 ScienceAn interdisciplinary course emphasizing field sampling and measurement techniques in the environmental sciences. Special consideration will be given to the measurement, evaluation and reporting of spatial and temporal data. Class work will feature the physical, chemical and biological aspects of environmental domains. Students will be required to complete a project and present a seminar. (Prerequisites: 42200 (or 67-200), 55-210, 59-250, 61-220, 64-140.) (2 weeks, Intersession, 20 hours lecture, 52 hours field/laboratory, 8 hours seminar.)
66-499. Thesis Research in

## Environmental Science

Students will carry out research within interdisciplinary teams working on projects in the environmental sciences. Each team member will contribute disciplinary expertise to the project and complete a thesis on his/her aspect of the project. In some cases, the student may work independently on a research project within a specific discipline. The thesis shall be presented in a written report and in a public seminar. (A 6.00 credit, two-semester course.) (Restricted to Semester 7 and 8 students with a major G.P.A. of 8.0 or above.)

### 4.1.2 BACHELOR OF SCIENCE (GENERAL SCIENCE)

Total courses: thirty.
Major requirements: six Science "core" courses, consisting of three, two-course sequences chosen from both 55-140 and 55141, both 59-140 and 59-141, both 60-104 and 60-205 (or 60-206), both 60-140 and 60141, both 61-140 and 61-141, both 62-130 and 65-205 (or both 62-140 and 62-141, or both 62-140 and 65-205), both 64-140 and 64-141, both 67-100 and 67-102;
plus eight additional Science courses, consisting of any four courses at the 200 level or above from two areas of study. (Some areas of study offer courses which may not be taken for credit by students majoring in the area of study. Such courses may not be taken to satisfy this requirement.) (Note: Students are reminded that some of the courses may have 200 level prerequisites or corequisites.)

## Other requirements:

(a) four additional Science courses;
(b) four courses from Arts/Languages and Social Sciences (see 2.4.14), with at least one from each;
(c) eight courses from any area of study.

At least four of the Science courses must be at the 300 level or above.
(For "Standing Required for Continuation" and "Standing Required for Graduation", see below, 4.1.4.)

### 4.1.3 BACHELOR OF SCIENCE (GENERAL SCIENCE) DEGREE COMPLETION PROGRAM.

This program is for graduates of a College diploma program in Medical Laboratory Technology (Science). Please contact the Office of the Registrar for further details of this program, which can be completed by Flexible Learning, or on-campus.

## 4 FACULTY OF SCIENCE

### 4.1.4 BACHELOR OF SCIENCE (SCIENCE, TECHNOLOGY, AND SOCIETY)

The STS program consists of three streams, STS-Life Sciences (Biology or Biochemistry), STS - Physical Sciences (Chemistry or Physics), and STS-Mathematics.
Total courses: thirty.
Required of all students:
(a) the interdisciplinary STS course, 03-200;
(b) one Computer Science pair consisting of 60-104 and 60-205 (or 60-206); or 60-140 and 60-141.
(c) one Life Science or Earth Sciences pair (for Mathematics or Physics students), consisting of 55-140 and 55-141, or 61-140 and 61-141, or 67-100 and 67-102; or a Mathematics pair (for Life Sciences and Chemistry students), consisting of 62-140 and 62-141, or 62-140 (or 62-130) and 65-205.
(d) two of English 26-100, 26-120, 26124; General, Arts and Social Sciences 01-212; Philosophy 34-160, 34-227, 34-228, and 34-253; Political Science 45-422.
(e) eleven additional approved nonScience courses. Students may substitute up to six Science courses for approved non-Science STS courses with approval of the Associate Dean of the Faculty.

Additional requirements-STS Life Sciences: twelve courses, consisting of 55-140, $55-141,55-210,55-211,55-213,59-140$, 59-141,59-230 or 59-235, and 59-261; plus three other Science courses at the 200 level or above.
Additional requirements-STS Physical Sciences: twelve courses consisting of:
(a) four courses selected from the following pairs: both 55-140 and 55141 , both $59-140$ and $59-141$, both 61-140 and 61-141, both 64-140
and 64-141, both 67-100 and 67. 102.
(b) any five of the following courses: Chemistry and Biochemistry 59 . 230, 59-235, 59-240, 59-241, 59. 250, 59-251, 59-261, and 59-320 Computer Science 60-140, 60 . 141, and 60-212; Geology 61-210 and 61-213 (credit allowed towards the B.Sc.(STS) with permis. sion of the Associate Dean); Mathematics and Statistics 62 . 215, 62-216, 62-292, and 62-318; Physics 64-220, 64-222, 64-250, and 64-261;
(c) three additional Science courses at the 200 level or above.

Additional requirements-STS Mathematics: twelve courses consisting of:
(a) 62-120, 62-140, 62-141, 62-190, 62-215, 62-216, 62-318, 65-205.
(b) two additional Mathematics or Slatistics courses from 62-220, 62 . 221, 62-222, 62-240, 62-324, 62-361, 62-374, 62-380, 65-251, 65-340, 65-350;
(c) two additional Science coursesat the 200 level or above.

## APPROVED NON-SCIENCE STS COURSES

(Other selections must be approved by the Associate Dean of Science)
Classical Civilization: 11-125
English: 26-100, 26-120, 26-124, 26-205
French: 29-121
General, Arts and Social Sciences: 01-203, 01-212, 07-232
Music: 32-102
Philosophy: 34-227, 34-228, 34-253
Communication Studies: 40-100, 40-101, 40-365, 40-374
Economics: 41-110, 41-111
Human Geography: 42-200, 42-459,
History: 43-297 (Credit allowed only if the topic has relevance to STS.)

Physical Geography: 67-200, 67-334
Polifical Science: 45-212, 45-422
Psychology: 46-115, 46-116, 46-220, 46-$223,46-224,46-256$
Sociology and Anthropology: 48-320 (or 49320.$)$

Women's Studies: 53-220
Management and Labour Studies: 71-140, 71:340

## STANDING REQUIRED FOR

 CONTINUATION FOR B.Sc. (GENERAL SCIENCE) AND B.Sc. (STS) DEGREES1) the minumum requirement for continuation "in good standing" in the General Science program or the Science, Technology, and Society program is a cumulative average of 5.0 and an average of 5.0 in the required Science courses of these programs.
2) If a student has not met the minimum cumulative and science course average requirements by the end of the Summer or Fall term, the student automatically will be placed on probation.
3) 1 if, at the end of the Winter term, a student has not met the minimum cumulative and science course average requirements, the student's record will be referred to the Academic Standing Committee for a decision.
(a) If one average is at least 5.0 , but the other is between 4.0 and 4.9 (or if both averages are between 4.0 and 4.9), the student normally will be allowed to continue on probation until the next evaluation period.
By the subsequent evaluation period, both averages must be raised to at least 5.0 or the student will be required to withdraw.
(b) If both averages are below 4.0, the student normally will be required to withdraw.
(c) If only one average is below 4.0, the student may be required to withdraw.
4) A student who has been required to withdraw may not register in the Faculty of Science for twelve months and may not apply for re-admission before the subsequent Summer term.
The student must apply for re-admission to the Faculty through the Office of the Registrar by the appropriate deadline date for the term desired and must with the applicationinclude a statement of rationale and any documentation of academic success attained elsewhere.
Readmission to the Faculty is not automatic and will be dependent upon the Academic Standing Committee's assessment of the applicant's prospects for successful completion of the program.
If readmitted, the student will be placed on probation and must raise the cumulative and science course averages to 5.0 by the next evaluation period and must satisfy any additional conditions of readmission which may have been imposed. If the student fails to meet such requirements, he or she normally will be required to withdraw.
A student who has been required to withdraw a second time will not be eligible for readmission under any conditions.
STANDING REQUIRED FOR
GRADUATION FROM THE
B.Sc. (GENERAL SCIENCE) AND THE B.Sc. (SCIENCE, TECHNOLOGY, AND SOCIETY) PROGRAMS
In order to graduate from the B.Sc. (General Science) program or the B.Sc. (Science, Technology, and Society) program, a student must obtain a cumulative average of 5.0 or better in all courses and an average of 5.0 or better in all required Faculty of Science courses in these programs.
Students receiving the B.Sc. (General Science) degree or the B.Sc. (Science, Technology, and Society) degree will have the designation, "General Science", or "Science, Technology, and Society" respectively indicated on their transcripts and diplomas.

### 4.1.5 CONCURRENT BACHELOR OF SCIENCE (GENERAL SCIENCE)/BACHELOR OF EDUCATION

The Concurrent Bachelor of Science (General Science)/Bachelor of Education Program is offered jointly over four years by the Faculty of Science and the Faculty of Education. The aim is to provide the opportunity and training to individuals who wish to teach science in schools at the intermediate and senior levels (Grade 7 through the end of secondary school).
Graduates of this program will receive two degrees and will acquire the necessary skills and knowledge for two teachable subjects and fulfill the requirements for certification by the Ontario College of Teachers. It offers students the opportunity to begin working towards teaching certification early in their academic careers. Students can emphasis Biology, Chemistry, Physics or Mathematics in the General Science program while concurrently studying education and doing practice teaching in schools. Practice teaching begins in year one of the program. All students should see an advisor in the Office of the Dean of Science, and in the Faculty of Education, on a regular basis, to discuss course selection and academic progress.

## PROGRAM REQUIREMENTS

Total courses: forty-four.
All students are required to complete the requirements of the B.Sc.(General Science) degree program, in addition to: seven, 6.00 credit hour Education courses: 80-203, 80204, 80-205, and 80-303; plus two of $80-$ $366,80-373,80-374,80-376$, or $80-380$; and seventy days of Practice Teaching (80-499). Requirements can also be met for teaching in the Roman Catholic school system by taking 80-200.
All students must select a group of Science courses that provide two teachable subjects(10 approved courses in one area, and six in another) and are advised to seek the recommendations of the program co-ordinators to ensure that their selection of courses fulfills B.Sc. (General Science) degree re-
quirements, as well as the requirements ior a 'teachable' subject from the perspectiveot the Faculty of Education. Students must take the major "core" courses in any area that is intended as a "first" or "second" teachable subject.
Many students elect to go on to complete an honours degree in one of their teachable subjects, thus increasing the range of their career opportunities.
The General Science degree totals thity credits, and requires : six Science "core" courses, consisting of three, two-course sequences chosen from both $55-140$ and 55 . 141, both 59-140 and 59-141, both $60-104$ and 60-205 (or 60-206), both 60-140 and 60141, both 61-140 and 61-141, both $62-130$ and 65-205 (or both 62-140 and 62-141, or both 62-140 and 65-205), both 64-140 and $64-141$, both $67-100$ and $67-102$; plus eight additional Science courses, consisting of four courses at the 200 level or above and including all "core" requirements in theseareas from two areas of study selected for the 100 -level core. (Some areas of study offer courses which may not be taken for crediliby students majoring in the area of study. Such courses may not be taken to satisfy this requirement.) (Note: Students are reminded that some of the courses may have 200 level prerequisites or corequisites.)

## Other requirements:

(a) four additional Science courses;
(b) four courses from Arts/Languages and Social Sciences (see 2.4.14), with at least one from each;
(c) eight courses from any area ol study.

At least four of the Science courses mustbe at the 300 level or above.
For "Standing Required for Continuation" and "Standing Required for Graduation" see below, 4.1.2)

## RECOMMENDED COURSE SEQUENCES

First Year. three pairs of 100 -level science, an arts and a social science course; and the education courses, 80-203 and 80-205.
Intersession: 80-499 (ten days).
Second Year: nine courses in the B.Sc. program; and the education course, 80-303.
Intersession: continuation of 80-499 (twenty days).
Third Year: four(or five) courses in the B.Sc. program; plus 80-204 and one of 80-373, 80-374, 80-376, or 80-380.
Intersession: continuation of 80-499 (twenty days).
Fourth Year: nine (or eight) courses in the B.SC. program; and one further course of 80 -$366,80-373,80-374,80-376$, or $80-380$; plus $80-200$ if applicable.
Intersession: completion of 80-499 (twenty days).

## PRACTICE TEACHING

Directed observation and practice teaching will be arranged by the Faculty of Education to include practical experience in schools and programs applicable to the concentration for which the student is a candidate. Candidates in this program will practice leach from grade seven to the end of Secondary School, inclusive.

## STANDING REQUIRED FOR <br> CONTINUATION

Students must comply with the general university regulations (see 2.4.19). In addition candidates who obtain a final grade of less than C C in (a) practice teaching, or (b) three or more Education courses in the program will not be recommended for certification. Candidates must complete all requirements of the Concurrent Program in four years. Flexible learning available at Windsor allows students to take some of their required B.Sc. courses in Summer Term (intersession or summer courses) or by distance education.

## GRADUATION

Graduates of the program will receive both the Bachelor of Science and the Bachelor of Education (General) degrees.

The Faculty of Education does not issue a teaching certificate. The Ontario Certificate of Qualification is issued by the Ontario College of Teachers upon recommendation of the Dean of the Faculty of Education. Only Canadian citizens or Permanent Residents of Canada qualify for this certificate.

### 4.1.6 CONCURRENT BACHELOR OF SCIENCE/BACHELOR OF EDUCATION/DIPLOMA IN EARLY CHILDHOOD EDUCATION

The Concurrent Bachelor of Science/Bachelor of Education/Diploma in Early Childhood Education Program is offered jointly over five years by the Faculty of Science and the Faculty of Education, in cooperation with St. Clair College. The aim is to provide the opportunity and training to individuals who wish to teach at the preschool and Primary-Junior levels.
Graduates of this program will receive two degrees and a diploma and will acquire the necessary skills and knowledge to fulfill the requirements for certification by the Ontario College of Teachers.
Students may take any B.Sc. degree as part of this triple qualification, but for primary/junior teaching we strongly recommend the B.Sc. Science, Technology and Society (a 30 credit program). This degree program is desirable because it has a good mixture of Science, Arts and Social Sciences requirements. However, students who may be interested in later training to teach in the intermediate and senior divisions may wish to take a B.Sc. in a science discipline degree, either at the general or the honours level. An honours degree conbined with the B.Ed. and E.C.E. will typically take an extra year of coursework in science.

## PROGRAM REQUIREMENTS

All students are required to complete the thirty-course requirement of the University of Windsor B.Sc. degree in Science, Technology and Society, in addition to the Education courses 80-203 ( 34 hours), 80-204 (34 hours), 80-205 ( 34 hours), and 80-301 (144 hours), and 60 days ( 300 hours) of Practice

Teaching (80-499). The St. Clair College Early Childhood Education component will consist of nine courses, ED 117, ED 120, ED 130, ED 209, ED 210 F, ED 310 , ED 402, ED 408, ED 409, and 640 hours of Field Placement. Requirements can also be met for teaching in the Roman Catholic school system by taking 80-200. With additional study in the University's Summer Session, students may be able to accelerate the completion of their B.Sc. program. With Summer and and/or additional Fall/Winter studies, they may pursue four-year Honours B.Sc. programs as well.

## B.SC.ISTS REQUIREMENTS

Required of all students:
(a) the interdisciplinary STS course, 03-200;
(b) one Computer Science pair consisting of 60-104 and 60-205 (or 60-206); or 60-140 and 60-141 (or 60-100).
(c) one Mathematics pair consisting of 62-140 and 62-141, or 62-140 (or 62-130) and 65-205.
(d) English 26-100 and Philosophy 34-160;
(e) twelve Science courses in two or more subject areas;
(f) eleven additional approved nonScience courses.

## APPROVED NON-SCIENCE STS COURSES

(Other selections must be approved by the Associate Dean of Science)
Classical Civilization: 11-125
English: 26-100, 26-120, 26-124, 26-205
French: 29-121
General, Arts and Social Sciences: 01-203, 01-212, 07-232
Music: 32-102
Philosophy: 34-227, 34-228, 34-253
Communication Studies: 40-100, 40-101, 40-365, 40-374
Economics: 41-110, 41-111
Human Geography: 42-200

History: 43-297 (Credit allowed only if the topic has relevance to STS.)
Political Science: 45-212, 45-422
Psychology: 46-115, 46-116, 46-220, 46 223, 46-224, 46-256

Sociology and Anthropology: 48-320 (or 49 320.)

Women's Studies: 53-220
Management and Labour Studies: 71-140 71-340
Students wishing to take Arts and Social soences courses that are not on this list maj apply to the Associate Dean of Science to permission to take them towards the degree

## COURSE SEQUENCE

FIRST YEAR

## Fall Term: five B.Sc. courses.

Winter Term: three B.Sc courses; plus the B.Ed course 80-301 (Language Arts and Math); and the E.C.E. course ED 210 F (Cur riculum Methods).
Spring Term: two weeks of E.C.E. Preschod and two weeks of B.Ed. Primary Grades practice teaching.

## SECOND YEAR

Fall Term: five B.Sc. courses.
Winter Term: three B.Sc. courses; the B.Ed course 80-203 (Educational Psychology): and the E.C.E. course ED 120 (Child Behaw iour Management).
Spring Term: four weeks of B.Ed. JKSK practice teaching.

## THIRD YEAR

Fall Term: five B.Sc. courses.
Winter Term: three B.Sc. courses; the B.Ed course 80-301 (Art/Music/Phys. Ed.); and the E.C.E. course ED 130 (Child Develop ment).
Spring Term: four weeks of B.Ed. Primay Grades practice teaching.

## FOURTH YEAR

Fall Term: the E.C.E. courses ED 310 (InlantToddler) and ED 402F (Atypical Child); and the B.Ed course 80-204 (Exceptional Child).
Winter Term: three B.Sc. courses; the B.Ed course 80-301 (Social Studies/Science/Computers); and the E.C.E. course ED 117 (Introduction to E.C.E.).
Spring Term: four weeks of E.C.E. InlantToddler practice teaching ( 150 hours to(al).

## AFTH YEAR

Fall Term: three B.Sc. courses; the B.Ed.course 80-205 (Educational Administration); and the E.C.E. course ED 409 (Parent Ed.).
Winter Term: the E.C.E. courses ED 209 (Curiculum Development) and ED 408 (Assessment); the B.Ed. Primary Grades Practice Teaching course 80-499 ( 60 days/300 hours).
Spring Term: four weeks of E.C.E. InlantToddler practice teaching ( 150 hours to(al).

### 4.1.7 CONCURRENT BACHELOR OF SCIENCE (GENERAL SCIENCE) DEGREE/MEDICAL LABORATORY SCIENCE DIPLOMA

The Concurrent Bachelor of Science (General Science) Degree/Medical Laboratory Science Diploma Program is offered jointly overfour years by the Faculty of Science of the University and the Department of Health Sciences of St. Clair College. The aim is to provide the opportunity and training to individuals who wish to pursue a career in health care primarily in the area responsible for the quality of health care laboratory testing.
Graduates of this program will receive both a degree from the University and a diploma from St. Clair College. The program includes a clinical internship in a hospital or private heath care testing laboratory and graduates
will acquire the necessary skills and knowledge to apply for national registration with the Canadian Society for Medical Laboratory Science (CSMLS). Students attend courses offered at either the University or St. Clair College and in some terms attend both institutions.
In the list that follows, substitutes can be considered for courses marked with an asterisk, provided the altematives still meet the requirements of the B.Sc. General Science degree. However the list presented includes the courses likely to be useful to graduates in clinical practice or in the national registration examinations (CSMLS).

## PROGRAM REQUIREMENTS

FIRST YEAR

## Fall Term

University of Windsor Courses
55-140. Biological Diversity
55-202. Human Anatomy
55-204. Physiology I
59-140. General Chemistry I
60-104. Computer Concepts for End-Users
62-140. * Calculus A or
62-130. "Elements of Calculus

## Winter Term

University of Windsor Courses
55-141. Cell Biology
55-205. Physiology II
59-141. General Chemistry II
60-205. Intro. to the Internet
65-205. Statistics for the Sciences

St. Clair College Courses

ML-105.Med. Lab. Orientation and Skills

| Summer Term | THIRD YEAR |
| :---: | :---: |
| University of Windsor Courses | Fall Term |
| 03-240. Science Writing | University of Windsor Courses |
| or | 55-350.* Molecular Cell Biology |
| 26-100. Composition | 55-352.* Medical Microbiology |
|  | 59-362. * Intermediary Metabolism 1 |
| St. Clair College Courses | 46-1 15.* Introduction to Psychology as a Behavioural Science |
| ML-303.Instrumental Technology | 71-140.* Principles of Management |
| ML-307.Introduction to Clinical Laboratory |  |
| ML-316. Clinical Immunology and Serology | St. Clair College Courses |
| SECOND YEAR | ML-406A.Clinical Microbiology A |
| Fall Term | ML-412A. Histotech./Histology A |
| University of Windsor Courses | Winter Term |
| 55-237. Introductory Microbiology | St. Clair College Courses |
| 59-230. Introductory Organic Chemistry |  |
| 64-140.* Introductory Physics I | ML-406B.Clinical Microbiology B |
| Clair College Courses | ML-406C.Clinical Microbiology C |
| Clar Colloge Courses | ML-412B. Histotech./Histology B |
| ML-409A.Clin. Lab. Sci. A (Theory) | ML-412C. Histotech./Histology C |
| ML-411A.Clin. Lab. Sci. A (Practical) | ML-420.Mycology and Parasitology |
| Winter Term | Summer Term |
| University of Windsor Courses |  |
| 55-211.* Genetics | Hospital Internship- 32 continuous weeks begins |
| 55-213.* General Physiology | ML-505.Clinical Chemistry Internship |
| 59-261.* Organic Chemistry of | ML-519.Clinical Microbiology Internship |
| Biomolecules | ML-522.Hematology Internship |
| St. Clair College Courses | ML-523. Histotechnology Internship |
|  | ML-525. Transfusion Science Internship |
| ML-409B.Clin. Lab. Sci. B (Theory) | ML-706G.Change and the Workplace |
| ML-411B.Clin. Lab. Sci. B (Practical) |  |
|  | FOURTH YEAR |
| Summer Term | Fall Term |
| St. Clair College Courses | Hospital Internship continues |
| ML-317B.Intro. Micro. (labs only) | ML-505.Clinical Chemistry Internship |
| ML-409C.Clin. Lab. Sci. C (Theory) | ML-519.Clinical Microbiology Internship |
| ML-411C.Clin. Lab. Sci. C (Practical) | ML-522. Hematology Internship |
|  | ML-523. Histotechnology Internship |

## THIRD YEAR

## Fall Term

University of Windsor Courses
55-350. *Molecular Cell Biology or
55-352.* Medical Microbiology
59-362.* Intermediary Metabolism I
46-1 15.* Introduction to Psychology as a
Behavioural Science
71-140.* Principles of Management
St. Clair College Courses
ML-406A.Clinical Microbiology A
ML-412A.Histotech./Histology A

## Winter Term

St. Clair College Courses

ML-406B.Clinical Microbiology B
ML-406C.Clinical Microbiology C
ML-412B. Histotech./Histology B
ML-412C. Histotech./Histology C
ML-420.Mycology and Parasitology

## Summer Term

Hospital Internship- 32 continuous weeks begins
ML-505.Clinical Chemistry Internship
ML-519.Clinical Microbiology Internship
ML-522. Hematology Intemship
ML-523. Histotechnology Internship
ML-525. Transfusion Science Internship
ML-706G.Change and the Workplace

## FOURTH YEAR

Fall Term
Hospital Internship continues

ML-505. Clinical Chemistry Internship
ML-519.Clinical Microbiology Internship
ML-522. Hematology Internship
ML-523. Histotechnology Internship

ML-525. Transfusion Science Internship
ML-706G.Change and the Workplace

## Winter Term

University of Windsor Courses
55-471. * Virology
55-363. . Intermediary Metabolism II 46-116. Introduction to Psychology as a Social Science
71-243." Human Resources Management and one University Science option*

Summer Term

Review for CSMLS Examinations
ML-920.Hematology Review
ML-921. Transfusion Science Review
ML-922. Histotechnology Review
ML-923.Clinical Microbiology Review
ML-924.Clinical Chemistry Review

## CLINICAL PLACEMENTS

Directed observation and work study will be arranged by St. Clair College at an accredted hospital or private laboratory to include practical experience in the medical laboratory technology profession in Ontario.

## STANDING REQUIRED FOR CONTINUATION

1) In addition to complying with the general university regulations (see 2.4.19) students mustalso maintain a program G.P.A. and a term G.P.A. of 2.00 or better in all courses taken at St. Clair College.
2) If a student has not met the minimum G.P.A. requirements at the end of any term, the student automatically will be placed on probation.
3) II, at the end of the Winter term, a student has not met the minimum G.P.A. requirements at the College, the student's record will be referred to the Academic Standing Committee for decision. An Academic Warning will be issued by St. Clair College if, at the end of the semester, $15 \%$ of the St. Clair College program credit hours have been failed.
(a) If the required degree G.P.A. at the University is between 4.0 and 4.9, or at the end of a semester, the St. Clair College program semester G.P.A. falls below 2.00, and if not more than $32 \%$ of the St. Clair College program credit hours have been failed, the student normally will be allowed to continue on probation until the next evaluation period.
By the subsequent evaluation period, the required degree G.P.A. and the diploma program and term G.P.A. must be at least 5.0 and 2.00 respectively, or the student will be required to withdraw.
(b) If the degree G.P.A. at the University is below 4.0, or if the diploma program or term G.P.A. is below 2.00 for two consecutive semesters, or if the student has failed three or more diploma courses (or the same course twice), or more than $32 \%$ of diploma program hours, the student normally will be required to withdraw.
4) A student who has been required to withdraw from the Concurrent program may not apply for re-admission to the Concurrent program, but may be permitted to transfer to an altemative degree program at the University, or a diploma program at St. Clair College with approval from the Associate Dean of the Faculty of Science and the Chair of Health Sciences at St. Clair College. However, in most cases a student who has been required to withdraw may not register in the Faculty of Science at the University for twelve months and may not apply for re-admission to another program in the Faculty of Science at the University before the subsequent Summer term.

## STANDING REQUIRED FOR GRADUATION

In addition to complying with the general University regulations (see 2.4.20) students must obtain a diploma program and final term G.P.A. of 2.00 or better in St. Clair College courses.

Graduates of the program will receive both the Bachelor of Science (General Science) degree from the University and the Medical Laboratory Science diploma from St. Clair College.
St. Clair College does not issue a professional entry to practice. Registration requires successful completion of examinations from the Canadian Society of Medical Laboratory Science, and the College of Medical Laboratory Technologists of Ontario.

### 4.1.8 BACHELOR OF SCIENCE (WITH MAJOR)

Programs leading to an Honours B.Sc. (with Major) require the completion of forty courses. These programs require a greater concentration than the General Science and STS degree programs.
Specific requirements differ depending upon the Honours Major(s). Course selection may provide for further specialization in a single subject or in a combination of related subjects. Students who achieve a major G.P.A. of 8.0 or higher will receive the Honours degree.
The following programs are offered:
Biological Sciences-Honours Biological Sciences, Honours Biological Sciences-Co-operative Education Program in Environmental Biology, Honours Biology and Psychology, Honours Biology and Computer Science.

Chemistry and Biochemistry-Honours Biochemistry, Honours Chemistry,
Honours Chemistry and Physics.
Computer Science-Honours Computer Information Systems, Co-operative Education program in Honours Computer Information Systems, Honours Computer Science with option in Software Engineering, Co-operative Education program in Honours Computer Science with option in Software Engineering, Computers and Multi-Media, Co-operative Education program in Computers and Multi-Media.

Earth Sciences-Honours Geology, Horn ours Environmental Geoscience, plus Ca. operative Education Programs in Honovs Geology and Honours Environmental Geoco cience, Honours Geoinformatics, Honours Environmental Resource management Honours Physical Geography. Students wishing to combine Chemistry and Physis with Geology must enrol in an Honours Ge. ology program.
Environmental Science-the major in envronmental Science includes Geology, Geography and Biology components.
Physics-Honours Physics and High Tect. nology; plus combined Honours programsin Physics and Computer Science and in Chemistry and Physics.

### 4.1.9 B.Sc. HONOURS WITH THESIS PROGRAMS

Programs leading to an Honours B.SC. winh Thesis require the completion of forty courses, of which two course credits would result in a thesis in the final year of study.
Honours standing (major G.P.A. of 8.0 of higher) is required for graduation in all B.SC with Thesis programs.
In any program some degree of specialization is possible; course selection may provide for further specialization in a single subject or in a combination of related subjects.

### 4.1.10 COMPUTER SCIENCE

Both general and honours programs are of fered, leading to the degree of Bachelor of Computer Science (B.C.S.). Each pemits the student to augment a specialized stud) of computers with an extensive study ofore of a number of related fields, or with a broad spectrum of other courses.
Also offered are B.Sc. programs leadinglt degrees in the Computer Information $\mathrm{S} / \mathrm{F}$ tems Major, the Software Engineering Mz jor, and the Computers and Multi-Media Major.

## 4 FACULTY OF SCIENCE

### 4.1.11 MATHEMATICS AND STATISTICS

Both general and honours programs lead to the Bachelor of Mathemetics (B. Math.) degree. Mathematics also may be combined with Computer Science or another major leading to the Honours B.Math. degree. An honours Co -operative Education program lead's to the Bachelor of Operations Re search (B.O.R.) degree

### 4.1.12 ECONOMICS

Both general and honours programs are oftered leading to the Bachelor of Arts degree in Economics. Combined degrees are also avalable.

### 4.1.13 MINOR IN ENVIRONMENTAL SCIENCE

The minor in Environmental Science consists of a total of six courses as described below.

Selected courses leading to the credit of a minor in Environmental Science may not include antirequisite or prerequisite courses in a student's degree program, nor can they fuffill "Major" requirements of a student's program as it appears in this Calendar.

Select a total of six courses from the following:
(a) two pairs of courses selected from: $55-140$ and 55-141, 61-140 and 61-141, 67-100 and 67-102;
(b) two courses at the 200 level selected from the list of required courses for the Honours Environmental Science program.

### 4.1.14 MINOR IN GENERAL SCIENCE

The minor in General Science consists of a total of six Science courses as described below.

Selected courses leading to a minor in General Science may not include antirequisite or prerequisite courses in a student's program, nor can they fulfill "Major" requirements of a
student's degree program as it appears in this Calendar. All students are reminded that for courses leading to the minor in General Science, the two introductory computer courses, 60-104 and 73-213, are antirequisites, as are the five introductory statistics courses, 65-250, 65-205, 02-250, 73-105 and 85-222.
Science students must also remember to select courses that are eligible for credit towards the B.Sc. degree.
Select two, two-course sequences from the following:
(a) 55-140 and 55-141;
(b) 59-140 and 59-141;
(c) 60-104 and 60-205 (or 60-206);
(d) 60-140 and 60-141*;
(e) 61-140* and 61-141*;
(f) 62-140 and 62-141;
(g) 64-140 and 64-141;
(h) 62-140 and 65-205;
(i) 62-130 and 65-205;
(j) 67-100* and 67-102*;

## plus:

Select two additional Science courses at the 200 level or above from one of the areas of study from which one pair of courses had already been selected above.

* Pairs of courses designated with an asterisk are recommended for students who have not successfully completed an OAC requirement in that discipline. Unless specified, two-course sequences cannot be modified.


### 4.1.15 MINOR IN SCIENCE, TECHNOLOGY AND SOCIETY

The minor in Science, Technology, and Society consists of a total of six semester courses as described below.
Selected courses leading to the credit of a minor in Science, Technology, and Society may not consist of antirequisite or prerequisite courses in a students's degree program, nor can they fulfill "Major" requirements of a student's program as it appears in this Calendar.

All students must take the Science, Technology, and Society course 03-200 and either one two-course (a pair) sequence listed below, or two courses from a category in which pairs are not listed:
(a) 55-140 and 55-141;
(b) 59-140 and 59-141;
(c) 60-104* (or 60-140*) and one additional course in Computer Science;
(d) 61-140* and 61-141*;
(e) two courses in Mathematics or Statistics;
(f) 64-140 and 64-141;
(g) 67-100* and 67-102*
and three additional non-Science STS courses identified in the list of courses available as non-Science STS courses in the Bachelor of Science (Science, Technology, and Society) degree program.

* Pairs of courses designated with an asterisk are recommended for students who have not successfully completed an OAC requirement in that discipline. Unless specified, two-course sequences cannot be modified.


### 4.1.16 PRE-MEDICAL AND OTHER PRE-PROFESSIONAL PROGRAMS

In addition to the degree programs, the Faculty of Science offers combinations of course selections for students intending to apply to professional schools such as medicine, dentistry, optometry, pharmacy, physiotherapy, alternative medicine, chiropractic, radiation therapy, etc.
All students intending to apply for admission to a professional school are advised to study carefully the requirements of the particular school(s) to which admission is sought because there is some variation, both with respect to choice of subjects and number of years of study required for entrance. Institutions may also change their requirements from time to time. Students may obtain academic advice from the Pre-Health Profession Advisor in the Office of the Dean of Science.

## Pre-Teaching Program

Certificate of Qualification: Students who contemplate registering in the Faculty of Education at the University of Windsor, ora comparable institution, should be aware thal Certificates of Qualification are awarded in the Primary-Junior (grades K-6 inclusive), Junior-Intermediate (grades 4-10 inclusive), and Intermediate-Senior (grades 7 to the end of secondary school) areas of concentration by the Ontario College of Teachers.
Those intending to teach at the Junior-Intermediate level must successfully completea minimum of six courses in a subject laught in secondary schools (see 5.2.3). The B.SC in General Science or Science, Technology, and Society are thirty-credit programs that can provide competence in two teachable subjects. However, an honours degree in a disciplinary major allows the graduate a wider range of career opportunities. A Concurrent B.Sc.(General Science)/B.Ed. Program is also available (see 4.1.5) as well as a concurrent B.Sc./B.Ed./E.C.E. program (see 4.1.6).
Honours Specialist Qualification: By the proper choice of subjects, students completing certain honours programs with a $B$ average may qualify for admission to courses leading to the Honours Specialist Qualifications at the Faculty of Education at this University, or other Ontario faculties or colleges of education. In order to acquire such qualification, a minimum of two years of success: ful teaching experience is necessary following the granting of the Ontario Certif. cate of Qualification.
Advising is available at the Faculty of Educztion.

### 4.1.17 ADDITIONAL UNDERGRADUATE DEGREES

Students with a B.Sc. in an Honours program may not receive a three-year General B.Sc. degree in a second major area of study. Students with an Honours B.Sc. degree in a particular area of study may notreceive a further, four-year combined Honours degree in that area and another.

Astudent completing a second major area of study in a three-year General Bachelor of Science program may not receive an additional B.Sc., but may request a "Letter of Equivalency" upon completion of the program requirements for the major as well as at least five courses beyond the thirty courses required for the B.Sc. degree.
Students who have already received a degree other than a three-year General Bachelor of Science degree, and who wish to pursue an additional undergraduate threeyear General degree in the Faculty of Science, must meet all requirements for that degree and complete a minimum of ten courses above the 100 level at the University of Windsor, with at least four in the major field as advised by the major subject area.
It the additional degree sought is a four-year Honours Bachelor of Arts degree, the student must complete a minimum of ten addifional courses above the 100 level at the University of Windsor, with at least eight in the major field(s), as advised by the major subject area(s). (See also 2.4.6, 2.4.7, 3.1.4.)

### 4.2 General Courses, Faculty of Science

## 03-200. Science, Technology, and Society

This course is designed to explore the complex inter-relationships between science, technology, and society. The nature of science and scientific method and selected current issues in science and technology will be discussed. Topics may include chemicals in society, biotechnology and related issues, nuclear energy, and the impact of these technologies on society. Technology, as it relates to human values and public awareness, will also be considered. (Not open to Semester 1 and 2 students.) (3 lecture hours a week.)

## 03-240. Science Writing

This course is designed to provide students with experience in reading, interpreting, and writing about science. Topics include an overview of the scientific method, searching scientific literature, and learning how to interpret and properly produce a scientific paper or report, including the use of electronic tools. Guidelines for contributors to Canadian scientific journals will be highlighted. (Not open to Semester 1 and 2 students.) (3 lecture hours a week)

### 4.3 Biological Sciences

(Ext. 2697)
OFFICERS OF INSTRUCTION

## Professors Emeriti

Benedict, Winfred G.; C.D., M.Phil. (Leeds), B.A. (Windsor), B.S.A., Ph.D. (Toronto), F.L.S.-1957.

Pillay, Dathathry T.N.; B.Sc. (Osmania), M.S., Ph.D. (Comell)-1963.

## Professors

Wamer, Alden H.; B.A. (Maine), M.A., Ph.D. (Southerm Illinois)-1965.
Thomas, Donovan D.; B.S. (Natal), M.S., Ph.D. (Florida)-1968.
M'Closkey, Robert T.; B.A. (U.C.L.A.), M.A. (California State), Ph.D. (U. of California)1970.

Fackrell, Hugh B.; B.Sc., M.Sc. (Western Ontario), Ph.D. (Manitoba)-1973.
Cotter, David A.; B.S. (Penn State), M.S., Ph.D. (Wisconsin)-1975. (Head of the Department)
Dufresne, Michael J. P.; B.Sc. (York), Ph.D. (Alberta)-1976.
Ciborowski, Jan J. H.; B.Sc., M.Sc.(Toronto), Ph.D. (Alberta)-1984.

Haffner, G. Douglas; B.Sc. (Queen's), Ph.D. (London)-1986.
Corkum, Lynda D.; B.A., M.A. (Drake), Ph.D. (Toronto)-1987.
Lovett Doust, Jonathan N.; B.Sc. (Queen's), Ph.D. (Wales)-1988.
Lovett Doust, Lesley; B.Sc. (Edinburgh), Ph.D. (Wales)-1988. (Associate Dean, faculty of Science)
Maclsaac, Hugh J.; B.Sc. (Windsor), M.Sc. (Toronto), Ph.D. (Dartmouth)-1992.
Sale, Peter F.; B.Sc., M.A. (Toronto), Ph.D. (Hawaii)-1994.

## Associate Professors

Taylor, Paul; B.Sc. (George Williams, Chicago), Ph.D. (Toledo)-1975.
Weis, Ivan Michael; B.Sc. (Syracuse), M.Sc., Ph.D. (Iowa)-1976.

Zielinski, Barbara; B.Sc., M.Sc. (Waterloo), Ph.D. (Manitoba)-1990.
Heath, Daniel D.; B.Sc., M.Sc. (McGill), Ph.D (British Columbia)-2000.

## Assistant Professors

Crawford, Michael J.; B.Sc., M.Sc., Ph.D. (Toronto)-1997.
Hubberstey, Andrew V.; B.Sc. (Waterloo), M.Sc., Ph.D. (Guelph)-1997.

Ali, Adnan; B.Sc. (Punjab), M.Sc. (Quaid+ Azam), Ph.D. (Waterloo)-2001.

## Adjunct Professors

Brandt, Stephen B.; B.A., M.S., Ph.D. (Wis-consin)-1997.
Papadopoulos, Tom A.P.; M.Sc., Ph.D. (Guelph)-1999.

## Adjunct Associate Professors

Metcalfe, Christopher D.; B.Sc. (Manitoba), M.Sc. (New Brunswick), Ph.D. (McMas-ter)-1991.
Reynoldson, Trefor B.; B.Sc. (Leeds), M.Sc. (Calgary). Ph.D. (Lancaster)-1991.

## Adjunct Assistant Professor

Johnson, Timothy B.; B.Sc. (Guelph), M.Sc. (York), Ph.D. (Wisconsin)-1998.

### 4.3.1 PROGRAMS OF STUDY

## Placement

Students without OAC Biology and who were admitted to other University programs may be allowed to substitute Biology 55-100 and 55-101 as prerequisites for Biology 55 140 and 55-141 provided that a combined grade point average of at least 8.0 is obtained in those courses. However, they will not receive credit towards a B.Sc. degree in Biological Sciences for 55-100 and 55-101.

## Areas of Study in Biological Sciences

The B.Sc. in Biological Sciences provides entry to a broad range of teaching, research and biomedical careers. Most require formal, post-graduate training, and it is the student's responsibility to determine, as early as possible, the specific requirements of

### 4.3 Biological Sciences

programs to which he or she wishes to proceed. (See also 4.1.16.)
Programs in Biological Sciences provide a solidly based background ensuring that the general requirements of post-graduate programs will be fulfilled. The array of courses offered is such that students may emphasize areas of particular interest or aptitude. Advice on career paths and on course selection is available to students through a student advising program. Pursuit of the Honours with thesis degree is strongly recommended for professional advancement in science.

## Preparation for Graduate and Professional Schools

Courses are available to permit the student to become fully prepared for entry into medical, dental, pharmacy, and other professional schools, as well as graduate programs in the biological sciences. Preprofessional advising is available in the Office of the Associate Dean, Lambton Tower. Students should seek advice on course selection early in their program.

## Honours Biological Sciences

Undergraduate students may be allowed, with the consent of the instructor, to take one graduate course for credit.
Total courses: forty.
Major requirements: twenty courses, including the "Core" courses 55-140, 55-141, 55210, 55-211, and 55-213; and fifteen other Biology courses. At least ten courses must be at the 300 level or above. (Recommended: 55-320 and 55-341.)
Other requirements:
(a) seven Science courses, including 59-140, 59-141, 59-230, 59-261, 65-205, and at least one pair of both 61-140 and 61-141, or both 64-140 and 64-141, or both 60104 and either 60-205 or 60-206, or both 60-140 and 60-141, or both 67-100 and 67-102.
(b) seven additional Science courses, including additional courses in Bi ology. At least two of these courses must be at the 300 level or above.
(c) four options from Arts/Languages and Social Sciences, with at least one from each (see 2.4.14);
(d) two courses from any area of study.

## Honours Biological Sciences with Thesis

In order to earn a B.Sc. in Biological Sciences with Thesis, students must also include 55-420 (research project, a 6.0 credit hour course which counts as two courses) within the "Major requirements" as outlined for the Biological Sciences Honours program described above. It should be noted that only students who have maintained a major G.P.A. of 8.0 and a cumulative G.P.A of 5.0 will be permitted to enrol in 55-420.

## Biological Sciences- <br> Co-operative Program in Environmental Biology

The Co-operative Program in Environmental Biology aims to provide students with a strong background in pure and applied ecology. Students will be exposed to the principles of population, community, and ecosystem ecology, as well as theories and techniques involved in assessing contamination of freshwater systems.

## ADMISSION AND APPLICATION

Students seeking admission to the Co-operative Program in Environmental Biology must have a major G.P.A. of 8.0 or higher and a cumulative G.P.A. of 5.0 or higher. In the Fall of their first or second year of study, students must apply directly to the Office of Co-op Education and Career Services for admission to the Program. Applications consist of a completed co-op information sheet and an personal resumé. Interviews will be scheduled with the best-qualified applicants. Decisions regarding admissions will be made after successful completion of the application and interview process and verification of the student's meeting academic requirements.
In the summer following first year, students admitted to the program will participate in a two-week field work course. Immediately following the second year, and during the

### 4.3 Biological Sciences

fourth year, students will participate in eightmonth co-operative work placements.

## WORK TERM EVALUATION

A student's performance in a work term will be evaluated as either "Satisfactory" or "Unsatisfactory".
Students who obtain an evaluation of "Unsatisfactory", or who do not report for interviews, or who fail to report to an employer after accepting a work placement, or who are dismissed for cause, or who leave an employer without permission, may be required to withdraw from the Co-operative Program.
A student who obtains an evaluation of "Unsatisfactory" in any two work terms will be required to withdraw from the Co-operative Program in Environmental Biology.

## PROGRAM REQUIREMENTS

Undergraduate students may be allowed, with the consent of the instructor, to take one graduate course for credit. In order to continue in the program students must maintain a major G.P.A of 8.0 and a cumulative G.P.A. of 5.0.

## Total courses: forty.

Major requirements: twenty-two courses, including the "Core" courses of 55-140, 55-$141,55-210,55-211$, and 55-213; plus 55-234 (or another approved ecological field study course), 55-320, 55-430, 55-444, and $55-445$; plus the research course, 55-420 (a 6.0 credit course which counts as two courses); and six of 55-201, 55-324, 55-325, $55-341,55-359,55-437,55-440$, and 55468; and four additional Biology courses. Course selections are to be made in consultation with the Co -op Program co-ordinator.

## Other requirements:

(a) twelve additional courses from Science, including 59-140, $59-$ 141, 59-230, 59-261, 60-104, 61436, 62-130 or 62-140, 65-205, and one pair of both 61-140 and 61-141, or both 64-140 and 64141, or both 67-100 and 67-102. (One of 59-320 or 59-321 is strongly recommended.);
(b) four courses from Social Sciences (see 2.4.14). (Recommended:42. 131 and 45-201);
(c) two courses from Arts or Languages (see 2.4.14). (Recommended: 26-100.)

## Combined B.Sc. Honours Program in Biological Sciences and Psychology: Behaviour, Cognition and Neuroscience

 Neuroscience is a strong and growing field that strives to understand brain function at the molecular, behavioural and cognitive levels. This interdisciplinary program comprises required courses primarily from the departments of Biological Sciences and Psychology. Students also participate in bweekly research colloquia. In their final year, students prepare a research-based thesisin behaviour, cognition or neuroscience. Students must maintain a G.P.A. of 8.0 or higher in Biology and Psychology courses.Total courses: forty.
Major requirements--Biological Sciences: 55-140, 55-141, 55-210, 55-211, 55-213, $55-341,55-485$; plus four additional Biology courses.
Major requirements--Psychology: 46-115, 46-116, 46-223, 46-256 (or 46-336), 46-313, 46-322 (or 46-323), 46-353, 46-340 (or 46355), 46-358, 46-457, and one other Psychology course.
Major requirements--Biological Sciences or Psychology: one of 55-320, 46-229, or 46230; and either 55-420 (a 6.00 credit course), or 46-496 and 46-497. (The Psychology thesis will be within the subject area of behavioural and cognitive neuroscience.) Other requirements:
(a) 65-205 (or 02-250);
(b) one pair of both 64-140 and 64141, or both 60-104 and either 60205 or 60-206, or both 61-140 and $61-141$, or both 67-100 and 67. 102;
(c) 59-140, 59-141, 59-230, 59-261;
(d) one course from Arts;
(e) one course from Social Sciences (excluding Psychology);

### 4.3 Biological Sciences

(f) four additional courses at the 300 level or above in Biology, Psychology, or Chemistry.
(g) two courses from any area of study, including Psychology and Biology.

Non-credit requirement: Colloquia and Seminars in Current Behaviour, Cognitive and Neuroscience Research: bi-weekly presentations of recent research by researchers within the university and from other universities and research institutions. Attendance by key faculty members and all students is mandatory.

## AECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 55-140 and $55-141,59-140$ and 59-141, 46-115 and 46-116, and 65-205 (or 02-250); and at least one pair of both 64-140 and 64-141 or both $60-104$ and either $60-205$ or $60-206$, or both $61-140$ and $61-141$, or both 67-100 and 67 102. (If64-140 is selected, 62-130 or 62-140 should also be taken in the Fall semester.)
Second Year: ten courses, including 55-210, $55-211,46-229$ or 46-230*, 55-213, 46-223, 46-256, 59-230 and 59-261.
Third Year: ten courses, including 55-320*, $55-341,46-353,46-358,46-313$, and 46336.

Fouth Year: ten courses, including 46-322 (or 46-323), 55-485, 46-355, 46-457, and a research Project (55-420, or 46-496 and 46497).
'Students will take one of 46-229 or 46-230 in second year or 55-320 in third year.
Recommended additional Biology courses: $55-204,55-205,55-324,55-325,55-350$, 55-355, 55-440, 55-484.
Recommended additional Science options: 59-291,59-361 (or 59-362), 59-365, 59-466.

## Other Combined Honours Programs

Total courses: forty.
Major requirements-Biological Sciences: lourteen courses, including the "Core" courses of 55-140, 55-141, 55-210, 55-211, and 55-213; plus 55-420 (a 6.00 credit hour course which counts as two courses). In ad-
dition to 55-420, at least four courses must be at the 300 level or above.
Major requirements-Other Subject: as prescribed by that area of study.
Other requirements:
(a) 59-140, 59-141, 59-230, 59-261, 65-205, and one pair of both 60104 and either 60-205 or 60-206, or both 60-140 and 60-141, or both 61-140 and 61-141, or both 64140 and 64-141, or both 67-100 and 67-102;
(b) additional courses from any area of study to a total of forty.
A combined major in Biology and Computer Science is also available.

## Minor in Biological Sciences

A minor in Biological Sciences requires an average of 5.0 or better in at least six Biology courses, including 55-140, 55-141, 55-210, 55-211, and 55-213.

### 4.3.2 COURSE DESCRIPTIONSBIOLOGY

Students must normally have completed the prerequisites indicated, but under special circumstances may be permitted to take a particular course with the consent of the instructor.
Not all courses listed will necessarily be taught each year.
Where enrolment limits are placed on specific courses, students who require these courses as part of their program will be given preference.

## 55-100. Biology of Organisms

Genetics, energetics, and the diversity of life. Properties of living organisms from the level of the cell through tissues, organs and organ systems, to the functioning, integrated organism. Intended for non-majors. (Antirequisite: both 55-102 and 55-103.) (If student does not have credit for OAC Biology, then 55-100 and 55-101 with a combined grade point average of at least 8.0 will serve as prerequisites for $55-140$. A student may receive credit for either both $55-100$ and 55-101, or

### 4.3 Biological Sciences

both 55-140 and 55-141, but not for all four courses.) (Biology Majors note that 55-140 and 55-141 are required courses.) (2 lecture hours a week.)
55-101. Organisms and the Environment Organisms interacting with other organisms and with their physical environment. Ecological impacts of human activity. Intended for non-majors. (Antirequisite: both 55-102 and 55-103.) (If a student does not have credit for OAC Biology, then 55-100 and 55101 with a combined grade point average of at least 8.0 will serve as prerequisites for 55 140.) (A student may receive credit for either both 55-100 and 55-101, or both 55-140 and 55-141, but not for all four courses.) (Biology Majors note that 55-140 and 55-141 are required courses.) (2 lecture hours a week.)

## 55-102. Concepts of Biology I

Introduction to the major concepts of biology with emphasis on the chemical basis of life, the biology of cells, and the physiology of human systems as biological ideas of importance to human problems. A Flexible Learning course intended for non-majors. (Antirequisite: both 55-100 and 55-101.) (If student does not have credit for OAC Biology, then 55-102 and 55-103 with a combined grade point average of at least 8.0 will serve as prerequisites for $55-140$. A student may receive cre dit for either both $55-102$ and 55-103, or both 55-140 and 55-141, but not for all four courses.) (Biology Majors note that 55-140 and 55-141 are required courses.) (2 lecture hours or equivalent a week.)

## 55-103. Concepts of Biology II

Introduction to major concepts of biology with emphasis on human reproduction, coordination of human systems by both hormones and nerves, human genetics, and ecology as biological ideas of importance to human problems. A Flexible Learning Education course intended for non-majors. (Antirequisite: both 55-100 and 55-101.) (If a student does not have credit for OAC Biology, then 55-102 and 55-103 with a combined grade point average of at least 8.0 will serve as prerequisites for 55-140). (A student may receive credit for either both $55-$ 102 and 55-103, or both 55-140 and 55-141,
but not for all four courses.) (Biology Mapis note that 55-140 and 55-141 are required courses.) (2 lecture hours or equivalenta week.)

## 55-140. Biological Diversity

Principles goveming living systems; the oft gins and diversity of life; evolution, reprodua tion, and heredity; the structure and funcion of viruses through plants and animals; basic principles of ecology. (OAC Biology or 55 . 100 and 55-101 are strongly recommended, corequisite: Chemistry 59-140 or equiva lent.) (3 lecture, 3 laboratory hours a week)

## 55-141. Cell Biology

Examination of the principles goveming $w$. ing systems, with emphasis on the molecrlar and cellular basis of life, molecular genetics, energetics, differentiation, and development. (Prerequisite: 55-140; corequisite: Chemistry 59-141 or equivalent.) (3 lecture, 3 laboratory hours a week.)

## 55-201. Applied Ecology

The effects of humans and technology on the environment. Topics include causefl. fect linkages, energy, chemicals in the enironment, preservation of biodiversity. (3 lecture hours a week.)

## 55-202. Human Anatomy

Systemic analysis of the structure of the hur man body, including gross and microscopic morphology. Laboratory sessions focus on gross and microscopic morphology. (3 leo ture, 2 laboratory hours a week.)

## 55-203. General Physiology

Cell and organismic physiology with emphasis on basic life processes in both plants and animals, including nutrition, metabolism, en: ergy transformations, transport mechar nisms, signal transduction, and other general functions. (Antirequisite: 55-213; prerequisite: $55-141$; corequisite: Chemisty 59-261.) (3 lecture, 3 laboratory hours of equivalent a week.) (A Flexible Leaming course restricted to graduates of programs in Medical Technology from a College of Ap: plied Arts and Technology with more tran 100 hours of certified laboratory experienes, or by consent of the instructor.)

### 4.3 Biological Sciences

## 55-204. Human Physiology I

Introduction to human physiology: a syslems approach. Topics include homeostasis and feedback control, enzymes and energy, membrane transport, metabolism, and the nevous, skeletal muscle, and cardiovascular systems. (Prerequisites: 55-100 and 55101, or OAC Biology.) (3 lecture hours a week.)

## 55-205. Human Physiology II

Introduction to human physiology: a systems approach. Topics include respiratory, endocrine, digestive and renal systems, and control of metabolism. (Prèrequisite: 55-204 or consent of instructor.) ( 3 lecture hours a week.)
55-206. Introduction to Microbiology Introduction to the major groups of microorganisms, emphasizing structure, physiology, multiplication, and control. The major groups of pathogenic bacteria are discussed. A Flexible Leaming course. (Antirequisites: 55-237, 55-238; prerequisites: OAC Biology or 55-100 and 55-101 with a combined grade point average of at least 8.0, or 55-140 and 55-141; corequisite: Chemistry 59-140.) (3lecture hours a week.)

## 55-208. Plants and Human Affairs

The biosphere as we know it is ultimately the product of plant activity. This course deals with the interactions between humans and the plant world. It discusses how these interactions originate, and how they relate to the well-being and survival of human life. (Prerequisite: OAC Biology or the equivalent.) (2 becure hours, 1 discussion/seminar hour a week.)

## 55-210. Ecology

Introduction to the fundamental concepts of ecology including factors affecting species distribution, reproductive strategies, populafion growth and regulation, species interactons, and community level organization and energetics. (Prerequisites: 55-140 and 55141.) (3 lecture, 2 laboratory/discussion nours a week.)

## 55-211. Genetics

An introduction to the principles and mechanisms of heredity. This course has three parts: Mendelian genetics, molecular genet-
ics, and population genetics. It covers 1 - and 2 -locus systems, gene interactions, gene mapping, sex determination and sex linkage, cytogenetics, molecular genetics, and an introduction to the study of polygenic inheritance and population genetics. (Antirequisite: 55-212; prerequisite: 55-141.) (3 lecture, 3 laboratory hours a week.)

## 55-212. Genetics

An introduction to the principles and mechanisms of heredity. This course has three parts: Mendelian genetics, molecular genetics, and population genetics. It covers 1 - and 2 -locus systems, gene interactions, gene mapping, sex determination and sex linkage, cytogenetics, molecular genetics and an introduction to the study of polygenic inheritance and population genetics. This is a Flexible Learning course designed primarily for graduates of programs in Medical Technology from a College of Applied Arts and Technology. This course may be counted towards a General Science degree, but not as a "core" course for Biology Majors. (Antirequisite: 55-211; prerequisites: 55-140 and 55-141, or the equivalent.) (3 lecture, 3 laboratory hours or equivalent a week.)

## 55-213. General Physiology

Cell and organismic physiology with emphasis on basic life processes in both plants and animals, including nutrition, metabolism, energy transformations, transport mechanisms, signal transduction, and other general functions. (Prerequisite: 55-141; corequisite: 59-261.) (3 lecture, 3 laboratory hours or equivalent a week.)

## 55-234. Great Lakes Field Biology

The physical, chemical, and biological properties of the Great Lakes system; measures of transport and fate of contaminants in aquatic systems and food webs; changes in species abundance, composition, and distributions. Field work stresses sampling techniques and measurements of temporal and spatial variation. Students are required to complete a project and present a seminar. (Prerequisites: 55-210 and 65-205, or consent of instructor.) (2 weeks, Intersession; 26 hours lecture, 52 hours field/laboratory work, 8 hours seminar.)

## 55-237. Introductory Microblology

Growth, genetics, structure, physiology, and diversity of microbes and viruses. (Antirequisites: 55-206, 55-238; prerequisites: OAC Biology, or both 55-100 and 55-101, or 55140 and 55-141.) ( 3 lecture hours a week.)

## 55-238. Introductory Microbiology and

 TechniquesGrowth, genetics, structure, physiology, and diversity of microbes and viruses. (Antirequisites: 55-206, 55-237; prerequisites: 55-140 and 55-141.) (3 lecture, 3 laboratory hours a week.)

## 55-241. Infectious Diseases

The host-parasite interactions and pathogenicity of human microbial pathogens, with an emphasis on viral pathogens. A Flexible Learning course. (Antirequisite: 55-352; prerequisite: one of 55-206, 55-237, or 55-238; corequisite: 59-141.) (3 lecture hours a

> week.)

## 55-242. Immunology

The formation and structure of antibodies. Antigens and the mechanisms of antigenantibody interactions. (Prerequisites: 55140 and 55-141; corequisite: 59-230.) (2 lecture, 3 laboratory hours or equivalent a week.)

## 55-250. Comparative Vertebrate Zoology

Phylogeny of the chordates; comparative anatomy of key organ systems; emphasis on the anatomy of selected vertebrates in the laboratory. (Prerequisites: 55-140 and 55-141.) (3 lecture, 3 laboratory hours a week.)

## 55-298. Co-op Work Term I

Taken in the Summer term of Second Year. (Graded on a Satisfactory/Unsatisfactory basis.) (Restricted to Environmental Biology Co-op students.)

## 55-299. Co-op Work Term II

Taken in the Fall term of Second Year. (Graded on a Satisfactory/Unsatisfactory basis.) (Restricted to Environmental Biology Co-op students.)

55-320. Experimental Principles and Design in Biology
Introduction to the logic and principles usee to develop sound and efficient studies in the biological sciences: generating, testing, and discriminating among hypotheses; dealing with unwanted sources of variation; as sumptions and appropriate choice of statso tical analysis. Instruction in the use of selected network and personal computer software for data analysis and presentatoon (Prerequisites: 55-210, 55-211, 55-213, and $65-205$, or consent of instructor.) (3 lecture, 2 laboratory/tutorial hours a week.)

## 55-324. Population Ecology

Topics of current interest in population theory including population growth and reguetion, plant-herbivore interactions, optimd strategies of foraging, reproductive alloca tion, and the evolutionary responses of populations. (Prerequisites: 55-210 and 55 211.) (3 lecture hours a week.)

## 55-325. Community Ecology

Topics of current interest in community the ory including predation and competition, species diversity and resource utilization, community energetics, and the relationship between complexity and stability of commv nities. (Prerequisite: 55-210.) (3 lecture hours a week.)

## 55-333. General Mycology

Biology of the fungi with emphasis on theit interactions with animals and plants. Ppoo requisite: 55-206 or 55-237 or 55-238 ou consent of instructor.) (2 lecture, 3 labore tory hours a week.)

## 55-341. Evolution

Topics include the interaction of gene mivar tion, selection, and population charao teristics in the process of evolution. mechanisms of speciation, and current problems in evolution. (Prerequisite: 55 211.) (3 lecture hours a week.)
$55-350$. Molecular Cell Biology
An integration of recent findings in moleciler and cell biology with those in biochemisty? and genetics. The main focus will be of regulation of gene transcription, intracellidy signalling, transport processes, and cell or
de events. (Prerequisites: 55-211 and 55213.) (3 lecture hours a week.)

## 55-351. Medical Microbiology

Viral and bacterial pathogenesis, including the processes and genetic control of human diseases. (Antirequisites: 55-241, 55-352; prerequisite: $55-206,55-237$, or 55-238.) (3 lecture hours a week.)

## 55-352 Medical Microbiology and Techniques

Viral and bacterial pathogenesis, including the processes and genetic control of human diseases. (Antirequisites: 55-241, 55-351; prerequisite: 55-238.) (3 lecture, 3 laboralory hours a week.)

## 55-355. Principles of Animal Development

Cellular, molecular, and biochemical mechanisms of gametogenesis, fertilization, cleavage, and organogenesis in a variety of animal systems. A major paper is required. (Prerequisites: 55-210, 55-211, and 55213.) (3 lecture hours a week.)

## 55-357. Animal Cells and Tissues

The structure and organization of animal systems at the tissue, cellular, and subcellular levels. Contemporary techniques, including electron microscopy, immunocytochemistry, and in situ hybridization are discussed. (Prerequisites: 55-211 and 55-213.) (3 lecture, 3 laboratory hours a week.)

## 55-359. Invertebrate Biology

Survey of major classes of the invertebrates from an evolutionary, phylogenic, and ecological perspective. Emphasis on the morphological, physiological, and behavioural adaptations that permit animals to exploit the full range of earth's habitats, including the living bodies of other organisms (parasitism). (Prerequisites: $55-210,55-211$, and 55-213.) (3 lecture, 3 laboratory hours a week.)

## 55-366. Microbial Ecology and Physiology

Diversity of bacteria in natural habitats. Population interactions, community structure, and species diversity. Interactions between microorganisms and higher
eukaryotes; biogeochemistry and biodegradation. (Prerequisites: 55-206 or 55-237 or $55-238$; plus, $55-210,55-211$, and 55-213.) (2 lecture, 3 laboratory hours a week.)

## 55-420. Undergraduate Research in Biology

Completion of an undergraduate research project, including an oral presentation at'an annual colloquium and submission of written final report. (Registration and selection of supervisor will be completed with consent of the Department Head.) ( 10 laboratory hours a week; offered over two terms.) (A 6.00 credit hour research project which counts as two courses.)

## 55-423. Undergraduate Research in Biology

Completion of an undergraduate research project, including an oral presentation at an annual colloquium and submissien of written final report. (Registration and selection of supervisor will be completed with consent of the Department Head.) (Restricted to students who have completed 55-420.) (10 laboratory hours a week; offered over two terms.) (A 6.00 credit hour research project which counts as two courses.)

## 55-430. Ecotoxicology

The transport, fate and effects of toxic chemicals in aquatic ecosystems; food web modelling in the context of contaminant movement; risk assessment. Laboratory work will include toxicokinetics, toxicity testing, and measurements of contaminant stress. (Prerequisites: 55-210 and 55-213.) ( 3 lecture, 3 laboratory hours a week.)

## 55-437. Conservation Biology and Biogeography

Principles of conservation biology emphasizing population and biogeographic attributes, including genetics, habitat fragmentation, and island processes, which characterize endangered species and habitats. Case studies of management of threatened species and habitats will be addressed. (Prerequisites: 55-210 and 55211, or consent of instructor.) (3 lecture hours a week.)

## 55-440. Biology of Fishes

The fishes are the most diverse, the oldest, and the most abundant group of vertebrates on earth. This course surveys their evolution, their phylogenetic relationships, and their morphological, physiological, behavioural, and ecological adaptations to life in virtually every aquatic environment on earth. The laboratory includes units on gross anatomy of a typical actinopterygian fish, identification of local fauna, study of age and growth, and other selected topics. (Prerequisites: 55-210, 55-211, 55-213.) (2 lecture, 3 laboratory hours a week, 1 field trip.)

## 55-444. Aquatic Ecology: Physical Processes and Biotic Responses

Physical properties and biotic responses in rivers and lakes, including morphometry, energy processing, behavioural adaptations of organisms, and interactions among organisms. (Prerequisite: 55-210.) (3 lecture, 3 laboratory hours a week, 1 week-end field trip.)

## 55-445. Aquatic Ecology: Community and Ecosystem Processes

Selected aspects of the ecology of large water masses-large lakes, estuaries, and oceans. Emphasis on physical properties and chemical dynamics of aquatic systems, and on life history requirements in such systems. (Prerequisite: 55-210 or 55-234.) (3 lecture hours a week.)
55-453. Biology of Cell Transformation
Molecular and cellular mechanisms of cell transformation and tumor development with emphasis on the role of oncogenes and environmental factors in cell transformation, and on the cellular and molecular biology of malignantly transformed (cancerous) cells, experimental analysis and applications. A major paper and/or seminar is required. (Prerequisites: 55-211, 55-213,59-230, 59261, and consent of instructor.) (3 lecture hours, 1 tutoria/laboratory hour a week.)

## 55-454. Molecular Biology of Growth and Development I

Analysis at the molecular level of the growth and development of prokaryotes, phages, lower eukaryotes, and their plasmids. (Prerequisites: 55-211, 55-213, 59-360 and 59-

361, or consent of course co-ordinator) (3 lecture hours a week.)

## 55-455. Molecular Biology of Growth and Development II

Analysis at the molecular level of the activa: tion and control of genes and proteins during oogenesis and early development in bwer and higher eukaryotes. (Prerequisite: 55 . 454 or consent of course co-ordinator.) (3 lecture hours a week.)

## 55-460. Molecular Biotechnology

 Introduction to the techniques and applications of recombinant DNA technology and genetic engineering. Topics include the gen eration of transgenic organisms (microbes plants, and animals) and their impact onag. riculture and medicine. The social ramificar: tions of these technologies will bs discussed. (Prerequisites: 55-211 and 55 213.) (3 lecture hours a week.)
## 55-464. Plant Molecular Biology and Physiology

Plant development and its coordination by means of hormones and other molecular signals. Molecular approaches applied to the analysis and modification of plant deveropment will be discussed. (Prerequisite: 55 213.) (2 lecture hours, 1 seminar houra week.)

## 55-468. Plant Ecology

Evolutionary and community aspects of plant interactions with other organisms and the physical environment. The course deals with plant demography at different levels int dividual, population, community, and eowsystem. (Prerequisite: 55-210.) (2 lecture, 3 laboratory hours or equivalent a week.)

## 55-471. Virology

Bacterial, animal, and plant viruses, with emphasis on structure, nucleic acids, and replication. Interactions between viruses and host cells. Theoretical and practicalas pects. (Prerequisites: 55-238 and 59-360). (2 lecture, 3 laboratory hours or equivalent a week.)

## 55-477. Immunochemistry

Antigens; purification and characterization of immunoglobulins and monoclonal antr bodies. Immunoassays using these antibot ies. (Prerequisite: 55-242; corequisite.

59-360.) (2 lecture, 3 laboratory hours a week.)
55-480 to 55-483. Special Topics in Biology
Selected topics of current interest which may vary from year to year.
The University of Windsor is a member of the Ontario Summer Field Courses Program. Students may select and receive credit for one or more of over thirty field courses under the "Special Topics" designation. Courses are normally advertised in January. Because enrolment is limited, students should apply as eariy as possible. For further information, conlact the Department.

## 55-484. Mammalian Physiology

Basic principles and mechanisms of general physiological controls, blood, body fluids, cardiovascular system, kidney function, and gas transport and exchange. (Prerequisites: 55-210, 55-211, 55-213.) (3 lecture, 3 laboratory hours or equivalent a week.)
55-485. Nerves, Muscles, and Glands
A systemic view of neural, muscular, and neuroendocrine regulation. Physiological control mechanisms at the levels of molecules through cells, neural circuits and behaviour are discussed. (Prerequisite: 55-213.) (3 lecture, 3 laboratory hours a week.)

## 55-498. Co-op Work Term III

Taken in the Winter term of Fourth Year. (Graded on a Satisfactory/Unsatisfactory basis.) (Restricted to only Environmental Biology Co-op students.)

## 55-499. Co-op Work Term IV

Taken in the Summer term of Fourth Year. (Graded on a Satisfactory/Unsatisfactory basis.) (Restricted to only Environmental Bi ology Co-op students.)

### 4.4 Chemistry and Biochemistry

## (Ext. 3521)

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Thibert, Roger J.; B.A. (Western Ontario), M.S. (Detroit), Ph.D. (Wayne State), F.C.I.C.-1953.

McGarvey, Bruce R.; B.A. (Carleton College), M.A., Ph.D. (Illinois), F.C.I.C.-1972.
Tuck, Dennis G.; B.Sc., Ph.D., D.Sc. (Durham), F.C.I.C., F.R.S.C. (U.K.)-1972.
Drake, John E.; B.Sc., Ph.D., D.Sc. (Southampton), F.C.I.C.-1969.
McIntosh, John M.; B.Sc. (Queen's), Ph.D. (M.I.T.), F.C.I.C.-1968.

## Professors

Taylor, Keith E.; B.Sc., Ph.D. (Toronto)1976. (Director, School of Physical Sciences)
Mutus, Bulent; B.Sc., M.Sc. (Waterloo), Ph.D. (Manitoba)-1982.
Stephan, Douglas W.; B.Sc. (McMaster), Ph.D. (Western Ontario)F.C.I.C.-1982.
Aroca, Ricardo; B.Sc. (Chile), Ph.D. (Moscow State), D.Sc. (Leningrad)-1985.
Loeb, Stephen J.; B.Sc., Ph.D. (Western Ontario), F.C.I.C.-1990.

## Associate Professors

Rumfeldt, Robert C.; B.Sc. (Loyola, Montreal), Ph.D. (Alberta)-1965. (Head of the Department)
Hencher, J. Lawrence; B.A., Ph.D. (McMas-ter)-1967.
Lee, Lana; A.B. (Mount Holyoke), Ph.D. (Al-berta)-1986.
Green, James R.; B.Sc. (Windsor), Ph.D. (Waterloo)-1989.
Antonelli, David M.; B.Sc., Ph.D. (Alberta)1997.

## Assistant Professors

Dutton, Philip J.; B.Sc., Ph.D. (Victoria)1991.

### 4.4 Chemistry and Biochemistry

Letcher, Robert J.; B.Sc. (Toronto), M.Sc., Ph.D. (Carleton)-2000.
Schurko, Robert W.; B.Sc., M.Sc. (Manitoba), Ph.D. (Dalhosie)-2000.
Ananvoranich, Sirinart; B.Sc., M.Sc. (Chulalongkom), Ph.D. (Concordia)-2000.
Pandey, Siyaram; B.Sc., M.Sc. (Banaras), Ph.D. (Jawaharial Nehru)-2000.

## Adjunct Professors

Draisey, Thomas F.; M.B., Ch.B. (Bristol), F.R.C.Path.; Department of Pathology, Hotel Dieu-Grace Hospital and Windsor Westem Hospital Centre-1969.
Yee, George E.; M.D. (Manitoba), F.R.C.Path.; Medical Director, Medical Laboratories of Windsor-1986.
Adeli, Khosrow; B.Sc. (Tehran), M.Sc., Ph.D. (Ottawa), Dipl. Clin. Chem. (Toronto)1988.

Cheung, Raphael M.C.; M.D. (Toronto), F.R.C.P.(C); Medical Director, Lipid Clinic, Windsor Western Hospital-1988.
Nazri, Gholam-Abbas; B.S., M.S. (Tehran), Ph.D. (Case Western Reserve), Scientist, General Motors Research, Warren-1991.
Szabo, Arthur G.; B.Sc. (Queen's), M.A., Ph.D. (Toronto), F.C.I.C.-1993.
Artiss, Joseph D.; B.Sc., Ph.D. (Windsor); Associate Professor of Pathology, Wayne State University-1993.
Keys, Stephen.; B.Sc. (Toronto), Ph.D. (British Columbia), Fellowship in Clinical Chemistry (Windsor), FCACB-1997.
Hutnik, Cindy; B.Sc. (Windsor), Ph.D., M.D. (Ottawa), F.R.C.S.C.-1999.
Duff, James M.; B.Sc., Ph.D. (Toronto), Xerox Research Centre of Canada-2000.

### 4.4.1 PROGRAMS OF STUDY

## Preparation for Graduate and Professional Schools

Courses are available to permit the student to become fully prepared for entry into medical, dental, and pharmacy schools, as well as graduate programs in the physical and life sciences. Students should determine as
early as possible the specific requirements for graduate or professional schools and programs that they may wish to apply ford. ter completing all or part of a Chemistry a Biochemistry program. (See also 4.1.16 and 4.3.1.) Academic advisors are available.

Since many graduate schools have larguage requirements, students who may subsequently choose to enter graduale school are strongly advised to considerase lection of courses which includes the promit nent scientific languages, French, Geman and Russian.

## PROGRAM REQUIREMENTS

1) The prerequisite for $59-400$ and $59-410$ is a major G.P.A. of 8.0.
2) Unless otherwise stated, students in Chemistry and Biochemistry are expectedib take the course with laboratory where two offerings differing only in the presence or absence of a laboratory component are listed

Standing Required: For continuation in any Chemistry or Biochemistry program at the second level, a student must obtain a mint mum grade of C- in Chemistry 59-140 and 59-141, or the equivalent. Students in Biochemistry also must obtain a minimum grade of C- in Biology 55-140 and 55-141. The three Honours programs offered by Chemistry and Biochemistry are accredited by the Chemical Institute of Canada.

## Honours Chemistry

Total courses: forty.
Major requirements: twenty courses, indvoing 59-140, 59-141, 59-230, 59-235, 59 240, 59-241, 59-250, 59-251, 59-261, 59-320, 59-321, and nine additional courses at the 300 or 400 level.

## Other requirements:

(a) 62-120, 62-140, 62-141, 64-140, 64-141, and 64-220.
(b) four courses from Arts, Languages or Social Sciences (see 2.4.14);
(c) ten courses from any area of study. (62-215 and 62-218 arf strongly recommended.)

### 4.4 Chemistry and Biochemistry

## AECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 59-140, $59-141,62-120,62-140,62-141,64-140$, 64-141. (Recommended: 60-104 or 64151.)

Second Year. ten courses, including 59-230, $59-235,59-240,59-241,59-250,59-251$, 59:261, and 64-220.
Third and Fourth Years: twenty courses, induding 59-320 and 59-321; and nine addifional Chemistry and Biochemistry courses. (Recommended: 62-215 and 62-216.) Honours Chemistry and Physics Total courses: forty.
Major requirements-Chemistry and Biochemistry: sixteen courses, including 59140, 59-141, 59-230, 59-235, 59-240, $59-241,59-250,59-251,59-320,59-321$, 59-330 (or 59-331), and 59-342; plus four other courses.
Major requirements-Physics: tw elve courses, including $64-140,64-141,64-151$, 64-220, 64-222, 64-250, 64-310, 64-315, $64-323$ (or 64-320), and 64-331; plus one other courses at the 300 or 400 level.
Other requirements:
(a) $62-120,62-140,62-141,62-215$, 62-216, 62-318, 85-214, 88-226;
(b) two courses from Arts, Languages, or Social Sciences (see 2.4.14);
(c) two courses from any area of study.

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 59-140, 59-141, 62-120, 62-140, 62-141, 64-140, 64-141, and 64-151.
Second Year ten courses: 59-230, 59-235, 59-240, 59-241, 62-215, 62-216, 62-318, 64-220, 64-222, and 85-214.
Third Year: ten courses, including 59-250, 59-251, 59-342, 64-250, 64-310, 64-315, 64-323 (or 64-320), 64-331, and 88-226.
Fouth Year: ten courses, including 59-320, 59.321, and 59-330 (or 59-331); plus four additional Chemistry courses; and two addi-
tional Physics courses at the 300 or 400 level.

## Honours Biochemistry

Total courses: forty.
Major requirements: twenty courses, including 59-140, 59-141, 59-230, 59-235, 59240, 59-241, 59-250, 59-251, 59-261, 59-320, 59-321, 59-360, 59-361, 59-365, and six additional courses at the 300 or 400 level.
Other requirements:
(a) 55-140, 55-141, 55-213, 55-238, 62-140, 62-141, 64-140, 64-141 and 60-104 (or 64-151).
(b) four courses from Arts, Languages or Social Sciences (see 2.4.14);
(c) seven courses from any area of study.

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 55-140, $55-141,59-140,59-141,62-140,62-141$, 64-140, 64-141, and 60-104 (or 64-151).
Second Year. ten courses, including 55-213, 55-238, 59-230, 59-235, 59-240, 59-241, 59-250, 59-251, and 59-261.
Third and Fourth Years: twenty courses, including 59-320, 59-321, 59-360, 59-361, 59-365,59-464, and 59-468; plus four additional courses from Chemistry and Biochemistry at the 300 or 400 level.

## Honours Chemistry with Thesis

In order to earn an B.Sc. in Honours Chemistry with Thesis, students must also include the courses 59-400 (seminar) and 59-410 (research) within the "Major requirements" as outlined for the Honours Chemistry program described above. It should be noted that only students who have maintained a major average of 8.0 and a cumulative average of 5.0 will be permitted to enrol in 59400 and 59-410.

## Honours Chemistry and Physics with Thesis

In order to earn an B.Sc. in Chemistry and Physics with thesis, students must include the courses 59-400 (seminar) and either 59410 (research) or both 64-412 and 64-413

### 4.4 Chemistry and Biochemistry

(research) within the "Major requirements" as outlined for the Honours Chemistry and Physics program described above. It should be noted that only students who have maintained a major average of 8.0 and a cumulative average of 5.0 will be permitted to enrol in 59-400,59-410 and 64-412.

## Honours Biochemistry with Thesis

In order to earn an B.Sc. in Biochemistry with Thesis, students must also include the courses 59-400 (seminar) and 59-410 (research) within the "Major requirements" as outlined for the Biochemistry Major program described above. It should be noted that only students who have maintained a major average of 8.0 and a cumulative average of 5.0 will be permitted to enrol in 59-400 and 59410.

## Combined Honours Programs

Programs combining Chemistry with another major will consist of the following:
Total courses: forty.
Major requirements-Chemistry and Biochemistry: fifteen courses, consisting of 59140, 59-141, 59-230, 59-235, 59-240, 59-241, 59-250, 59-251, 59-261, 59-320, 59-321, 59-330 (or 59-331), and 59-340; plus two additional courses at the 300 or 400 level.
Major requirements-Other Subject: as prescribed by that area of study.
Other requirements:
(a) 62-120, 62-140, 62-141, 64-140, 64-141 and 64-220;
(b) additional courses, if necessary, from any area of study to a total of forty courses.

Programs combining Biochemistry with another major will consist of the following:
Total courses: forty.
Major requirements-Chemistry and Biochemistry: fifteen courses, consisting of 59 140, 59-141, 59-230, 59-235, 59-240, 59-241, 59-250, 59-251, 59-261, 59-320, 59-321, 59-360, 59-361, 59-365, and one additional course at the 300 or 400 level.

Major requirements-Other Subject as prescribed by that area of study.
Other requirements:
(a) 55-140, 55-141, 55-213, 62-140, 62-141, 64-140, and 64-141;
(b) additional courses, if necessary, from any area of study to a total of forty courses.

## Chemistry and Biochemistry Minor

The minors in Chemistry and in Biochemis try consist of six courses, including 59-140 and $59-141$, plus three courses at the 200 level or above, and at least one course at he 300 level or above. If the minor is in Biochemistry, at least three of $59-261,59-360$ or 59-362, 59-361 or 59-363, 59-365, 59-444 and 59-468 must be chosen. Selected courses leading to a minor in either areamay not consist of antirequisites to courses in the student's degree program. Students must also remember to select only courses which may be otherwise counted for credit towards their degree programs.

### 4.4.2 COURSE DESCRIPTIONS

All courses listed will not necessarily be offered each year.
The prerequisite of all 200 -level courses, unless otherwise indicated, will be both $59-140$ and 59-141.
The prerequisite for all 400 -level courses will be the consent of the instructor, except as noted.

## 59-110. Topics In General Chemistry

An introduction to selected topics in modem chemistry for science and engineering properties of matter and solutions, stoichiometry, equilibrium theory and applit cations, oxidation-reduction reactions, rak processes, atomic and molecular structure. (Prerequisite: OAC Chemistry.) (3 lecture, 3 laboratory hours a week.)

## 59-140. General Chemistry I

Introductory concepts in chemistry, induding reactions of atoms, ions, and molecules, solution stoichiometry, thermochemistry, electronic structure of atoms, basic chemical bonding and molecular geometry, periodic

### 4.4 Chemistry and Biochemistry

properties of the elements, and the theory of gases. (Prerequisite: OAC Chemistry or consent of the instructor.) (3 lecture, 3 laboaboyjitutorial hours a week.)

### 59.141. General Chemistry II

Acontinuation of 59-140 covering topics such as chemical kinetics, general equilibfum theory, acid-base theory, chemical thermodynamics, and introduction to organic chemistry. (Prerequisite: 59-140.) (3 lecture, 3 laboratory/tutorial hours a week.)
59-191. Organic and Biological Chemistry for Health Sciences
Acourse of particular interest to students of nursing and other health science areas. The subject matter includes a survey of organic functional groups, the organic chemistry of biomolecules, and a survey of the major metabolic pathways. (Prerequisite: OAC Chemistry.) (Antirequisites: 59-141, 59-230, and $59-232$.) (2 lecture hours, 1 tutorial hour aweek.)

## 59-201. Chemistry in the Marketplace

The basic notions of Chemistry will be introduced and discussed in a qualitative manner with a view to understanding chemistry and malerials encountered in everyday life. The course will provide an appreciation for the $u$ biquitous nature and importance of chemicals and chemical processes. Discussion willindude a variety of topics such as chemistry in the home, plastics, drugs, cosmetics, biotechnology, chemistry and computer technology, nuclear power and pollution. The course is intended for students with no tomal background in chemistry. (Not open bfirst-year students; may be taken by B.Sc. students for credit, but it does not count as Chemistry and Biochemistry course or other science option towards the fulfilment of the requirements for the B.Sc. degree.) (2 lecWre hours a week).
59-230. Introductory Organic Chemistry
htroduction to organic chemistry, with emphasis on structure, stereochemistry, and reactions of aliphatic and alicyclic compunds and their functionalized derivatives. Preerequisites: 59-140 and 59-141.) (Antirequisite: 59-232.) (3 lecture, 3 laboratory hours a week.)

## 59-232. Introductory Organic Chemistry

The same as 59-230 but without the laboratory. (Prerequisites: 59-140 and 59-141, or 59-110) (Antirequisite: 59-230.) (3 lecture hours a week.) (Not available for credit to students majoring in Chemistry, Biochemistry, or Biological Sciences.)

## 59-235. Introductory Organic Chemistry II

A continuation of 59-230. Topics include the chemistry of nitrogen-containing compounds, aromatic chemistry and an introduction to spectroscopic methods. (Prerequisite: 59-230.) (2 lecture hours a week.)

## 59-240. Introductory Physical Chemistry I

The laws of thermodynamics applied to changes of state and chemical reactions. Spontaneous processes. (Prerequisites: 59140, 62-140, and 62-141.) (3 lecture, 1.5 laboratory hours a week.)

## 59-241. Introductory Physical Chemistry II

Physical and chemical equilibrium, electrochemistry, and introductory chemical kinetics. (Prerequisite: 59-240.) (3 lecture, 3 laboratory hours a week.)

## 59-250. Introductory Inorganic Chemistry I

Introduction to chemical bonding including molecular orbital and valence bond models and their application to the stereochemistry and properties of hydrides and halides. Photoelectron, NMR, and vibrational spectroscopy are introduced as complementary tools in the examination of these molecular species. ( 3 lecture, 1.5 laboratory hours a week.)

## 59-251. Introductory Inorganic Chemistry II

The coordination chemistry of transition metals will be discussed, with particular reference to the means of physical and spectroscopic characterization. Relevance of such compounds to bio-inorganic systems will also be discussed. (Prerequisite: 59250.) (3 lecture, 3 laboratory hours a week.)

### 4.4 Chemistry and Biochemistry

## 59-253. Introductory Inorganic Chemistry II

The same as 59-251 but without the laboratory. (Prerequisite: 59-250.) (3 lecture hours a week.)

## 59-261. Organic Chemistry of Biomolecules

An extension of the principles covered in 59230 to the structure and properties of organic molecules of biological significance. (Prerequisite: 59-230.) (3 lecture, 3 laboratory hours a week.)

## 59-263. Organic Chemistry of Biomolecules

The same as 59-261 but without the laboratory. (Prerequisites: 59-230 or 59-232 or consent of instructor.) ( 3 lecture hours a week.) (Not available for credit to students majoring in Chemistry, Biochemistry, or Biological Sciences.)

## 59-291. Pharmacology for Health Sciences

A course of particular interest to students of nursing and other health science areas. The principles of pharmacokinetics and pharmacodynamics will be covered utilizing a systems approach to pharmacologic therapies in health care. (Prerequisites: 55-204, 55205, and one of 59-191, 59-261 and 59263.) (2 lecture hours, 1 tutorial hour a week.) (May be taken by B.Sc. students for credit, but does not count as a Biochemistry course towards the fulfillment of the requirements for the B.Sc. degree.)

## 59-320. Analytical Chemistry

Solution chemistry, precipitation, and complexation titrations. Applications of electrochemical techniques to analytical chemistry, including potentiometric and amperometric titrations. (Prerequisite: 59-141 or consent of instructor.) ( 3 lecture, 3 laboratory hours a week or equivalent.)

## 59-321. Principles of Instrumental Analysis

Electronic and digital circuits. Microprocessor controlled instrumentation and microcomputer interfacing. Data acquisition and data processing in electrochemical and spectroscopic techniques. (Prerequisite: 59-
320.) (2 lecture hours, 1 tutorial hour, 3 laboratory hours a week.)

## 59-330. Intermediate Organic Chemistry I

Structure elucidation and the use of spectroscopic techniques in organic chemistry. The laboratory portion focuses on synthetic chemistry, with application of spectroscopic methods. (Prerequisite: 59-235 or consent of instructor.) (3 lecture, 3 laboratory hours a week.)

## 59-331. Intermediate Organic Chemistry II

The methods of organic synthesis and the reaction mechanisms involved. (Prerequisite: 59-235 or consent of instructor. (3 lecture, 3 laboratory hours a week.)

## 59-332. Intermediate Organic Chemistry I

The same as 59-330 but without the laboratory. (Prerequisite: 59-235 or consent of instructor.) (3 lecture hours a week.)

## 59-333. Intermediate Organic Chemistry II

The same as 59-331 but without the laboratory. (Prerequisite: 59-235 or consent of instructor.) (3 lecture hours a week.)

## 59-340. Intermediate Physical Chemistry I

Collisions, transport properties, rates of chemical reactions, and reaction rate theories. (Prerequisite: 59-241.) (2 lecture, 3 laboratory hours a week.)

## 59-341. Quantum Chemistry and Spectroscopy

Introduction to quantum chemistry, rotational and vibrational spectroscopy of die. tomic and polyatomic molecules, visible and ultraviolet and Raman spectroscopy. (Pierequisite: 59-340.) (3 le cture, 3 laboratory hours a week.)

## 59-342. Intermediate Physical Chemistry I

Same as $59-340$ but without laboratory (Prerequisite: 59-241 and consent of instructor.) (2 lecture hours a week.)

### 4.4 Chemistry and Biochemistry

## 59-343. Quantum Chemistry and Spectroscopy

The same as 59-341 but without the laboraloy. (Prerequisite: 59-340 or 59-342.) (3 lecture hours a week.)

## 59-350. Intermediate Inorganic Chemistry

An introduction to main group chemistry. This will start as a continuation of 59-250 and deal with a systematic examination of the structure and reactivity of simple and complex oxides and halides of the main group elements. Additional topics such as main group chains, rings, and cages, nonaqueous solvents and main group organometallic compounds will also be discussed. (Prerequisite: 59-250.) (3 lecture, 3 laboratory hours a week.)

## 59-351. Organometallic/Materials Chemistry

Modern topics in materials science and solid state chemistry are discussed with an emphasis on properties, applications, and methods of characterization. The areas covered will include biometric materials, nanoscale engineering, liquid crystals, semiconductors, superconductors, organic melals, ferromagnetism and the ferroelectric effect, non-linear optical materials, thermochromic solids, scanning tunnelling microscopy, and atomic force microscopy. Emphasis on applications to biomaterials engineering. (Prerequisite: 59-251.) (3 lecture hours a week.)

## 59-352. Intermediate Inorganic Chemistry

The same as 59-350 but without the laboraloy. (Prerequisite: 59-250.) (3 lecture hours a week.)

## 59-360. Metabolism I

Catabolism and the generation of phosphate bond energy. Laboratory exercises are associated with the analytical and preparative procedures of biochemistry. (Prereqwisite: $59-261$.) ( 3 lectures, 3 laboratory hours a week.)

### 59.361. Metabolism II

The utilization of phosphate bond energy will beilustrated by carbohydrate, fatty acid and lipid biosynthesis, hormonal (G-proteins)
and metabolite regulation, biological membranes (structure and transport mechanisms) and contractile processes (muscle biochemistry). (Prerequisite: 59-360.) (2 lectures, 3 laboratory hours a week.)

## 59-362. Metabolism I

The same as 59-360 but without the laboratory. (Prerequisite: 59-261 or 59-263.) (3 lecture hours a week.)

## 59-363. Metabolism II

The same as 59-361 but without the laboratory. (Prerequisite: 59-360 or 59-362.) (2 lecture hours a week.)

## 59-365. Protein and Nucleic Acid Chemistry

The covalent and three dimensional structures of these macromolecules will be described in conjunction with study of the chemical and physical methods used in their purification and characterization. (Prerequisite: 59-261.) (2 lecture hours a week.)

## 59-400. Seminar

Discussion of selected topics from the current literature. (1 lecture hour a week over two terms; 3.00 credit hours; under special circumstances may be completed in one term.) (Normally open to students in only Chemistry Honours, Chemistry and Physics Honours, or Biochemistry Honours.)

## 59-410. Research

Original laboratory research under the direction of a faculty member. ( 1 lecture, 12 laboratory hours a week) (A 6.00 credit hour course given over two terms.) (See above, "Program Requirements".)

## 59-421. Advanced Analytical Chemistry

 Special topics in analytical chemistry. (2 lecture hours a week.)
## 59-431. Special Topics in Organic Chemistry

Topics may include polymer chemistry, natural product chemistry, advanced synthetic methodology, or design and execution of organic syntheses. (Prerequisite: 59-331 or consent of instructor.) (2 lecture hours a week.)
59-435. Advanced Organic Chemistry
Physical organic chemistry. Includes molecular orbital theory, stereochemistry, ther-

### 4.4 Chemistry and Biochemistry

modynamics, and reaction mechanisms. (Prerequisite: 59-331 or consent of instructor.) (2 lecture hours a week.)

59-440. Kinetics and Photochemistry Rates of reaction, theory and mechanisms, solution kinetics and photochemical kinetics. (2 lecture hours a week.)

## 59-441. Statistical Thermodynamics

Development of statistical thermodynamics and its application to theories of gases, condensed states and chemical equilibria. (2 lecture hours a week.)

## 59-445. Advanced Physical Chemistry

Special topics in physical chemistry. (2 lecture hours a week.)

## 59-450. Group Theory in Chemistry

Various applications of group theory to the study of organic and inorganic systems. (Prerequisite: 59-341, or 59-343, or consent of instructor.) (2 lecture hours a week.)

## 59-451. Special Topics in Inorganic Chemistry

Advanced topics in inorganic chemistry and organometallic chemistry may include analytical and spectroscopic methods of use to the inorganic chemist, advanced topics in main group chemistry, coordination chemistry, organometallic chemistry, or the chemistry of the lanthanides and actinides. (Prerequisite: 59-351.) (2 lecture hours a week.)

## 59-464. Enzymology

Mechanisms of enzyme action will be covered in terms of kinetics, functional groups responsible for catalysis and specificity and the design of active-site directed irreversible inhibitors. (2 lecture hours a week.)

## 59-466. Special Topics in Biochemistry

 (2 lecture hours a week.)59-468. DNA Science and Diagnostics
An advanced lecture and laboratory course dealing with DNA science and the application of DNA technology in the understanding and diagnosis of human disease. The lectures cover the biochemistry and expression of DNA and RNA at the molecular level, the theory and practice of recombinant DNA technology, and the application of DNA probes in diagnosis of human disease. The
laboratory component involves construction and cloning of a recombinant DNA molecule (Prerequisite: 59-365.)
59-470. Advanced Quantum Chemistry Perturbation and variation theories. Theo ries of many electron atoms and genera theories of chemical bonds in diatomic and polyatomic molecules. (Prerequisite: 59-341 or 59-343.) (2 lecture hours a week.)
59-476. Special Topics in Chemistry (2 lecture hours a week.)

### 4.5 Computer Science

(Ext. 2990)
For further information, see our World Wide Web page:
h.tp//www.cs.uwindsor.ca/units/cs/welco me.html
OFFICERS OF INSTRUCTION

## Professors

Kent, Robert D., B.Sc. (Hons.) (U.B.C.), M.SC., Ph.D. (Windsor)-1982.

Bandyopadhyay, Subir; B.Sc., B. Tech., M. Tech. (Calcutta), M. Math. (Waterloo), Ph.D. (Calcutta)-1984.
Frost, Richard A.; B.Sc. (Hons.) (London), M.Sc. (Aberdeen), Ph.D. (Strathclyde)1987. (Director of the School)

## Associate Professors

Tsin, Yung H.; B.Sc. (Nanyang), M.Sc. (Calgary), Ph.D. (Alberta)-1985.
Morrissey, Joan; B.Sc.(Hons.), Ph.D. (Dub-lin)-1989.
Li, Liwu; M.Sc. (Peking), Ph.D. (Alberta)1991.

Jaekel, Arunita; B.Engg. (Calcutta), M.A.Sc., Ph.D. (Windsor)-1995.

Ezeile, Christie I.; B.Sc. (Hons.) (Ife), M.Sc. (SFU), Ph.D. (Manitoba)-1996.
Boulama, Boubakeur; Engg. (Constantine), M.Sc. (France), Ph.D. (Grenoble)-1999.

Mukhopadhyay, Asish; B.Sc., M.Sc. (Calcutta), Ph.D. (Bangalore)-1999.
Aggarwal, Akshai; B.Sc. (Banjab), M.E., Ph.D. (Baroda)-2000.
Kabanza, Froduald; B.Sc., Ph.D. (Liege)2000.

Sodan, Angela C.; B.Sc., M.Sc., Ph.D. (Ber-ini)-2000.
Yuan, Xiaobu; B.Sc. (China), M.Sc. (Sinica), Ph.D. (Alberta)-2000.

## Assistant Professors

Toews, Henry; B.Sc., M.Sc., Ph.D. (Wind-sor)-1981.
Chen, Xiao Jun; B.A. (Beijing), Ph.D. (Pisa)-1997.

Tjandra, Indra Adiono; Dipl. Inform. (Munich), Dr. rer. nat. (Karlsruhe)-1997.
Ahmad, Imran; B.Sc., M.Sc. (Karachi), M.Sc. (Central Michigan), Ph.D. (Wayne State)-1998.
Saba, Walid; B.Sc., M.Sc. (Windsor), Ph.D. (Carleton)-1999.
El-Marakby, Randa; B.Sc. (American University, Cairo), M.Sc. (North Texas), Ph.D. (Lancaster)-2000.
Ngom, Alioune; B.Sc. (Quebec), M.Sc., Ph.D. (Ottawa)-2000.
Tawfik, Ahmed; B.Sc. (Cairo), M.Sc. (Nebraska), Ph.D. (Saskatchewan)-2000.

## Adjunct Assistant Professor

Patil, Linganagouda; B.E. (Kamatak), D.I.C. (London), P.Eng.-1990.

### 4.5.1 PROGRAM REGULATIONS

## ENGLISH PROFICIENCY

Students are highly recommended to take English 26-100 (Composition) as students in Computer Science should develop good oral and written communications skills, besides technical proficiency in the basic science.

## SELECTION OF COURSES

In selecting courses to meet the requirements of the programs outlined below, the following general regulations also must be observed:

1) A student registering in a course without having successfully completed the prerequisite course(s) will be required to drop that course unless the consent of the instructor and Computer Science is obtained.
2) If two or more courses cover essentially the same material, only one may be takenfor credit.
3) The prior approval of Computer Science must be obtained in order to substitute any other courses for required ones.
4) Statistics courses other than those specifically listed as being required for the degree, or ones for which the required statistics

### 4.5 Computer Science

courses are themselves prerequisites, may not be taken for credit.
5) In general, computer courses offered in other areas may not be taken for credit. 60104, 60-205, and 60-206 may not be used to satisfy the major requirements of any degree program by Computer Science, or in joint programs with Computer Science, unless permission is obtained from Computer Science.

## GRADE REQUIREMENT

For the purpose of determining course prerequisites and for meeting major requirements for graduation, a minimum grade of C- is required for all Computer Science courses specifically enumerated in the major requirements for that program.

## CALCULATION OF MAJOR AVERAGE

The major average shall be calculated on the basis of the grades received in those Computer Science courses specifically enumerated in the major requirements for that program, including any grades of less than C-

### 4.5.2 PROGRAMS OF STUDY

Programs are offered which lead to the following degrees: Bachelor of Computer Science (Honours), Bachelor of Computer Science (General), B.Sc. ( Computer Information Systems Honours), B.Sc. (Computer Science with option in Software Engineering Honours) and B.Sc (Computers and MultiMedia Honours). As well, the Faculty of Science offers a B.Sc. (Mathematics and Computer Science Honours) (see 5.8.2) and a B.Sc. (Physics and Computer Science Honours) (see 5.10.2). With approval, Computer Science may be combined with other four-year Honours programs.
Bachelor of Computer Science (General)
Total courses: thirty.
Major requirements: twelve courses, including 60-100, 60-140, 60-141, 60-212, $60-$ $254,60-255,60-265,60-315,60-322$, and 60-330.

Other requirements:
(a) 62-120, 62-140 (or 62-130), and 65-205;
(b) one course from Arts/Languages, and one from Social Sciences (see 2.4.14);
(c) thirteen other courses from any area of study, including Computer Science and Business Administration.

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 60-100 60-140, 60-141, 62-120, and 62-140 (or 62. 130).

Second Year: ten courses, including 60-212 60-254, 60-255, 60-265, and 65-205.
Third Year: ten courses, including 60-315, 60-322, and 60-330.
Graduation: In order to graduate with the Bachelor of Computer Science (Genera) degree, a student must obtain a grade of $C$ or better in each Computer Science course taken to fulfil major requirements and a ar mulative average of 5.0 or better.

## Bachelor of Computer Science (Honours)

Total courses: forty.
Major requirements: twenty-three courses, consisting of 60-100, 60-140, 60-141, 60 $212,60-214,60-231,60-254,60-255,60$ 265, 60-311 (or 60-393), 60-315, 60-322, $60-330,60-334,60-367,60-436,60-440$ 60-454, 60-460, 60-470, 60-499 (a 6.0 credt hour course), and one additional Computer Science course.
Other requirements:
(a) 62-120, 62-130 (or 62-140), 62. 190, and 65-253;
(b) three courses from Arts, Lanr guages or Social Sciences (see 2.4.14), with at least one from Arts/Languages and one from 50 cial Sciences;
(c) ten other courses from any aread study, including Computer Sor ence.

### 4.5 Computer Science

## AECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 60-100, $60-140,60-141,62-120,62-130$ ( or 62-140), and 62-190.
Second $Y$ Year: ten courses, including 60-212, $60-214,60-231,60-254,60-255,60-265$, and 65-205.
Third Year: ten courses, including 60-311 (or 60-393), 60-315, 60-322, 60-330, 60-334, and 60-367.
Fourth Year: ten courses, including 60-436, $60-440,60-454,60-460,60-470$, and 60499 (a 6.0 credit hour course).
Graduation: In order to graduate with the Bachelor of Computer Science (Honours) degree, a student must obtain a grade of Corbetter in each required Computer Science course taken to fulfil major requirements; a major average of 8.0 or better; and a cumualive average of 5.0 or better.

## Bachelor of Science (Honours Computer Information Systems)

Total courses: forty.
Major requirements-Computer Science: sixteen courses, consisting of $60-100,60$ -$140,60-141,60-212,60-254,60-255,60-$ $265,60-315,60-322,60-330,60-334$, 60-393, 60-499 (a 6.0 credit hour course), and two additional Computer Science courses.
Major requirements-Business: n in e courses, including 70-151, 70-152, 71-140, 72-171, and 74-231, but excluding 73-105, 73-213, 73-220 and 73-320.
Other requirements:
(a) 62-120, 62-130 (or 62-140), and 65-205;
(b) three courses from Arts, Languages or Social Sciences (see 2.4.14), with at least one from Arts/Languages and one from Social Sciences;
(c) nine additional courses from any area of study.

RECOMMENDED COURSE SEQUENCE
First Year: ten courses, including 60-100, 60-140, 60-141, 62-120, 62-130 (or 62-140), 70-151, 71-140, and 72-171.
Second Year: ten courses, including 60-212, 60-254, 60-255, 60-265, 65-205, and 74231;
Third Year: ten courses, including 60-315, 60-322, 60-330, 60-334, and 60-393.

Fourth Year: ten courses, including 60-499 (a 6.0 credit hour course).
Graduation: In order to graduate with the Bachelor of Science (Honours Computer Information Systems) degree, a student must obtain a grade of C - or better in each Computer Science and Business Administration course taken to fulfil major requirements; a major average of 8.0 or better; and a cumulative average of 5.0 or better.

## Bachelor of Science (Honours Computer Science with Option in Software Engineering)

Total courses: forty.
Major requirements-Computer Science: twenty-four courses, consisting of 60-100, $60-140,60-141,60-212,60-214,60-231$, 60-254, 60-255, 60-265, 60-280, 60-311, 60-315, 60-322, 60-330, 60-334, 60-367, 60-380, 60-411, 60-440, 60-454, 60-480, 60-499 (a 6.0 credit hour course), and one additional Computer Science course.
Other requirements:
(a) 62-120, 62-130 (or 62-140), 62190, and 65-205;
(b) any four of 24-210, 26-140, 34228, 34-229, 40-222, 46-115, 71 140, or 71-340.
(c) two courses from Arts, Languages or Social Sciences (see 2.4.14), including one from Arts/Languages and one from Social Sciences;
(d) six additional courses from any area of study, including Computer Science.

### 4.5 Computer Science

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 60-100, 60-140, 60-141, 62-120, 62-130 (or 62-140), and 62-190.
Second Year: ten courses, including 60-212, 60-214, 60-231, 60-254, 60-255, 60-265, and 65-205.
Third Year: ten courses, including 60-311, 60-322, 60-330, 60-334, 60-367, and 60380.

Fourth Year: ten courses, including 60-315, $60-411,60-454,60-480$, and 60-499 (a 6.0 credit hour course).
Graduation: In order to graduate with the Bachelor of Science (Honours Software Engineering) degree, a student must obtain a grade of C- or better in each Computer Science course taken to fulfil major requirements; a major average of 8.0 or better; and a cumulative average of 5.0 or better.
To remove any suggestion that the word, "engineering," in the context of courses or programs in Computer Science implies the meaning of "engineering" as used in the context of courses or programs in Professional Engineering, it is hereby acknowledged that Software Engineering is a collection of principles, models, methods, and techniques for the development, maintenance, evolution, and reuse of software that meets fundamental performance and quality requirements in an economic and competitive manner.

## Bachelor of Science (Honours Computers and Multi-Media)

Total courses: forty.
Major requirements-Computer Science: twenty courses, consisting of 60-100, 60140, 60-141, 60-212, 60-214, 60-231, 60254, 60-255, 60-265, 60-315, 60-322, 60-330, 60-334, 60-350, 60-450, 60-475, $60-476,60-499$ (a 6.0 credit hour course), and one additional Computer Science course at the 300 or 400 level.
Other requirements:
(a) 62-120, 62-130 (or 62-140), and 65-205;
(b) nine additional courses from any area of study, including Computer Science.
(c) eight courses taken entirely from one of two emphases:

COMMUNICATION STUDIES EMPHASIS - 40-100, 40-101, 40. 110; two of 40-200, 40-202, 40234, 40-257, 40-275; plus three additional Communication Studes courses (Recommended: 40-211, 40-212, 40-216, 40-217, 40-275 plus Visual Arts 27-105, 27-106, 27-107; and one Viusual Arts course at the 200 level or above.

VISUAL ARTS EMPHASIS-27. 105, 27-106, 27-107, 27-243, 27. 343; and three of 27-203, 27-365 28-331, 28-342. 28-343, 28-344, 28-345; plus Communication Studies 40-100 and 40-101; and two of 40-110, 40-200, 40-202, 40. 234, 40-257, 40-275.

## Bachelor of Science (Honours Mathematics and Computer Science)

See Mathematics and Statistics, 4.8.1.
Bachelor of Science (Honours Physics and Computer Science)
See Physics, 4.9.1.
Other Combined Honours Programs

## Total courses: forty.

Major requirements-Computer Sciences fourteen courses, consisting of $60-100,60$. 140, 60-141, 60-212, 60-214, 60-231,60 $254,60-255,60-265$, and $60-315$; plus for additional Computer Science courses at the 300 level or above.
Major requirements-Other Subject: as plescribed by that area of study.
Other requirements:
(a) 62-120, 62-130 (or 62-140), and 65-205;
(b) any additional, non-major requitements as determined by the sec ond area of study;
(c) additional courses, if necessany, from any area of study to a totald forty courses.

### 4.5 Computer Science

## Minor in Computer Science

The minor in Computer Science consists of the following courses: 60-100, 60-104 (or its equivalent), 60-140, 60-141 (or 60-206), 60212, and one of 60-205, 60-254, 60-255, or $60-265$. Permission of a program advisor is required in some of these courses, and students wishing to complete a minor in Computer Science should obtain such pemission before undertaking this program of study.
Minor in Applied Information Technology
The minor in Applied Information Technology consists of the following courses: 60104, 60-140, 60-205, 60-206, 60-270, and 60-375.

### 4.5.3 CO-OPERATIVE EDUCATION PROGRAM IN COMPUTER SCIENCE

The Co-operative Education Program offers students the opportunity to combine their classroom experiences with related work experiences. The Computer Science Co-operative program will help students acquire valuable professional experience in the workplace while they are pursuing their academic careers.
Students who apply and are accepted into the Co-operative Education Program must successfully complete at least three paid work experiences interspersed throughout the four-year Honours program. The experience gained while participating in these structured and supervised work placements is viewed as an integral component of the student's educational program.

## APPLICATION PROCEDURE

Only students pursuing the following degrees will be eligible for the Co-operative Education program:
B.C.S. in Honours Computer Science;
B.Sc. in Honours Computer Science with opfion in Software Engineering;
B. Sc. in Honours Computer Information Systems;
B.Sc. in Honours Computers and Multi-Media.

Students are admitted into the Co-op Program either directly from secoondary school, or in the Fall term of their second year of university study. Prospective current students must apply to the office of Co-operative Education and Student Placement using prescribed forms, two letters of reference and a resume. Only selected students will be accepted into the Computer Science Co-operative program. The screening process will take into account the following points:
(a) academic achievement;
(b) previous volunteer and paid work experience;
(c) student's motivation for applying;
(d) letters of recommendation; and
(e) performance at an interview.

Decisions regarding admission to the Cooperative Program will be finalized by the Computer Science Co-op Committee in the Winter term of the student's second year of study.

## PLACEMENT

Students in the Co-operative Program will apply for work placement positions advertised by the Administrator of the Co-operative Education Program. These job postings will include relevant information regarding responsibilities, location, wages, etc.
Students will apply for the placements they are interested in. Employers will select the candidates they wish to interview. After interviews take place, employers will rank the students in order of preference. Students will also rank employers in order of preference. These two rankings will be used by the Administrator of the Co-operative Education Program to determine student placements.
Computer Science does not guarantee placement, but every reasonable effort will be made to ensure that appropriate employment is made available.

### 4.5 Computer Science

SEQUENCE OF WORK AND STUDY TERMS*

## FIRST YEAR

Fall Term: Study term
Winter Term: Study term
SECOND YEAR
Fall Term: Study term
Winter Term: Study term
Summer Term: Work term
THIRD YEAR
Fall Term: Study term
Winter Term: Work term
Summer Term: Study term
FOURTH YEAR
Fall Term: Work term
Winter Term: Study term
Summer Term: Work term

## FIFTH YEAR

Fall Term: Study term

* Students must successfully complete at least three out of the four work terms given above.


## WORK TERM EVALUATION

In consultation with Computer Science, the Administrator of the Co-operative Education Program will evaluate the student's performance at the conclusion of each Work Term. A student's performance in a Work Term will be evaluated as either "Satisfactory" or "Unsatisfactory".

## RULES AND REGULATIONS

1) To continue in the Co-operative program, students must:
(a) maintain a minimum major average of 8.0 ;
(b) attend all professional development workshops organized by the office of the Director of Co-operative Education and Placement;
(c) receive a satisfactory grade in each work term. This grade will be based on:

- Co-operative Program on-site visit from the office of the Director
of Co-operative Education and Placement to discuss their pro gress to date.
- Co-operative Program employer evaluation.
- Co-operative Program work kem report submitted by the student and evaluated by Computer Soence.
-Oral presentation by the student after each placement.

2) Students who:
(a) obtain an evaluation of "Unsatis. factory" for a work term;
(b) do not report for interviews;
(c) fail to report to an employer after accepting a work placement;
(d) are dismissed by the employerlor just cause;
(e) leave an employer without permission;
(f) do not maintain a minimum major average of 8.0
will be reviewed by the Computer Science Co-op Committee and may be required to withdraw from the Co-operative Program.
3) The performance of each student during her/his work term will be supervised and evaluated by the student's Co-operative Program employer.
4) The students in the Co-operative Program will be monitored by the office of tha Directrt of the Co-operative Education closely through regular phone conversations and at least one work-site visit in each work tem.
5) Each student must provide a wittenfeport at the completion of each work tem. The objective of the report is to enhance the integration of a student's theoretical ander: periential concepts and will be a techniad treatise of a project undertaken by the strdent during the work term. This report will be assessed by Computer Science. The emt. ployer must also send, to the office of the $D$. rector of the Co-operative Education, an evaluation of the student performance tor lowing each placement.

### 4.5 Computer Science

6) Students in the Co-operative Program must successfully complete at least 3 work lems.
7) Each student in the Co-operative Program will have to pay a Co-operative Program administration fee for each work and study term to a maximum of eight terms. The co-operative program administration fees are not refundable.
8) The diploma awarded to students who complete the requirements for a Bachelor's degree including the requirements of the Cooperative program satisfactorily will have a notation indicating their successful compleion of a Co-operative degree program. The transcripts of students in Co-operative Program will carry a similar designation.

### 45.4. COURSE DESCRIPTIONS

Not all courses listed below will necessarily be offered every academic year.
Due to the fact that Computer Science is a relatively new and continuously evolving discipline, some of the courses listed may undergo slight revision and therefore may not always conform exactly to the detailed descriptions given below.
All courses listed below are three lecture hours per week, unless otherwise stated. In addition, laboratory/tutorial time may be scheduled as required.
Note: Most Computer Science courses require substantial time out of class in writing, correcting, and testing computer programs. Students should be prepared to devote a minimum of three to five hours a week per course to assignment work alone.

## 60-100. Key Concepts in Computer Science

The objectives of this course are to excite students' interest in computer science and to give students a precise understanding of a number of difficult concepts that are fundamenial to modern computer science. Topics may include: data types; induction and recursion; algebraic characterization; syntax; semantics; formal logic; soundness, completeness, and decidability; specification, al-
gorithm, implementation, and determinism; complexity. (Restricted to students registered in programs offered wholly or jointly by Computer Science or by Mathematics and Statistics, or with approval of Computer Science.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)

## 60-104. Computer Concepts for End-Users

Introduction to the concepts of operation of a computer system, including hardware and software. Development of conceptual understanding of word processors, databases, spreadsheets, etc., and practical experience with their use. Networking concepts and data communication concepts will be introduced. The Intemet will be introduced with students having access to internet resources. Management information systems including the systems development lifecycle will be discussed. Fundamental concepts of algorithm development and programming will be introduced. Hands-on experience with microcomputers as well as a distrib-uted-computing environment will be involved. In addition to lecture time, laboratory/tutorial time may be scheduled as required. (May not be used to fulfill the major requirements of any major or joint major in Computer Science.)

## 60-140. Problem Solving, Programs, and Computers

Discussion of the need for careful specification and analysis of a problem before developing a solution. The importance of representing a problem in various ways before attempting to develop a solution. Introduction to, and practical experience in using various problem solving strategies, including stepwise refinement and divide and conquer. Introduction to programming concepts, data structures, definition, representation and analysis of algorithms. (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)

## 60-141. Introduction to Programming

Introduction to computing concepts: computer organization; machine language; highlevel languages; and distributed-computing

### 4.5 Computer Science

environments. Structured programming. Elements of program style, including documentation. Data declaration. Procedural programming constructs - assignment statements, sequence, selection and iteration statements. Use of debugging tools. Logical operators. Formatted Input/Output. Functions - function definition, function prototypes, scope rules, using function libraries, recursive functions. Pointers - introduction, declaration of pointers, setting up simple, linear linked lists, stacks. (Note: the C language is currently used for this course.) (Prerequisite: Minimum grade of C - in 60 100 and 60-140.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)

## 60-205. Introduction to the Internet

Students will be introduced to the Intemet as a global information infrastructure, including the development of early and current communication protocols and services, packaging of data, and data transmission. Fundamental concepts of and tools to support Intemet browsing through concepts of Universal Resource locators and Hypertext Markup Languages will be included. Students will be required to publish a website on the Internet using HTML. Web page enhancement through the use of JavaScript and other tools will be introduced. The functionality of electronic mail and bulletin board services will be introduced with hands-on experience in sending and receiving information, automated title searching, and an introduction to organizing information to be accessible over the network. Technical methods of binary data transfer on analog carriers will be introduced and comparison of Ethernet and ATM fibre-optic digital delivery will be discussed. In addition to lecture time, laboratory/tutorial time may be scheduled as required. (Prerequisite: minimum grade of C - in 60-104.) (May not be used to fulfill the major requirements of any major or joint major in Computer Science.)

## $\mathbf{6 0 - 2 0 6}$. Programming in C for Beginners

The course is an introduction to programming in C. Two major goals of this course are: teaching a rational approach to program development, and teaching an introduction
to ANSI C. The emphasis of this courseison the first goal. This course adapts a libram based approach that emphasizes the princ ple of abstraction: library and modula development. The five-phase software de. velopment method is used to solve prock lems. Topics of this course include: a brit introduction to Computer Science, introdue tion to computer hardware, statementfoms iteration, functions, top-down design, basiss of modular programming, recursion, ara/s, pointers, dynamic data structures, and fik processing. (Prerequisite: Minimum grade of C- in 60-104. Antirequisite: 60-141.) (Nor. mally may not be taken for credit by students registered in programs offered wholly or jointly by Computer Science.)
60-212. Object-Oriented Programming Using Java
Concepts of classes and objects, Java applcations, frames, event handling, contiol structures, methods, recursion, arrays, string manipulations, object-based programming, object-oriented programminginheritance, polymorphism, interiace and abstract classes, anonymous classes, dale structures in Java. Linked lists, stacks, exception handling, client server programp ming, introduction to graphical user interface. (Prerequisite: Minimum graded C- in 60-141 or 60-206.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignmentis)

## 60-214. Computer Languages,

 Grammars, and TranslatorsThis course covers both pragmatic and theor retical aspects of grammars, recognizers and translators for computer languages Regular languages: regular expressions regular grammars, finite-state machines (automata), regular language recognizers automatic regular-language-recognizer generator: lex. Context-free languages context-free grammars and pushdownatio mata (stack machine), LL grammars and top-down recognition and parsing: $L($ (1) and recursive-descent parsers, LR grammars and bottom-up recognition and parsing $\operatorname{LR}(0), \operatorname{SLR}(1), \operatorname{LR}(1)$, and $\operatorname{LALR}(1)$ parsers Automatic context-free-language parser generator: YACC. Attribute grammars, sym

### 4.5 Computer Science

tax-directed translation, computer-language processors: interpreters and compilers. (Restricted to students in Computer Science Honours and Combined Honours programs onl.) (Prerequisite: Minimum grade of C - in $60-100,60-140,60-141$ (or 60-206), and 60212.) (3lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)
60-231. Theoretical Foundations of Computer Science
An introduction to Mathematical Logic, Set Theory, and graph Theory. Topics include propositional logic, first order logic, proof lechniques, mathematical induction, sets, operations on sets, relations, operations on relations, functions, countable and uncountable sets, graph connectivity, graph isomorphism, trees, Euler graphs, Hamilton graphs, planar graphs and graph colouring. (Restricted to students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C - in 62-190.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)
60-254. Data Structures and Algorithms An introduction to the programming and time-complexity analysis of internal (main store) data structures. Topics include linear lists, stacks, queues, linked structures, representation of sparse arrays, general trees, binary trees, binary trees in sequential storage, heap sort, quicksort, linked representation of binary trees, traversal of binary trees, dynamic binary search trees. (Prerequiste: Minimum grade of C - in $60-100,60-$ 140, 60-141 or 60-206, and 60-212, or consent of Computer Science.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)

## 60-255. File Structures

This course provides students with the concepts and techniques required to efficiently maintain data on secondary storage devices. Topics include: performance differences between primary and secondary storage; secondary storage devices; fundamental file structures; sequential files; indexing; $B$ trees; $\mathrm{B}^{+}$trees; index sequential files;
hashing; sorting and searching techniques on secondary storage devices. (Prerequisite: Minimum grade of C - in $60-100,60-$ 140, 60-141 or 60-206, and 60-212, or consent of Computer Science.) ( 3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)
60-265. Computer System Organization Examination of the fundamentals of modern computer organization and architecture. Historical development. Digital design, combinational and sequential circuits. The computer system in terms of interconnection structures, memory, and I/O. CPU structure and function, including numeric representations, instruction sets, addressing modes and formats. Control unit. (Prerequisite: Minimum grade of C - in $60-100,60-$ 140, and 60-141.) (3 lecture, 1.5 laboratory hours a week; plus unsupervised study and work on individual assignments.)

## 60-270. Advanced Website Design, Construction, and Deployment

This course is intended to teach the student about advanced website creation and to give an understanding of some of the technology behind websites, as well as an understanding of emerging web-related technologies. Topics covered will include JavaScript, Style Sheets, Dynamic HTML, XML, XHTML, Web Browser compatibility issues, and how web servers work. (Prerequisite: 60-205.)

## 60-275. Selected Topics I

Topics may differ from year to year. (Prerequisite: Minimum grade of C- in 60-100, 60140, and 60-141.)

## 60-280. Practicum

This is a practical software development course. (Current language used: Java.) (Restricted to students in Honours Software Engineering only.) (Prerequisite: Minimum grade of C-in 60-100, 60-140, 60-141, and 60-212.)

## 60-298. Co-op Work Term I

## 60-311. Introduction to Software Engineering

This course introduces the fundamental concepts, principles, and general tech-

### 4.5 Computer Science

niques in developing large-scale software systems. It will cover the main issues in all the development stages in software life cycle, including requirement analysis and specification, object-oriented and functionoriented design, module testing, integration, and system testing, system maintenance, etc. Both formal methodology and its application will be discussed. There are projects associated with this course. The projects are designed to provide the students with the opportunity of obtaining experience in teamwork as well as in the management and development of non-trivial software systems. (Restricted to students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C- in 60-212, 60-231, 60-254, and 60-255.)
60-315. Database Management Systems This course is an introduction to database management systems. Topics include: basic concepts; 3-level architecture; entity-relationship model; the relational model; relational algebra and calculus; SQL; database design with Normalization Theory. (Prerequisite: Minimum grade of C - in 60-212, $60-$ $254,60-255$, and 60-265.)

## 60-322. Object-Oriented Software Analysis and Design

This course builds on the knowledge of ob-ject-oriented programming, data structures, and file structures gained in courses 60-212, $60-254$, and 60-255. Students are introduced to object-oriented software analysis and design techniques that are currently used in industry. (Prerequisite: Minimum grade of C - in 60-212, 60-254, 60-255, and 60-265.)

## 60-330. Operating Systems Fundamentals

Operating system services, introduction to primary components of multiprogramming operating systems, CPU scheduling, concurrent processes, process synchronization and interprocess communication, deadlocks, memory management, file systems, virtual memory, disk scheduling. (Prerequisite: Minimum grade of C - in 60-212, $60-$ 254, 60-255, and 60-265.)

## 60-334. World-Wide Web Information Systems Development

This course is designed for people who wat to make their data available to others over the Internet. Topics will include WWw authoring, WWW site planning, execulable programs that create dynamic documents the client-server model, multi-tier WWW software architecture, and security aspects (Restricted to students in Computer Sciences Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of $\mathrm{C} \cdot \mathrm{n}$ $60-212,60-254,60-255$ and $60-265$. Also recommended is $60-205$, or some experence with web authoring.)
60-342. End-user Interface Programming This course provides a general introduction to the theory and practice of the design, im. plementation, and evaluation of end-userin terfaces. Topics include: principles of design; methods for evaluating interfaces user interface architecture and design; techniques for implementing user interlaces (Restricted to students in Computer Sciencer Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C - in $60-212,60-254,60-255$, and 60-265.)

## 60-350. Introduction to Multimedia Systems

This course provides the student with basic concepts and techniques used in mutime dia systems. Topics include: componentsd multimedia systems (text, audio, and video), media formats and standards, data comrpression techniques, hypermedia tectrniques, and authoring tools. (Restricted b students in Honours Multimedia only.) (PTE requisite: Minimum grade of C - in $60-212$ 60-254, 60-255, and 60-265.)
60-352. Introduction to Computer Graphics
An introduction to computer graphics hart ware and software, interfaces, standards programming libraries, fundamental algr rithms, rendering techniques, and algorithms for 2D and 3D applications Substantial programming work is vital to this course. (Restricted to students in Honours Multimedia only.) (Prerequisite: Minimum grade of C - in $60-212,60-254$, and 62-120.)

### 4.5 Computer Science

60-367. Computer Networks
introduction to, and use of computer networks, network structures and software. Examples of network topology, protocols, and routing algorithms. (Prerequisite: Minimum grade of C - in 60-212, 60-254, 60-255, and 60-265.)

## 60-375. Selected Topics

Topics may differ from year to year. (Prerequisite: Minimum grade of C - in 60-212, 60-$254,60-255$, and $60-265$. Additional courses may be required depending upon the topic.)

## 60-376. Selected Topics

Topics may differ from year to year. (Prerequisite: Minimum grade of C - in 60-212, $60-$ $254,60-255$, and 60-265. Additional courses may be required depending upon the topic.)

## 60-380. Practicum

This is a practical software development course. (Prerequisite: Minimum grade of C in 60-212, 60-254, 60-255, and 60-265.) (Restricted to students in Software Engineering only.)

## 60-393. Developing Systems for Information Processing

An historical perspective on the use and growth of the computer in business. A discussion of the business environment in which this use and growth has been and is taking place. Basic concepts of the systems development cycle of today's business and management information systems. The planning and managing of the system development life cycle. (Prerequisite: Minimum grade of C - in $60-212,60-254,60-255$, and 60-265.)

## 60-398. Co-op Work Term II

## $60-411$. Software Verification and Testing

This course introduces students to the verification and testing phases of software development. It will discuss concepts, processes, models, patterns, and tools for verification and analysis. An important component is a group project involving the verification and/or testing of a large software system. (Restricted to Semester 7 and Semester 8 students in Software Engineering only.) (Prerequisite: Minimum grade of C - in

60-212, 60-254, 60-255, 60-265, 60-311, 60-315, and 60-330.)

## 60-436. Distributed Computing

This course provides an overview of computer networks and distributed systems, covering aspects ranging from encoding bits on a transmission medium to the design of distributed application software. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C - in 60-212, 60-254, 60255, 60-265, 60-315, 60-330, and 60-367.)

## 60-440. Principles of Programming Languages

Basic concepts of programming languages. Comparative study of the major programming paradigms, including imperative, ob-ject-oriented, functional, logic, and concurrent programming. Principles of programming language design and evaluation. Syntax, semantics and implementation techniques of programming languages. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C - in 60-212, 60-214, 60-231, 60-254, 60-255, 60-265, 60-311 or 60-393, and 60-322.)
$60-450$. Multimedia System Development The aim of this course is to discuss a wide range of technologies used in the development of multimedia objects, networked multimedia systems, user interfaces, and multimedia on the Intemet. (Restricted to students in Honours Multimedia only.) (Prerequisite: Minimum grade of C - in 60-350.)

## 60-454. Design and Analysis of Computer Algorithms

The intent of this course is to introduce the fundamental techniques in the design and analysis of computer algorithms. Topics include: asymptotic bounds, advanced data structures, searching, sorting, order statistics, oracle arguments, divide-and-conquer, greedy algorithms, dynamic programming, graph algorithms, NP completeness, and approximation algorithms. (Restricted to Se mester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite:

### 4.5 Computer Science

Minimum grade of C - in $60-212,60-231$ and 60-254.)

## 60-460. Digital Design and Computer Architecture

Modular design concepts in digital circuits. Interfacing facilities. Memory Organization. Architecture classification schemes. Parallel computing architectures. Pipelining and vector processing. Alternate architectures and performance enhancement. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C -in 60-265, 60-330, and 60-367.)
60-470. Project Using Selected Tools
Students will complete a project using an advanced computing tool, such as a database package, simulation software, speech-recognition hardware module, etc. Students are required to submit a report describing the project and demonstrating mastery of the tool. Tools and the project are chosen by the student with the approval of the instructor. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C - in 60-212, 60-254, 60-255, 60-265, 60-311 or 60-393, 60-322, and 60-330.)

## 60-475. Selected Topics

In many cases the topics will coincide with a graduate course offering in a given year, and students will be required to complete the lecture component of that graduate course. Topics may include: advanced database management, graphics, artificial intelligence, information retrieval, theory of computation, functional programming, knowledge base systems, and foundations of programming languages. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C- in 60-212, 60-254, 60255, 60-311 or 60-393, 60-322, and 60-330. Additional courses may be required depending upon the topic.)

## 60-476. Selected Topics

In many cases the topics will coincide witha graduate course offering in a given year, and students will be required to complete thelec. ture component of that graduate course. Topics may include: advanced database management, graphics, artificial intelligence, information retrieval, theory of computation, functional programming, knowledge base systems, and foundations of programming languages. (Restricted to Semester 7 and Semester 8 students in Computer Science Honours and Combined Honours programs only.) (Prerequisite: Minimum grade of C -in $60-212,60-254,60$ 255, 60-311 or 60-393, 60-322, and 60-330. Additional courses may be required depending upon the topic.)

## 60-480. Practicum: Selected Topics in Software Engineering

Students will be provided with a list of advanced topics in software engineering, such as software process modeling, formal specification of concurrent systems, real-time systems, object-oriented methodology, formal verification in concurrent systems, testing techniques in communication protocols, reverse engineering. Each student will survey a topic and must submit a survey paper. (Restricted to Semester 7 and Semester 8 Software Engineering students only.) (Prerequisite: Minimum grade of C - in $60-212$, $60-254,60-255,60-311,60-322$ and 60 330.)

## 60-497. Co-op Work Term III

60-498. Co-op Work Term IV
60-499. Project Management: Techniques and Tools
The course consists of two components: a) exposure to project-presentation and project management skills, and b) working on a large project in a group. The course co-ordnator will arrange lectures on a variety of relevant topics. The lectures may have quiz. zes and/or short assignments. Students will be expected to develop skills in technical writing, organizing seminars, techniques lor use of multimedia tools, as well as developing a major project using a modern software
1001. (Restricted to Semester 7 and Semester8 students in Computer Science Honours and Combined Honours programs only.) (A 6.0 credit hour course.) (Prerequisite: Minimum grade of C - in 60-212, 60-254, 60-255, 60-311 or 60-393, 60-322, and 60-330, or consent of the program advisor.)

### 4.6 Earth Sciences

(Ext. 2486)
OFFICERS OF INSTRUCTION

## University Professor

Symons, David T.A.; B.A.Sc. (Toronto), A.M. (Harvard), Ph.D. (Toronto), P. Eng.-1970.

## Professors Emeriti

Sonnenfeld, Peter; Absolut. Rer. Nat. (Comenius U., Bratislava), Dr. Rer. Nat. (Charles U., Prague), P. Geol.-1966.
Sanderson, Marie E.; B.A. (Toronto), M.A. (Maryland), Ph.D. (Michigan). -1965
Hudec, Peter P.; B.Sc. (Western Ontario), M.S., Ph.D. (Rensselaer Polytech. Inst.).1970.

Smith, Terence E.; B.Sc., Ph.D. (Wales)1969.

## Professors

Trenhaile, Alan S.; B.Sc., Ph.D. (Wales)1969.

Simpson, Frank; B.Sc. (Edinburgh), Dr. Nat. Sc. (Jagiellonian U., Krakow), P. Eng., P.Geo.-1974.

Lakhan, V. Chris; B.A. (Guyana), M.A. (Windsor), Ph.D. (Toronto), F.R.G.S. (U.K.), C.E.S.(U.S.)-1984.

Samson, lain M.; B.Sc., Ph.D. (Strath-clyde)-1986. (Head of the Department)
Al-Aasm, Ihsan S.; B.Sc., M.Sc. (Baghdad), Ph.D. (Ottawa)-1989.
Fryer, Brian J.; B.Sc. (McMaster), Ph.D. (Massachusetts Inst. Technology)-1993.

## Associate Professors

La Valle, Placido D.; B.A. (Columbia), M.A. (Southern Illinois), Ph.D. (State U. of lowa)-1969.
Rodrigues, Cyril G. I.; B.Sc. (British Columbia), M.Sc., Ph.D. (Carleton)-1979.

## Assistant Professors

Graniero, Philip A.; B.E.S., M.E.S. (Waterloo), Ph.D. (Toronto)-2000.
Fowle, David A.; B.Sc. (Western Ontario), M.Sc., Ph.D. (Notre Dame)-2001.

Cioppa, Maria T.; B.Sc. (Ottawa), M.Sc. (Victoria), Ph.D. (Lehigh)-2001.

## Adjunct Professors

Blackburn, William H.; B.Sc. (St. Francis Xavier), Ph.D. (Massachusetts Inst. Tech-nology)-1989.
Greenough, John D.; B.Sc. (Acadia), M.Sc. (Carleton), Ph.D. (Memorial)-1999.

## Cross-Appointment

Reitsma, Stanley; B.A.Sc., M.Sc. (Waterloo), Ph.D. (Queen's)-1997.

### 4.6.1 PROGRAMS OF STUDY

Programs leading to the Bachelor of Science degree in Geology; Environmental Geoscience; Geoinformatics; Physical Geography; and Geography in Environmental Resource Management are offered. All programs are subject to the general University and Faculty of Science regulations as outlined in the relevant sections of this calendar.
Course Numbering: The first digit of the three-digit course number indicates the year of undergraduate studies in which the course is normally taken. However, note that many 300 and 400 level courses are offered in altemate years such that some 400 level courses should be taken in year 3 and some 300 level courses in yeaar 4 . Field Camp I, $61-280$ and Field Camp II, 61-380 follow the Winter term.
Note: Geology and Environmental Geoscience students are strongly urged to consult with an Earth Sciences advisor at the start of each term.
Note: Students wishing to take additional Biological Sciences courses later in their program must take both $55-140$ and $55-141$.

## Professional Licensure of Geoscientists

In the very near future, professional geoscientists will have to be licensed to practice in the province of Ontario and elsewhere in Canada. To become licensed, a four year geoscience degree is required with certain minimum knowledge requirements. The Geology and Environmental Geoscience programs listed below are designed to meet these requirements. The choice of optional
geoscience and basic science courses should be made in consultation withan Earth Sciences counselor to make sure that the courses can be used for licensure requirements.

## Honours Environmental Geoscience

Students should consult with an Earth Sdences advisor before making elective course choices to make sure that the choices conform to the requirements for professional licensure as a geoscientist.
Total courses: forty.
Major requirements: twenty-two courses, in. cluding $61-140,61-141,61-220,61-221,61$ 224, 61-231, 61-232, 61-280, 61-326, 61-327, 61-436, 67-100, 67-210, 67-246, plus eight additional courses from $61-323$, 61-324, 61-424, 61-430, 61-440, 61-441, 61-499, 67-102, 67-221, 67-320, 67-334, 67-402, and 87-315.
Students who intend continuing on to graduate studies should take 61-499 (Thesis).

## Other requirements:

(a) twelve courses from Mathematics and Science, including one pairo of either 55-140 and 55-141, or bath 64-140 and 64-141; plus 59-140, 59-141, 60-140, 62-130 (or 62. 140 and 62-141), and 65-205. No more than four courses should be from Biological Sciences.
(b) two courses, one from each of Ats and Social Sciences. (Recom. mended: 34-227, 45-211, 48-320, and 50-393.)
(c) four additional courses from any area of study (Recommended: 67. 310, 67-410.)

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including, 55-140 and 55-141 (or 64-140 and 64-141), 59-140, $61-140,61-141,62-130,65-205$, and 67 . 100.

Second Year: ten courses, including $60-140$, 61-220, 61-221, 61-224, 61-231, 61-232, 61-280, 67-246, and 67-210.

### 4.6 Earth Sciences

Third Year: ten courses, including 61-326 and 61-327.
Fourth Year. ten courses, including 61-436. Honours Environmental Geoscience With Thesis
In order to eaman Honours B. Sc. in Environmental Geoscience With Thesis, students must include the course 61-499 (Thesis). It should be noted that only students who have maintained a major G.P.A. of 8.0 and a cumulative G.P.A of 5.0 will be permitted to enrol in 61-499.

## Honours Geoinformatics

Total courses: forty.
Major requirements-Earth Sciences: fourteen courses, consisting of 61-140, 61-141, 61-232, 61-280, 67-100, 67-102, 67-210, 67-246, 67-310, 67-402, and 67-410; plus three of 61-220, 61-224, 61-230, 61-231, 61-323, 61-430, 61-436, and 67-320.

Major requirements-Computer Science: eleven courses, consisting of 60-100, 60140, 60-141, 60-212, 60-254, 60-255, 60-$265,60-315,60-322,60-330$, and 60-334.

Major requirements-Earth Sciences or Computer Science: 60-499 ( a 6.0 credit course)or $61-499$ ( a 6.0 credit course), or two additional courses numbered 60-, 61-, or 67 -(as chosen in consultation with an advisor).
Other requirements:
(a) one pair of both 55-140 and 55141, or both 59-140 and 59-141, or both 64-140 and 64-141;
(b) 62-120,62-130, and 65-205;
(c) eight options from any area of study, including Earth Sciences or Computer Science, with at least one from each of Arts and Social Sciences.

## Honours Geography in Environmental Resource Management

Total courses: forty.
Major requirements: sixteen courses, induding 42-103, 42-231, 42-249, and 61499; plus 67-100, 67-102, 67-210, 67-246,

67-301 (or 42-301), 67-332, 67-334, and 67402; plus three of
67-220, 67-221, 67-310, 67-320, 67-351, 67-367, 67-410, and 67-453.
Other requirements:
(a) twelve courses, consisting of 55140, 55-141, 55-201, 55-210, 59140, 59-141, 59-230, 61-141, 61-242, 62-130, 64-140, and 65205;
(b) five additional courses chosen entirely from one or another of the following concentrations:
Exotoxicology: 55-430, and four of 55-211, 55-234, 55-324, 55-325, 55-336, 55-435, 55-444, and 55468;
Waste Management: 93-224 and four of 61-436, 85-233, 93-211, 93-314, 93-321, 93-414, 93-425, and 93-426.
(c) 41-110 and 41-111; plus one course from Arts/Languages;
(d) four courses from any area of study, including Geography (42- or 67-). (Recommended: 34-227, 45212, 48-320, 50-393, 64-290, 71140.)

## Honours Geology

Note: Students should consult with an Earth Sciences advisor before making elective course choices to make sure that the choices conform to the requirements for professional licensure as a geoscientist.
Total courses: forty.
Major requirements: twenty-two courses, including $61-140,61-141,61-220,61-221,61-$ 224, 61-230, 61-231, 61-232, 61-280, 61-327, 61-380, 61-436, plus ten additional Geology courses from 61-320, 61-321, 61323, 61-324, 61-326, 61-420, 61-424, 61429, 61-430, 61-499, 67-100, 67-210, 67-246, 67-402.
Students who intend continuing on to graduate studies should take 61-499 (Thesis).

## Other requirements:

(a) twelve courses from Mathematics and Science, including 59-140,

### 4.6 Earth Sciences

59-141, 60-140, 62-130, 64-140, 65-205. No more than two courses should be from Biological Sciences.
(b) two courses from the Faculty of Arts and Social Sciences.
(c) four additional courses from any area of study. (Recommended:67310, 67-410)

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 59-140, 59-141, 60-140, 61-140, 61-141, 62-130, 65-205.

Second Year: ten courses, including 61-220, 61-221, 61-224, 61-230, 61-231, 61-232, 61-280, and 64-140.
Third Year: ten courses, including 61-327 and 61-380.

## Fourth Year, ten courses.

## Honours Geology with Thesis

In order to earn an Honours B.Sc. in Geology with Thesis, students must include the course 61-499 (thesis). It should be noted that only students who have maintained a major G.P.A. of 8.0 and a cumulative G.P.A of 5.0 will be permitted to enrol in 61-499.

## Honours Physical Geography

Total courses: forty.
Major requirements: seventeen courses, including 42-103, 42-231, 61-326, and 61499; plus 67-100, 67-102, 67-210, 67-220, 67-221, 67-246, 67-301 (or 42-301), 67-370, 67-443, and 67-444; and two of 42-402, 67310 or 67-320; plus one of either 42-130 or 42-131.

## Other requirements:

(a) three pairs of both 55-140 and 55141 , both $59-140$ and $59-141$, both 61-140 and 61-141, and both 64140 and 64-141;
(b) 60-104, 60-206, 62-130, and 65205;
(c) seven additional courses which could otherwise be credited towards the major requirements for a B.Sc. degree in Biology, Chemistry, Computer Science, Geology, or Physics, or from the Faculty of

Engineering, including any notaready applied to (a) above;
(d) one course from Arts/Languages;
(e) five courses from any subject area, including Physical Geography (67-).

## Combined Honours Programs

Total courses: forty.
Major requirements-Earth Sciences: fourteen courses, consisting of $61-140,61-141$, $61-232,67-100,67-102,67-210,67-246$; plus seven other Earth Sciences courses at the 200 level or above, chosen in consultation with an Earth Sciences advisor.
Major requirements-Other Subject: fouteen courses as prescribed by that area of study.
Other requirements:
(a) 60-104 and 62-130 and two other Science or Mathematics courses as prescribed by Earth Sciences;
(b) four science courses from a disopline other than Earth Sciences or that of the second major subject area;
(c) four courses from any area of study other than Science or the discipline represented by the second major subject area.

## Minor in Geography

A minor in Geography consists of:
(a) one of 42-130, 42-131, or 42-150;
(b) one of $67-100$ or $67-102$;
(c) four other 42-and/or 67-Geogrphy courses, three of which must be at the 200 level or above.

## Minor in Geology

A minor in Geology consists of 61-140, 61-141,61-220,61-231, 61-232, and one other Geology course at the 200 level or above. Students are reminded to select courses that may be taken for credit towards the B.Sc. degree.

### 4.6.2 CO-OPERATIVE EDUCATION PROGRAM.

The Co-operative Education Program is avaliable for students in the Honours Geology, Honours Geology with Thesis, Honours Environmental Geoscience, and Honours Environment Geoscience with Thesis degree programs. The Co-op program aims to provide students with exposure to practical aspects of the Earth Sciences during their undergraduate years. The program alternates study terms and three paid work temms, beginning at the end of the second year of study. The experience gained while paricipating in these structured and supervised work placements is viewed as an integral component of the student's education. More detailed information about the program can be obtained in the Co-operative Education Office in Dillon Hall.

## APPLICATION PROCEDURE

Students seeking admission to the Co-operaive Education Program must be admitled to the Faculty of Science and enrolled as lull-time students in Environmental Geosdence or Geology. Students may apply for admission to the Co-op program in the Fall lem of their second year. Interviews will be held during the Fall term of the second year of study, and preliminary admission to the co.op program will be based on the student's academic performance during the first year of study. Final acceptance will be made by mid-March in the Winter term of the second year of study, and based upon academic performance up to that date. A series of interviews with prospective employers will lakeplace at this time. Normally, acceptance to the Co -op program requires a minimum cumulative average of 5.0 and a major average of at least 8.0.

## PLACEMENT

Co-op students will apply for work placement positions advertised by the Administrator of the Co-operative Education Program. These job postings will include relevant information regarding responsibilities, loca$f o n$, wages, etc. Students will apply to the employers of their choice.

Employers will be provided with a complete listing of Co-op students interested in their employment opportunities. Letters of application, resumes, and academic transcripts will be forwarded to the employers, who will select the students they wish to interview. Placement is not guaranteed, but every reasonable effort will be made to ensure that appropriate employment is made available.

## SEQUENCE OF WORK AND STUDY TERMS

FIRST YEAR
Fall Term: Study term
Winter Term: Study term
SECOND YEAR
Fall Term: Study term
Winter Term: Study term
Summer Term: Work term
THIRD YEAR
Fall Term: Study term
Winter Term: Study term
Summer Term: Work term
FOURTH YEAR
Fall Term: Study term
Winter Term: Study term
Summer Term: Work term

## EVALUATION OF STUDENT PERFORMANCE

Upon the recommendation of the employer and, where deemed appropriate, in consultation with Earth Sciences, the Administrator of the Co-operative Education Program will evaluate the student's performance at the conclusion of each Work Term. A student's performance in a Work Term will be evaluated as either "Satisfactory or "Unsatisfactory".
A student who obtains an evaluation of "Unsatisfactory", or who does not report for interviews, or who fails to report to an employer after accepting work, or who is dismissed for cause, or leaves an employer without permission, may be required by the Academic Standing Committee to withdraw from the Co-operative Education Program.

A student who obtains an evaluation of "Unsatisfactory" in any two Work Terms will be required to withdraw from the Co-operative Education Program.
A student who fails to maintain a cumulative average of 5.0 and a minimum major average of 8.0 will be required to withdraw from the Co-operative Education Program.

### 4.6.3 COURSE DESCRIPTIONSGEOLOGY

All courses listed will not necessarily be offered each year.

## 61-110. The Restless Earth-an Introduction

Rocks and minerals and the processes of formation of igneous, sedimentary, and metamorphic rocks. Volcanism, earthquakes, and the Earth's interior. Continents and ocean basins, plate tectonics, and continental drift. This course is designed for nonscience majors. (May not be taken for credit toward a B.Sc. degree.) (Antirequisite: 61 140.) (2 lecture hours a week.)

## 61-111. Formation of the Earth

A summary of the major rock types and plate tectonics: surface processes, including those of the marine, transitional and continental environments; geologic time; geologic dating techniques, the fossil record, and evolution; groundwater, mineral, and energy resources. (May not be taken for credit toward a B.Sc. degree.) (Antirequisite: 61-141.) (2 lecture hours a week.)

## 61-112. Global Change: Earth in Peril?

Satellite geophysics and geologic data conceming long-term changes to the Earth's atmosphere, oceans, and surface environment. Issues include global warming, greenhouse effect, ozone layer, deforestation, desertification, energy choices, and water and mineral supply. This course is designed for non-Science majors. (May be taken for credit by B.Sc. students, but does not count as a Geology course or other Science option towards the fulfillment of the requirements of the B.Sc. degree.) (2 lecture hours a week.)

61-140. Earth Systems I: The Solid Eant The Earth's component systems and the interrelationships. Origin and nature of for solar system. Earthquakes, seismologyary the Earth's interior. Plate tectonics. Minemis Magmatism and igneous rocks. Geologe time, stratigraphy and sedimentary rocs Crustal evolution, metamorphic rocks and deformation. Hydrothermal systems. Mip eral and energy resources. This course is designed for Science majors. (2 lecture, 25 laboratory hours a week.)

## 61-141. Earth Systerns II: The Earth's Surface

The Earth's surficial systems: surface poos esses, the hydrosphere and biosphere. Oceans. Streams. Groundwater. Gladen Deserts. Weathering and related pherom ena. Sediments, fossils, time and paleoer vironmental analysis. Evolution of the biosphere. This course is designed for $S 0$ ence and Engineering majors. (2 lecture, 25 taboratory hours a week.)
61-210. Introduction to Oceanography Geological, biological, physical, and chent cal aspects of the oceans; exploration lech niques, instruments, and vessels; origind the oceans; ocean circulation; ocean andd. mate; waves and tides; marine resouros This course is designed for non-Sciencemsa jors. (May not be taken for credit towardsa B.Sc. degree in Geology or Envirommete Geology.) (2 lecture hours a week.)
61-213. Geology and the Environment Effect of geologic factors on the envion ment: pollution of groundwater, ground sib sidence, nuclear waste disposal, sit surface disposal of liquid wastes, eatht quake prediction and control. This courses specifically designed for the non-scientist (May not be taken for credit towards a BSC degree in Geology or Environmental Gook ogy.) (2 lecture hours a week or equivalent)

## 61-214. Geology and International Development

Aid, international development, and Earth processes; integration of walerresource management, soil consenation, and agroforestry; geological hazards in a tropical setting; smallscale mining and conservation of mirn

### 4.6 Earth Sciences

eral resources; engineering an improved quality of life in developing nations. (May not be taken for credit towards a B.Sc. degree in Geology or Environmental Geology.) (2 lecture hours a week or equivalent.)

## 61-220. Introduction to Mineralogy

Anintroduction to the origin, distribution and uses of minerals. Topics covered will indude: an introduction to mineral structures. aystal chemistry and crystallography, mineal descriptions and occurrence, and laboabary identification of common minerals.. Prerequisites: 59-140, 59-141.) (2 lecture, 3 bboatory hours a week.)

## 61-221. Applied Mineralogy

The stability of minerals in natural systems and the relationship to crustal and surficial processes. Mineral equilibria in igneous, melamorphic and hydrothermanl environments. Geothermometry and geobarometry. Intooduction to optical mineralogy and X -ray fiftraction. Microbeam analytical techniques inmineralogy. (Prerequisite: 61-220.) (3 lecwe, 3 laboratory hours a week.)
61-224. Introduction to Geochemistry Anoveriew of the chemical composition of Earth and the factors governing the cycling dchemicals throughout the earth from the cre through to surface environments. Principles of crystal chemistry, chemical reacfins and equilibria, oxidation and reduction, adsopption and ion exchange and isotope chemistry and their relevance to Earth processes. (Prerequisites: 59-140, 59-141; Corequisite: 61-221, or consent of instruclor) (3 lecture and/or tutorial hours per week.).

## 61-230. Plate Tectonics and the Earth's Interior

Pate tectonic processes and the major featres of crustal evolution; analysis of the Earth's interior using seismologic and other geophysical evidence; introductory tectonic and geophysical problems. (2 lecture, 2 aboratory hours a week.)
61-231. Crustal Processes and Products Oigin and differentiation of the Earth. Formation, character and metamorphism of cceanic crust. Subduction of oceanic crust:
processes, products and consequences. Formation and evolution of continental crust: structure of the continents, igneous processes and products, and metamorphism. (Prerequisite: 61-140, 61-220, or consent of instructor) (2 lecture, 3 laboratory hours a week.)

## 61-232. Modern and Ancient Sedimentary Environments

An integrated approach to paleontology and sedimentology; introduction to sedimentary deposits, sedimentary environments and associated invertebrate organisms; depositional systems and peleonenvironmental anatysis. (Prerequisite: 61-141) (2 lecture, 3 laboratory hours a week.)

## 61-242. Environmental Geology

Discussion of Earth resources: water, soil, minerals, energy, and their environmental impact. Causes and effects of global climatic changes-past, present, and future. Hydrogeology; surface and groundwater contamination, landfill siting and monitoring. Geologic hazards; earthquakes and volcanoes; landslides and subsidence; coastal and river erosion. Glacial forms and air photo interpretation. Waste management in geology. (Prerequisite: 61-141.) (2 lecture, 2 tutorial hours a week.)

## 61-246. Environmental Decision Analysis

Earth systems, including climatic extremes, the industrialized ecosystem; decisions under uncertainty in mineralresource exploration and development; rational approach to decision making, alternatives to decision analysis; environmental impact assessment and risk management, expert systems approach to environmental problem solving, applications in less developed countries. (3 lecture hours a week.)

## 61-247. Environmental Auditing in Mineral Resource Development

Cyclical flow of energy and matter in nature, human interaction with environmental processes, elements of policy analysis; environmental management systems and environmental impact assessment; environmental audit processes, steps in design and delivery; mineral resource development and

### 4.6 Earth Sciences

the audit protocols; from audit to action plan, auditing the audit. (3 lecture hours a week.)

## 61-280. Field Camp I

introduction to field relationships and mapping methods. Interpretation of geologic maps. Required field trips. (2 weeks; immediately following the winter term examination period.) (Prerequisites: 61-231 and 61-232).
61-298. Co-op Work Term I

## 61-320. Igneous Petrology

The origin and evolution of igneous rocks. Melting and crystallization, magmatic differentiation, contamination, mixing of magmas. Mineralogy, petrography, geoche mistry and tectonic environments of representative rock suites. (Prerequisite: $61-221,61-231$.) (3 lecture, 3 laboratory hours a week.)

## 61-321. Metamorphic Petrology

The distribution and origin of metamorphic rocks in the light of physical, chemical and tectonic constraints. Mineralogy, petrography, and textural evolution of representative rock suites. (Prerequisites: 61-221,61-231.) (3 lecture, 3 laboratory hours a week.)

## 61-323. Stratigraphy

The principles of lithostratigraphy and biostratigraphy; surface and subsurface stratigraphic methods; concepts of facies; identification and interpretation of sedimentary sequences; stratigraphic maps, including numerical techniques; applications in resource exploration. (Prerequisite: 61 232.) (3 lecture, 3 laboratory hours a week.)

## 61-324. Sedimentary Petrology

A review of the principal depositional environments of clastic and carbonate rocks; discussion of sediment transport processes and the generation of sedimentary structures; textural and mineralogical properties of sediment and sedimentary rocks, including comparison of ancient and modern depositional environments. Economic aspects of sedimentary rocks. Microscopic and laboratory examination of selected sedimentary rock types will be complemented by field work in the local area. (Prerequisites: 61 221 and 61-232.) (2 lecture, 3 laboratory hours a week; field trips.)

61-326. Quaternary and Glacial Geology The occurrence of ice ages, with parioiler emphasis on the late Cenozoic, the Laumen. tide and Cordilleran glaciations of Carnath during the Quatemary Period. Glacial budfry ets, processes of ice movement, mechaniss of ice erosion, debris entrainment and deposition. Erosive and depositional landoms and landscapes. Periglacial environments and landforms. The origin and nature of fils, stratified drift and other terrestrial, lacustine and marine deposits. Changes in realitre sea level. (2 lecture and 2 lab hours per week.)

## 61-327. Structural Geology

Rock deformation; primary and seconday structures; analysis and classification ol folds and faults; interpretation of geologic maps; solution of structural problems. (Prorequisite: 61-231.) (3 lecture, 3 laboraby hours a week.)

## 61-380. Field Camp II

Geological mapping methods. An addifional fee is charged to defray the costs of acoommodation. (Prerequisites: 61-280 and 61327.) (2 weeks; immediately following the Winter term examination period.)

## 61-398. Co-op Work Term II

## 61-420. Mineral Deposit Geology

Geology and genesis of metallic and indus trial mineral deposits. Introduction to ore forming processes and mineral exploration (Prerequisite: 61-221, 61-231.) (2 lecture, 3 laboratory hours a week.)

## 61-424. Advanced Geochemistry

Processes including water-rock interacion and contaminant mobility in near surface geological settings will be studied using the principles of thermodynamics and chemical kinetics. Topics covered will include: the laws of thermodynamics, aqueous comr. plexation, solutions and activities, redoxreactions, solubility and absorption, and chemical kinetics in natural systems. (Prerequisite: 61-224) (3 lecture and/or tuloria hours per week).

## 61-429. Basin Analysis

Classification of sedimentary basins, pres. sure-temperature variation, compaction and porosity-permeability distribution, ground
water regime and hydrogeologic environment, fluid-rock interaction, diagenetic reacfions, organic matter, mineralization, and basin history. (Prerequisite: 61-232 or consent of instructor.) (3 lecture/seminar hours aweek.)

## 61430. Environmental and Engineering Geophysics

An introduction to the use of seismic, electical, electromagnetic and other geophysical methods used in near-surface environmental and engineering assessment studies. (2 lecture, 3 laboratory hours a week.)

## 61436. Hydrogeology

Fundamental physics and properties of goundwater flow in porous geologic mateial, develops an intuitive, problem-solving approach to hydrogeologic problems. Topics indude: groundwater flow equations, flow nets, aquifer pumping, contaminant transpor processes, two-phase flow, and dense non-aqueous phase liquids. Computer appication will be emphasized. (Prerequisite: $61-141,62-130$ or equivalent or consent of instructor.) (3 lecture, 2 laboratory hours a week.)

### 61.440. Environmental Geochemistry

The effects of surficial processes and activiles on the migration of chemicals in the enwionment. Factors governing natural versus anthropogenic cycling of chemicals in the surficial environment. The principles of weathering and geochemical cycles will be utilized to study environmental geochemisty through the influences of mining, indusHial and agricultural activities. (Prerequisite: 61-221, 61-224, or consent of instructor) (3 bcture and/or tutorial hours per week.)

## 61441. Biogeochemistry

An investigation of global change focusing on the chemical, physical, geological, and biological processes that cycle elements through the Earth's system. Topics covered inthis course will include: The origin of Life, global element cycles, mineral weathering and the global $\mathrm{CO}_{2}$ budget, microbe-waterrockinteractions (including: sorption, oxida-tion-reduction, and methylation of metals; biological degradation of organic molecules; application of molecular biology and stable
isotope techniques to environmental problems). (Prerequisites: 61-224 or consent of instructor) (3 lecture and/or tutorial hours per week.)

## 61-470. Special Topics in Geology

Selected topics of current interest. (Prerequisite: consent of instructor and a program advisor.) (3 lecture or project hours a week.)

## 61-498. Co-op Work Term III

## 61-499. Thesis

Each student will be required to carry out a selected research project and write a report under the supervision of a staff member. The student must register in two terms; the grade will be assigned at the end of the second term. (A6.00 credit hour course.) (Restricted to Earth Sciences students with a major average of at least 8.0.)

### 4.6.4 COURSE DESCRIPTIONS-PHYSICAL GEOGRAPHY

Not all courses listed will necessarily be offered each year.
67-100. Introduction to Geomorphology The landscapes of the earth, with particular reference to the glaciers, coastlines, rivers, and northern permafrost regions of Canada. ( 3 lecture hours a week.)

## 67-102. Atmosphere and Climate

An introduction to the atmosphere and the basic principles of meteorology and climatology. Topics include weather systems, atmospheric pollution and inadvertent climate modification, climate change and relationships between climate and living organisms. (3 lecture hours a week.)

## 67-200. Introductory Resource

 ManagementBasic concepts pertaining to natural resources, the impact of their use on the ecosystem, and the problems in their management. Emphasis will be placed on the growing demand for resources, the functional interaction between human society and its physical environment, and the spatial patterns of resource use and ecological impact. (Also offered as 42-200.) (3 lecture hours a week.)

## 67-205. Introductory Geographical Information Systems

This introductory course provides an overview of GIS applications, the fundamentals of GIS map projections, measurement levels for geographical data, data sources, data processing, data models, geographic data structures, and GIS editing functions and analysis; GIS project design and digital mapping fundamentals will also be introduced. Laboratory exercises will ficus on spatial data characteristics, raster and vector data structures, and digital map creation. This course is designed for students who intend to take only one GIS course. Those students who wish to take more than one course should take 67-210. (Antirequisite: 67-210) (2 lecture, 3 laboratory hours a week.)

## 67-210. Principles and Applications of Geographical Information Systems

This course emphasizes the principles, techniques, and applications of GIS. Lectures and laboratory exercises will focus on how to acquire, store, manipulate, and analyze spatial and non-spatial data. Data conversion, data reformatting, and data base development techniques will be explained. Students will create geographic coverages and learn techniques in the operation of a GIS by completing "hands-on" projects with modern GIS software. (It is recommended that students take $67-246$ before taking this course).(Students who have already taken 67-205 require consent of instructor). (2 lecture, 3 laboratory hours a week.)

## 67-220. Climatology

A study of the major climatic elements, with special emphasis on the radiation budget, energy systems, and the hydrological cycle of the earth and the human environment. Climate classification, climatic change, climatological techniques, and aspects of applied climatology also will be examined. (Prerequisites: 42-103 and 67-102.) (2 lecture, 2 laboratory hours a week.)

## 67-221. Geomorphology

The study of landforms; their origins, structures, extemal expressions, and spatial arrangement. (Prerequisites: 02-250 and

67-100, or consent of instructor.) (2 lecture, 2 laboratory hours a week.)

## 67-246. Introduction to Aerial Photography and Cartography

 Basic concepts involved in cartographictheory and design, including map projections, longitude, latitude and UTM grid systems, and thematic and topographic maps, and the fundamentals of aerial photographs and other remotely sensed data (visible spec. trum, infra-red and radar), satellite imageny, photogrammetry and photointerpretation. |2 lecture, 2 laboratory hours a week).
## 67-301. Field Techniques

The basic methods of analyzing the physial and cultural elements of the landscape. (Also offered as 42-301.) (Prerequisites: 02. 250, 42-103, 67-100, and 67-246, or consent of instructor.) (2 lecture hours, 1 laboratory hour a week; a one-week field program is also required.)

## 67-310. GIS Problem Solving and Spatial Modeling

This course will concentrate on the utilization of numerical, spatial, and digital elevation models, and integration of all GIS data, including those from air photographs, GPSteceivers, and remote sensing satellites. The application of spatial statistics and integration of models in a GIS will be explained Macro languages and spatial algorithms wil be utilized, and techniques for spatial modeling toward decision making will be applied. Exercises will provide "hands-on" experience in the use of GIS and models for problem solving in various disciplines. (Prerequisite: 67-210, or 67-205 in special cases with consent of instructor.) (2 lecture, 3 laboratory hours a week.)

## 67-320. Watershed Hydrology

Fundamental processes in physical hydrol ogy that control movement and storage of water within a watershed or catchment ba• sin . Components of the water balance (precipitation, interception, infiltration, evapotranspiration, runoff, storage) and their variations in space and time. Theoref cal and practical approaches to measurement and forecasting of components and their linkages. Special consideration of snowmelt, streamflow, wetlands, and hr-
man impacts. (Prerequisite: 61-141, or consent of instructor.) (2 lecture, 2 laboratory hours a week.)

## 67-332. Principles of Resource Management

Ecological theories and systems are examhed. The biogeochemical cycles, structure, function, energy components, productivity, successional development, and equilibrium conditions of ecosystems are analyzed. The impact of human activities on resources, conservation strategies, and techniques for rational resource exploitation are evaluated. (Prerequisite: 67-200 (or 42-200) or consent of instructor.) (3 lecture hours a week.)

## 67-334. Environmental Impact Assessment

This course provides an overview of the biogeophysical environment, and introduces peristametrics. The history, theories, and principles of Environmental Impact Assessment (EIA) will be examined and various methodologies for the preparation of an EIA report will be evaluated. Aspects of ethics, environmental laws, and administrative requirements for EIA studies in Canada are considered. EIA case studies are assessed and prepared. (Prerequisite: 67-332 or consent of instructor.) (3 lecture hours a week.)

## 67-351. Geography of Energy Resources

This course analyzes energy use from the concepts of thermodynamics, energy efficlency, economic progress, and environmental quality. The parameters governing the spatial and temporal flows of energy will be examined, and an appraisal will be given of the earth's energy resources, and projected demands for non-renewable energy resources. Altemative energy sources, models of energy systems, and energy policies of various governments will be considered. (3lecture hours a week.)

## 67-367. Soil Geography

Principles and techniques of assessing and analyzing the spatial variations of soil syslems. (Prerequisites: 02-250 and 67-221, or consent of instructor.) (2 lecture, 2 laboralory hours a week.)

## 67-370. Climate Change

A study of the causes of climate and climate change. Topics include the record of past climates, projection of future climate based on models incorporating anthropogenic factors, modification of local and regional climates, and the impact of these changes on the natural and human environment. (Prerequisite: 67-220 or consent of instructor.) (3 lecture hours a week.)

## 67-402. Remote Sensing

An integrated course dealing with contemporary principles and applications of aerospace remote sensing. Emphasis will be placed on scanning systems; multispectral sensors; the identification and interpretation of spectral signatures; how the imagery obtained by sensors is analyzed optically or digitally to yield earth resource information; and the manipulation and display of re-motely-sensed data. (Prerequisite: 67-302 or consent of instructor.) (2 lecture, 1.5 laboratory hours a week.)

## 67-410. GIS and Spatial Decision Support Systems

This course will examine and apply GIS as an analytical tool for effective decision making and efficient problem solving. Spatial data queries, data linkages, and knowledgebased systems will be discussed. The integration of a database sub-system, model base sub-system, and a spatial dialogue sub-system will be introduced. Each student will formulate and ope rationalize a major, independent project to demonstrate that GIS is a useful subset of a spatial decision support system, essential for problem solving. (Prerequisite: 67-310.) (2 lecture, 3 laboratory hours a week.)

## 67-443. Coastal Geomorphology

The processes and formation of coastlines and beaches. (Prerequisite: 67-100 or consent of instructor.) (2 lecture hours a week.)

## 67-453. Coastal Zone Management

An analysis of current problems and practices associated with the management of coastal zone resources including shoreline erosion control, shoreline land use management, pollution control, as well as shoreline reclamation. The emphasis in this course will be on the Great Lakes. (Prerequisites: 02-

250 and 67-100, or consent of instructor.) (2 lecture hours a week.)

For course descriptions in Human Geography, see 3.9.2.

### 4.7 Economics

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Phillips, William Gregory; B.A., M.A., Ph.D. (Toronto)-1950.
Strick, John Charles; B.A. (Manitoba), M.A. (Assumption), Ph.D. (Alberta)-1965.

## Professors

Fortune, J. Neill; B.Sc.A. (Toronto), M.A (Western Ontario), Ph.D. (Indiana)-1969.
Gencay, Ramazan; B.Sc. (Middle East Tech. U., Ankara), M.A. (Guelph), Ph.D. (Hous-ton)-1991.
Suh, Sang-Chul; B.A. (Korea), M.A. (Talwan), Ph.D. (Rochester)-1994.
Anglin, Paul; B.Sc. (Toronto), M.A., Ph.D. (Westem Ontario) 1988.

## Associate Professors

Kolinski, Ralph; B.S. (Marquette), M.A., Ph.D. (Wayne State)-1966.
Charette, Michael F.; B.A., M.A. (Windsor), Ph.D. (Western Ontario)-1976.
Bajic, Vladimir; B.A., M.A. (Belgrade), M.A (Williams College), Ph.D. (Toronto)-1984.
Meng, Ronald; B.Sc. (Trent), M.A., Ph.D. (Carleton)-1987.

## Assistant Professor

Yin, Xiaopeng; B.A. (Nanjing Agricultural U.), M.Sc. (McGill)-2001.

### 4.7.1 PROGRAMS OF STUDY

Only the basic program requirements are set out in this Calendar. All students majoringin economics should consult with an Econom: ics advisor and obtain a copy of Guide to Course Selection for Economics Majors which provides important additional informar tion. Copies may be obtained from the Ewnomics office.
The critical requirement for the four-yeal Economics Honours is the inclusion of Economics 41-110 and 41-111 in the first year of the program. Similarly Economics 41-221, 41-222, 41-231, and 41-232 should be included in the second year of the program.

### 4.7 Economics

Students intending to specialize in Economics in a four-year Honours program should satisfy the Mathematics requirements as early as possible in the program.

## Bachelor of Arts (Economics)

Total courses: thirty.
Major requirements: eleven courses, including 41-110, 41-111, 41-212, 41-221, and 41231; and six 200-, 300- or 400-level courses, excluding 41-280, 41-283, and 41-284. (With the approval of a program advisor, equivalent statistics courses may be substituted for 41-212.)
Other requirements:
(a) 02-250, 65-205 or 73-105;
(b) eight courses from outside Social Sciences (see 2.4.14) with at least two from Arts/Languages and two from Sciences;
(c) four courses from any area of study including Economics;
(d) six courses from any area of study excluding Economics.

Bachelor of Arts (Honours Economics) Total courses: forty.
Major requirements: twenty-three courses, including 41-110, 41-111, 41-212 (or 65251), 41-221, 41-222, 41-231, 41-232, 41313, 41-314, 41-323, 41-333, 41-424, 41-434, and ten additional courses, at least six of which must be at the 300 or 400 level. (Major students considering graduate studles in economics are advised to select both $65-250$ and $65-251$. Students should consult a program advisor to determine which courses are most appropriate.)
Other requirements:
(a) 62-140, 62-141, and either 65-205 or 65-250. (Mathematics 62-120 is highly recommended and is a prerequisite for fourth-year Econometrics 41-413/414.)
(b) fourteen courses from any area of study, excluding Economics.

Note: Given the important role mathematics and statistics play in economics, selection of particular Mathematics and Statistics
courses should depend upon both the student's educational and career objectives and his or her strength in mathematics. In order to avoid later problems students should consult the Guide to Course Selection referred to above. Early discussion with an advisor designated to assist students with course selections in this area is strongly advised.

## Bachelor of Arts

 (Combined Honours Programs)Total courses: forty.
Major requirements-Economics: fifteen Economics courses including 41-110, 41-111, 41-212, 41-221, 41-222, 41-231, 41-232, and eight additional 300 - or 400 -level Economics courses.

Major requirements-Other Subject: as prescribed by that area of study.
Other requirements: 65-205 (or an equivalent), plus additional options to a total of forty.

## Economics Minor

A minor shall consist of 41-110, 41-111, 41221, 41-231, and two additional Economics courses. An average of C- or better is required in the six courses.

### 4.7.2 COURSE DESCRIPTIONS

All courses listed will not necessarily be offered each year. All courses are one-term courses and are offered three hours a week unless otherwise indicated.

## 41-110. Introduction to Economics I

An introduction to microeconomics intended to provide students with the tools necessary to begin to understand and evaluate how resources are allocated in a market economy. Specific topics include how markets function, theories of the business firm, of consumer behaviour and of income distribution. The economic roles of labour unions and government are also covered. The theories are applied to contemporary Canadian economic problems.

## 41-111. Introduction to Economics II

Building upon microeconomics (41-110), this course is an introduction to macroeconomics. The emphasis is upon measuring

### 4.7 Economics

and explaining what determines economic aggregates such as the total national product (GDP) and the level of prices and employment. The role of money and financial institutions, the impact of international trade and the policy options available to governments for coping with inflation and unemployment are discussed in detail. (Prerequisite: 41-110.)

## 41-117. Introductory Economics: Theory, Practice and Policy

Selected topics in micro- and macroeconomics, with emphasis on practical applications, problems, and public policy. This course is designed primarily for Engineering students. (Prerequisites: Mathematics 62140 and 62-141, or equivalent.) (3 lecture hours, 1 tutorial hour a week.) (Students who have taken 41-117 may not obtain credit in $41-110$, but may take $41-111$ with permission of an advisor in Economics.)

## 41-212. Intermediate Statistical Methods

An application of statistical methods to economic theory. (Prerequisite: one of 02-250, 65-250, 65-205, or 73-105.) (Credit will not be given for more than one of 41-212, 65251 , or any equivalent intermediate statistics course from another area.)
41-221. Intermediate Microeconomics I
The theory of markets, the theory of consumer behaviour and demand; the firm, production, cost, and supply. (Prerequisite: 41-110.)
41-222. Intermediate Microeconomics II Extensions of the theory of consumer and firm behaviour; pricing under different market structures; distribution; general equilibrium and economic welfare. (Prerequisite: 41-221.)

## 41-230. Economics Analysis of Law

The application of microeconomic principles to the study of property, contract, and tort law. The economic principles underlying property rights, torts, and contracts are surveyed. Selected problems in property, tort, and contract law are considered. Additional topics from other areas of law may be included. (Prerequisite: 41-110.)

41-231. Intermediate Macroeconomics A theoretical and policy oriented treatmentof the determination of employment, output, in. terest rates, and the price level; stabilization policies and their effectiveness. (Prerequisites: 41-110 and 41-111.)
41-232. Intermediate Macroeconomics |l Effectiveness of stabilization policies in open economies; causes and cures of inflation; simple growth models. (Prerequisite: 41 231.)

## 41-240. The Economics of Legal Procedures, Crime, and Punishment

The application of microeconomic principles in the analysis of legal procedures, crime, and punishment. Economic models of fling suit, bargaining, and going to trial will be dis: cussed. Traditional and economic models of criminal activity will be compared and contrasted, along with the economics of civiland criminal punishment. Additional topics from other areas of law may be included. (Prerequisite: 41-110.)

## 41-263. Economic History of Canada

 (Prerequisites: 41-110 and 41-111.)
## 41-266. Selected Topics in Economic History <br> (Prerequisites: 41-110 and 41-111.)

41-268. Selected Current Economic
Problems and Policies in the
Canadian Economy
(Prerequisites: 41-110 and 41-111.)
41-280. Economics of Communications The economic structure and operation of the communications industry with emphasis on telecommunications, television and film. (Also offered as Communication Studies 40 280.) (Prerequisite: 41-110.)

## 41-283. Canadian Public Finance

Government finance in Canada at the federal, provincial and municipal levels of government; includes govemment expenditure, taxation, budgeting, public sector development. (Prerequisite: 41-110.) (Credit may not be obtained for both 41-283 and 41 385.)

## 41-284. Government Fiscal Policy and Financial Affairs

Govermment expenditure and revenue polides for economic stabilization and growth, intergovemmental financial relations, with emphasis on the Canadian setting. (Prerequisiles: 41-110 and 41-111.) (Credit may not be obtained for both 41-284 and 41-386.)
41.303. Mathematical Economics: Linear Models
Input-output analysis and other linear economic models. (Prerequisites: 41-221, 41231, and 62-120, or consent of the instructor.)
41.313. Introduction to Econometric Methods I
Development of the classical regression model and problems associated with this model such as multicollinearity, heteroscedasticity, and autocorrelation. (Some familiarity with linear algebra and calculus will be beneficial.) (Prerequisites: 02-250 or 65205, and 41-212.)

### 41.314. Introduction to Econometric Methods II

Acontinuation of 41-313. (Prerequisite: 41-313.)

41-321. Corporation Finance and Investments I
(a) The promotion and financing of business enterprises, financial controls and dividend policies; (b) the principles of investments, indvidual and institutional; social importance. Prerequisite: 41-221 or consent of instruclor.) (Not open to students in the Odette School of Business Administration, nor to those who have taken equivalent Business courses.)
41-322. Corporation Finance and Investments II
Acontinuation of 41-321. (Prerequisite: 41-321.)
41-323. Advanced Microeconomics I
The use of mathematical techniques and economic analysis with special emphasis on consumer theory, producer theory, and theon of markets. (Prerequisites: 41-221, 41222, 62-140, and 62-141 or consent of instructor.)

41-333. Advanced Macroeconomics I
Modern interpretations of macroeconomics, including inflation, unemployment, and policy implications. (Prerequisites: 41-231, 41232, 62-140, and 62-141, or consent of instructor.)

## 41-335. Money and Banking

The banking system and other financial institutions; money demand and money supply; money and the level of economic activity; money and inflation; issues in monetary policy. (Prerequisite: 41-231.)

## 41-341. Economic Growth and Development Theory

Modern theories of growth and development with emphasis upon less developed countries. (Prerequisites: 41-221 and 41-231, or consent of instructor.)
41-342. Economic Growth and Development Policy
Policy oriented application of economic theory to problems of developing countries. (Prerequisite: 41-341.)

## 41-350. Labour Theory

Wage theories, wage structure, unemployment, labour supply and related topics. (Prerequisite: 41-221.)

## 41-353. Labour Institutions

Canadian and American labour movements, collective bargaining, union philosophy and labour legislation in Canada and the United States. (Prerequisite: 41-221 or consent of instructor.)

## 41-373. International Economics: Trade Theory and Policy

A survey of traditional and contemporary theories of international trade and trade policy. (Prerequisite: 41-221.)

## 41-374. International Economics: <br> Exchange Rates and Balance of Payments

Theory of exchange rate determination and balance of payments adjustment; macroeconomic policy in an open economy; current problems of the international monetary system. (Prerequisite: 41-231.)

### 4.7 Economics

## 41-385. Public Sector Economics: Expenditure

Theory of the role of govemment in the economy; public expenditure theories and practice; public choice and government decision-making; government grants. (Prerequisites: 41-221 and 41-222.)

## 41-386. Public Sector Economics: Finance

Government taxation, user charges, borrowing, and the public debt in theory and practice; use of taxation as fiscal policy; and intergovernmental tax relations. (Prerequisites: 41-221 and 41-222.)

## 41-387. The Economics of Government Regulation

Economic theory and practice of government regulation, with emphasis on the regulation of public utility industries. Includes examination of goals and procedures of regulation; regulation of pricing, entry, rate of return, etc. (Prerequisites: 41-221 and 41222.)

## 41-390. Comparative Economic Systems

The organization, operation and performance of economic systems in theory and practice. (Prerequisites: 41-221 and 41-231, or consent of instructor.)

## 41-406. Mathematical Economics

Various topics, such as general equilibrium theory, dynamic analysis, oligopoly, behaviour under uncertainty, and growth theory. (Prerequisites: 41-222, 41-232, 62-140, and 62-141.)

## 41-413. Advanced Econometrics I

Further development of the classical regression model. Topics covered include simulta-neous-equations systems and methods for estimating such systems, including generalized least squares and two-stage least squares and three-stage least squares. (Prerequisites: 41-313 and 41-314, or consent of instructor.)

## 41-414. Advanced Econometrics II

A continuation of Economics 41-413. (Prerequisite: 41-413 or consent of instructor.)

41-416. Economic Research in Regional Problems
Theoretical development and empirical int plementation of interregional income deler. mination systems; regional input-outpu models; growth models. (Prerequisite:cor sent of instructor.)

## 41-417. Economic Research in Urban Problems

Spatial structure of urban areas; urban res: dential equilibrium and growth; central plass theory; the local public sector. (Prerequistes consent of instructor.)
41-420. Industrial Organization Theory A theoretical analysis of firms' behaviourin many different markets. (Prerequisites: 4. 221 and 41-222.)
41-421. Industrial Organization Policy A survey and evaluation of anti-combines legislation and enforcement in Canada Comparisons with Great Britain and United States. (Prerequisite: 41-420.)
41-424. Advanced Microeconomics II
Selected topics in microeconomic theory (Prerequisite: 41-323.)
41-434. Advanced Macroeconomics Il Selected topics in macroeconomic theory (Prerequisite: 41-333.)
41-440. Selected Topics in International and Development Economics (Prerequisite: consent of instructor.)
41-450. Advanced Labour Theory
Macroeconomic topics in labour theory (Prerequisites: 41-221, 41-222, 41-231, amb 41-232.)
41-453. Comparative Labour Institutions Foreign labour movements, intemationalkbour organizations, and other related topics (Prerequisite: 41-353 or consent of instrou tor.)
41-461. History of Economic Theoryl An examination of the development of ewr nomic theory in the works of the classical economists, Adam Smith, David Ricarto and John Stuart Mill. (Prerequisites: 41.221 and 41-231.)
41462. History of Economic Theory II An examination of the development of economic theory in the late nineteenth and the wentieth centuries. (Prerequisite: 41-461.)
41-499. Selected Topics in Economics (May be repeated for credit with consent of an advisor in Economics.) (Prerequisite: consent of the instructor.)

### 4.8 Mathematics and Statistics

For further information, see our World Wide Web page:
http://www.cs.uwindsor.ca/units/math
OFFICERS OF INSTRUCTION
Professors Emeriti
Duggal, Krishan L.; B.A. (Panjab), M.A. (Agra), M.Sc., Ph.D. (Windsor)-1968.
Smith, Alexander Cormac; B.Sc., M.Sc., Ph.D. (Dublin)-1963.
Wigley, Neil M.; B.A., Ph.D. (California)1970.

Chandna, Om Parkash; B.A. (Panjab), M.A. (Delhi), M.Sc., Ph.D. (Windsor)-1968.

## Professors

McDonald, James F.; B.S., Ph.D. (Wayne State)-1967.
Kaloni, Purna N.; M.Sc. (Allahabad), M. Tech., Ph.D. (Indian Inst. of Tech.)-1970.
Lemire, Francis William; B.Sc. (Windsor), M.Sc., Ph.D. (Queen's)-1970.

Britten, Daniel J.; B.A. (Merrimack College), M.S., Ph.D. (lowa)-1971.

Wong, Chi Song; B.S. (National Taiwan U.), M.S. (Oregon), M.S., Ph.D. (Illinois-Ur-bana)-1971.
Barron, Ronald Michael; B.A., M.Sc. (Windsor), M.S. (Stanford), Ph.D. (Carleton)1975.

Fung, Karen Yuen; B.A., M.S., Ph.D. (UCLA)-1976.
Paul, Sudhir R.; B.Sc., M.Sc. (Dacca), Ph.D. (Wales)-1982.
Caron, Richard J.; B.M., M.M., Ph.D. (Wa-terloo)-1983. (Dean of the Faculty of Science)
Zamani, Nader G.; B.Sc. (Case Western), M.Sc., Ph.D. (Brown)-1986.

## Associate Professors

Atkinson, Harold R.; B.A. (Western Ontario), M.Sc. (Assumption), Ph.D. (Queen's)1964.

### 4.8 Mathematics and Statistics

Manley, Paul L.; B.Sc., M.Sc. (Alberta)1967.

Gold, Alan John; B.A. (Windsor),
Dip. D'Etudes, Doct. de Spec. (Clermont)1969.

Traynor, Tim Eden; B.A., M.A. (Saskatchewan), Ph.D. (British Columbia)-1971.
Hlynka, Myron; B.Sc. (Manitoba), M.A., Ph.D. (Pennsylvania State)-1986.
Hu, Zhiguo; B.Sc., M.Sc. (Northeast), Ph.D. (Alberta)-1993.

## Adjunct Professors

Fleisher, Isidore; B.Sc. (Brooklyn), M.Sc., Ph.D. (Chicago)-1985.
Lev, Benjamin; B.Sc., M.Sc. (Technion), Ph.D. (Case Western)-2000.

## Adjunct Associate Professor

Stanford, David; B.Sc. (Concordia), M.Eng., Ph.D. (Carleton)-2000.

## Cross-Appointments

Brill, Percy; B.Sc. (Carleton), M.A. (Columbia), Ph.D. (Toronto)-1984.
Gencay, Ramazan; B.Sc. (Middle East Tech. U., Ankara), M.A. (Guelph), Ph.D. (Hous-ton)-1991.
Alfa, Attahiru S.; B.Eng. (Ahmadu Bello U.), M.Sc. (Manitoba), Ph.D. (New South Wales), P.Eng.-2000. (Associate VicePresident, Research)

### 4.8.1 PROGRAMS OF STUDY

Students are reminded that, as indicated in the course descriptions, certain Mathematics and Statistics courses may not be available for credit in some or all of the degree programs outlined below.
All programs in Mathematics are subject to the general University and Faculty of Science regulations as outlined in the relevant sections of this calendar. Additionally, Mathematics majors must obtain a grade of C- or better in each Mathematics or Statistics course which is explicitly required in their program of registration. Students registered in the combined Mathematics and Computer Science Honours program also must obtain
a grade of at least C - in all required Computer Science courses.

## Bachelor of Mathematics (General)

Total courses: thirty.
Major requirements: thirteen courses, including 62-120, 62-140, 62-141, 62-190,62. 215, 62-216, 62-318, 65-250 and 65-251; plus four other courses at the 200 level or above.
Other requirements:
(a) 60-140 and 60-141;
(b) four courses from the Faculty of Arts and Social Sciences;
(c) three courses from any area of study, including Mathematics and Statistics;
(d) eight courses from any area of study, excluding Mathematics and Statistics.

## Bachelor of Mathematics (Honours)

Total courses: forty.
Major requirements: twenty-two courses, consisting of 62-120, 62-140, 62-141,62190, 62-215, 62-216, 62-220, 62-221, 62 314, 62-315, 62-318, 62-321, 65-250, $65-251$; plus eight more courses ( 62 - or 65 )at the 300 level or above.
Other requirements: 60-140 and 60-141; and sixteen courses from any area of study. Note: Students who include in their majorrequirements 65-350, 65-351 and two other Statistics courses (65-) numbered 300 od higher will receive the degree Bachelor of Mathematics (Honours Mathematics and Statistics).

## SUGGESTED COURSES

FOR MATHEMATICS SPECIALIZATIONS
Pure Mathematics: 60-231, 62-322, 62-332, 62-361, 62-410, 62-411, 62-420, 62-421, 62-422, 65-442, and 65-443.
Statistics: 60-231, 65-340, 65-350, 65-351, 62-410, 65-442, 65-444, 65-450, and 65451.

Applied Mathematics: 60-231, 62-332,62. 360, 62-361, 62-374, 62-380, 62-460, 62. $461,62-470,62-471,62-472,62-480$ $62-481,64-140,64-141,64-151,64-220$,

### 4.8 Mathematics and Statistics

64-250, 64-321, 64-322, 64-350, 64-351, 64-420, 64-421, 64-450, 64-451, and 65376.

Actuanial: 62-392, 62-374, 62-380, 62-480, 62-481, 62-490, 62-492, 65-350, 65-351, 65-376, 65-452, 65-454, 70-151, 70-152, 71-140, 72-171, 72-271, 72-374, 72-376, and 72-377.
Bachelor of Operations Research (Honours Co-operative Education Program)
Total courses: forty-four.
Major requirements: thirty-seven courses, consisting of:
(a) Mathematics: 62-120, 62-140, 62141, 62-190, 62-215, 62-216, 62220, 62-221, 62-314, 62-374, 62-482;
(b) Statistics: 65-250, 65-251, 65-350,65-351, 65-376, 65-456;
(c) Computer Science: 60-140, 60141;
(d) Economics: 41-110, 41-111, 41221, 41-231;
(e) Industrial and Manufacturing Systems Engineering: 91-322, 91 327, 91-400, 91-412, 91-413, 91-429;
(f) Business Administration: 70-151, 70-152, 70-256, 73-305, 73-331;
(g) and either Mathematics 62-380 or General Engineering 85-211.

Other requirements:
(a) three electives from any academic area.
(b) four work term placements: 62188, 62-288, 62-388, 62-488.

## Bachelor of Mathematics (Honours Mathematics and Computer Science)

Total courses: forty.
Majorrequirements-Mathematics and Staistics: sixteen courses, consisting of 62120, 62-140, 62-141, 62-190, 62-215, 62-216, 62-220, 62-221, 62-314, 62-315, $62-318,62-321,65-250,65-251$; plus two courses (62- or $65-$ ) numbered 300 or higher.

Major requirements-Computer Science: thirteen courses, consisting of 60-100, 60140, 60-141, 60-212, 60-214, 60-231, 60254, 60-255, 60-265, and 60-315; plus three additional courses (60-) at the 300 level or above.

Additional Major requirements: four further Mathematics, Statistics, or Computer Science courses at the 200 level or above, excluding 60-205, 60-206 and 65-205.
Other requirements: seven courses from any area of study.

## Other Combined Honours Programs

Honours programs combining Mathematics with a second Honours area of study (other than Computer Science) will consist of:

Total courses: forty.
Major requirements-Mathematics and Statistics: sixteen courses, including 62-120, 62-140, 62-141, 62-190, 62-215, 62-216, 62-220, 62-221, 62-314, 62-315, 62-318, 62-321, 65-250, 65-251; plus two additional courses (62- or 65-) at the 300 level or above.

Major requirements-Other Subject: as prescribed by that area of study.
Other requirements:
(a) 60-140 and 60-141;
(b) any additional, non-major requirements as determined by the second area of study;
(c) additional courses, if necessary, from any area of study to a total of forty courses.

## Minor in Mathematics

A minor in Mathematics consists of at least six courses taken from Mathematics and Statistics, with a minimum average of 5.0 , including 62-120, 62-140 and 62-141. The remaining three or more courses must be chosen among 62-190 and courses in Mathematics and/or Statistics numbered 200 or higher.

### 4.8.2 COURSE DESCRIPTIONSMATHEMATICS

All courses listed will not necessarily be offered each year.

## 62-120. Linear Algebra I

Linear systems, matrix algebra, determinants, vectors in $\mathrm{R}^{n}$, dot product, orthogonalization, eigenvalues, and diagonalization. (Prerequisite: OAC Algebra and Geometry or equivalent.) (Antirequisite: 62-126.) (3 lecture hours, 1 tutorial hour a week.)

## 62-126. Linear Algebra (Engineering)

Linear systems, matrix algebra, determinants, vectors in $R^{n}$, dot product, orthogonalization, and eigenvalues. (Prerequisite: OAC Algebra and Geometry, or equivalent.) (Antirequisite: 62-120.) (3 lectures hours, 1 tutorial hour a week.)

## 62-130. Elements of Calculus

Review of differentiation, exponential functions, and indefinite integrals. Methods of integration, differential equations, partial derivatives. A variety of applications. (Prerequisite: OAC Calculus.) (May not be taken for credit concurrently with, or subsequent to having obtained credit in 62-140. This course is not a sufficient prerequisite to $62-$ 141, but may serve as preparation for 62 140.) (3 lecture hours, 1 tutorial hour a week.)

## 62-140. Calculus A

Limits and continuity; differential calculus with applications, extending OAC Calculus; related rates, differentials. Mean Value Theorem. Antiderivatives, Riemann sums and the definite integral. Fundamental Theorem of Calculus. Selected integration techniques. Selected applications of the definite integral. (Prerequisite: OAC Calculus, or equivalent.) ( 3 lecture hours, 1 tutorial hour a week.)

## 62-141. Calculus B

Indeterminate forms and l'Hopital's Rule. Further techniques of integration. Improper integrals, numerical integration. Separable differential equations. Further applications of definite integrals. Polar and parametric co-ordinates. Infinite sequences and series:
tests for convergence, power series (Taylor Maclaurin, binomial). (Prerequisite: 62-140) (3 lecture hours, 1 tutorial hour a week.)

## 62-188. Work Term I

62-190. Mathematical Foundations
Logic, sets, relations, functions. Develop. ment of skills in theoretical mathematics. (Prerequisite: 60-100 or 62-120.) (2 lecture, 2 tutorial hours a week.)

## 62-194. Mathematics for Business

Mathematics of finance. Solutions of linear equations, matrices, linear inequalities, simplex method for linear programming. Probability theory. (This course is intended for students in the Odette School of Business Administration.) (Prerequisite: Any OAC Mathematics course.) (3 lecture hours, 1 tutorial hour a week.)

## 62-198. Ideas in Mathematics

Intended for students outside of Mathemalics and Science. Selected topics from algebra, analysis, geometry, probability, and statistics. (Not available for credit for students in the Faculty of Science.) (3 lecture hours, 1 tutorial hour a week.)

## 62-215. Vector Calculus

Quadric surfaces. Vector differential calculus. Multiple integration. Line and surface integrals. (Prerequisites: 62-141, and 62-120 or 62-126.) (3 lecture hours, 1 tutorial hour a week.)

## 62-216. Differential Equations

Differential equations and Laplace transforms. Series solution of differential equations. Applications to science and engineering. (Prerequisites: 62-141, and 62120 or 62-126.) ( 3 lecture hours, 1 tutorial hour a week.)

## 62-220. Linear Algebra II

Rigourous study of the following topics: linear systems, vector spaces, linear transformations, projections, pseudo-inverses, determinants, inner product spaces and applications. (Prerequisites: 62-190 and 62120.) (3 lecture hours, 1 tutorial hour a week.)

## 62-221. Linear Algebra III

A rigourous treatment of eigenvalues and eigenvectors, diagonalization, similarity

### 4.8 Mathematics and Statistics

problem and canonical form for real and complex matrices; positive definite matrices; computational methods for approximating solutions to systems of linear equations and eigenvalues. (Prerequisite: 62-220.) (3 lecture hours, 1 tutorial hour a week.)

## 62-288. Work Term II

## 62-314. Introduction to Analysis I

Real numbers. Limits, sequences, and continuity. Differentiation. (Prerequisites: 62120, 62-141, and 62-190.) (3 lecture hours, 1 tutorial hour a week.)

## 62-315. Introduction to Analysis II

Sequences and series of functions. Uniform and absolute convergence. Power Series. Integration. (Prerequisite: 62-314.) (3 lecture hours, 1 tutorial hour a week.)

## 62-318. Complex Variables

Complex numbers. Analytic functions. Contour integration. Series, Laurent expansions, residues. Application to real integrals. (Prerequisite: 62-215; corequisite: 62-216.) (3lecture hours, 1 tutorial hour per week.)

## 62-321. Abstract Algebra

Introduction to groups, rings, and fields. (Prerequisite: 62-220 or 62-322.) (3 lecture hours a week.)

### 62.322. Number Theory

Divisibility, congruences, numerical functions. Theorems of Euler, Fermat, and Wilson. Theory of primes and quadratic residues. (Prerequisites: 62-120 and 62190.) (3 lecture hours a week.)

## 62-324. Applied Algebra

Coding theory in cryptography and informatics; combinatorial designs and finite geometrics. (Prerequisite: 62-222; 62-321 is recommended.) (3 lecture hours a week.)

## 62-332. Tensor Analysis

Tensor algebra. Covariant differentiation. Tensor form of gradient, divergence, and curl. Riemann-Christoffel symbols. Curvature tensor. Applications. (Prerequisites: 62215 and 62-216.) ( 3 lecture hours a week.)

## 62-338. Differential Geometry

Regular curves. Curvature, torsion, and Frenet equations. Surfaces, tangent planes, andnormal vectors. Distance element. Classification of elliptic, hyperbolic, parabolic,
and Euclidean surfaces. (Prerequisite: 62215.) (3 lecture hours a week.)

## 62-342. Combinatorics

Finite combinatorics; counting problems involving set operations, relations and functions; principle of inclusion and exclusion; ordinary and exponential generating functions; recurrence relations. (Prerequisites: 62-141 and 62-190.) (3 lecture hours a week.)

## 62-360. Special Functions

Uniform convergence, Fourier Series, Orthonormal bases, Sturm-Liouville eigenvalue problems, eigenfunction expansions, Gamma function, Bessel functions, Legendre polynomials and functions, and the hypergeometric functions. (Prerequisite: 62-215 and 62-216.) (3 lecture hours a week.)

## 62-361. Dynamical Systems

An introduction to simple dynamical systems, both discrete and continuous. Longterm behaviour of such systems. Stability, periodicity, and chaos. A brief treatment of fractals. (Prerequisite: 62-120 and 62-216.) (3 lecture hours a week.)

## 62-374. Linear Programming

Topics covered are: geometric linear programming, the Simplex method, the revised Simplex method, duality theory, sensitivity analysis, project planning and integer programming. Optional topics include: the transportation problem, the upper bounding technique, the dual Simplex method, parametric linear programming, game theory, and goal planning. Completion of some assignments will require the use of computer software packages. This course is intended to help students prepare for some parts of the Sociely of Actuaries examination on Operations Research (Course 130). Interested students should also take 65-376. (Prerequisite: 62-220 or consent of instructor.) (Antirequisite: 91-312.) (3 lecture hours a week.)

## 62-380. Numerical Methods

Topics covered are: nonlinear equations in one variable, interpolation, numerical integration (quadrature), and linear systems (direct methods). Optional topics are:

### 4.8 Mathematics and Statistics

numerical differentiation, iterative methods for boundary value problems. Completion of some assignments will require the use of computer softwa re packages. This course is intended to help students prepare for some parts of the Society of Actuaries examination on Numerical Methods (Course 135). (Prerequisites: 62-215, 62-216, and 62-120 or 62-126.) (May not be taken for credit after 62-481.) (3 lecture hours a week.)

## 62-388. Work Term III

## 62-392. Theory of Interest

Measurement of interest, elementary and general annuities, amortization schedules and sinking funds, bonds, depreciation, depletion, and capitalized cost. This course helps prepare students for the Society of Actuaries examinations. (Prerequisite: 62-141 or consent of instructor.) (3 lecture hours a week.)

## 62-410. Real Analysis I

Lebesgue measure and Lebesgue integral. Differentiation and integration. Radon-Nikodym theorem. (Prerequisite: 62-315.) (3 lecture hours a week.)

## 62-411. Real Analysis II

Metric spaces. Topological spaces. StoneWeierstrass and Ascoli theorems. Classical Banach spaces. (Prerequisite: 62-410.) (3 lecture hours a week.)

## 62-420. Introduction to Group Theory

Abstract groups, subgroups, isomorphism theorems, orbits, class equation, quotient groups, Sylow's theorems, metric vector spaces, quadratic forms, basic concepts of orthogonal geometry, the classical groups. (Prerequisites: 62-221 and 62-321.) (3 lecture hours a week.)

## 62-421. Introduction to Ring Theory

Matrix rings, polynomial rings, fields of fractions, principal ideal domains and Euclidean domains, finitely generated modules over a p.i.d. (Prerequisites: 62-221 and 62-321.) (3 lecture hours a week.)

## 62-422. Introduction to Field Theory

 Polynomial rings, splitting fields, The Fundamental Theorem of Galois Theory, Galois' criterion for solvability by radicals, algebraically closed fields, finite fields. (Prereq-uisites: 62-221 and 62-321.) (3 lecture hours a week.)
62-460. Applied Mathematics Methods। General basic concepts for linear partial differential equations. Classification of secondorder equations and canonical forms. An introduction to theory of distribution. SturmLiouville theory for ODEs. Fourier series and integral transforms with applications to PDEs. (Prerequisites: 62-318 and 62-360.) (3 lecture hours a week.)
62-461. Applied Mathematics Methods II Qualitative and quantitative analysis of hy. perbolic, parabolic, and elliptic partial difterential equations. (Prerequisite: 62-460) (3 lecture hours a week.)
62-470. Fluid Dynamics I
Kinematics, stress hypothesis, constitutive equations, equations of motion. Ideal fluid flow in two and three dimensions. Introduction to potential theory and use of complex variable theory. Effects of viscosity and compressibility. Introduction to computational problems in two-dimensions. (Prerequisites: 62-215, 62-216, and 62-318)

## 62-471. Fluid Dynamics II

Navier-Stokes equations for viscous incompressible flows, exact solutions, boundary layer theory, and asymptotic methods. Compressible inviscid flows, one-dimensional unsteady flows, two-dimensional irrotational flows, method of characteristics. Introduction to shock waves. (Prerequisite: 62-470.) (3 lecture hours a week.)

## 62-472. Solid Mechanics

Theory of mechanics of solid continuum, including elasticity, plasticity, and viscoelastioity. (Prerequisites: 62-215, 62-216 and 62-318) (3 lecture hours a week.)

## 62-480. Numerical Linear Algebra

Topics include: floating point arithmetic, matrix factorizations, condition number of matrices, iterative methods, eigenproblems, singular value decomposition. Completion of some assignments will require computer programming and/or the use of major software packages. (Prerequisites: 62-221 and 60-141.) (3 lecture hours a week.)

### 4.8 Mathematics and Statistics

## 62481. Numerical Analysis

Topies include: floating point arithmetic, soUtion of nonlinear algebraic equations, polynomial and spline interpolation, functional spproximation, numerical differentiation and inlegration, numerical solution of ordinary dillerential equations, unconstrained minimeation. Completion of some assignments wil require computer programming and/or the use of major software packages. (Prerequisites: 62-216 and 62-480.) (3 lecture nours a week.)

## Q2482. Mathematical Programming

Topics include: unconstrained optimization, convexity, least squares problems, optimaldyconditions, penalty methods. Completion d some assignments will require the use of computer software packages. (Prerequsites: 62-215, 62-314, 62-221, and one of 62-374, 62-380, or 65-376.) (3 lecture hours aweek.)

## 62488. Work Term IV

62-490. Actuarial Mathematics I
Life contingencies. Survival distributions and life tables, life insurance, life annuities, net premiums, net premium reserves. This wurse helps prepare students for the Socidy of Actuaries examinations. (Prereqvisites: 62-215, 620216, 62-392, and $65-251$, or consent of instructor.) ( 3 lecture mours a week.)

## 62-492. Actuarial Mathematics II

Selection of topics from: advanced life confingencies, risk theory, survival models, constuction and graduation of mortality tables. This course helps prepare students for the Society of Actuaries examinations. (Prereqvisite: 62-490 or consent of instructor.) (3 lecture hours a week.)

## 62-498. Topics in Mathematics

Advanced topics not covered in other courses. (May be repeated for credit when the lopic is different.) (Prerequisite: consent of the instructor.) (3 lecture hours a week.)

### 4.8.3 COURSE DESCRIPTIONSSTATISTICS

Undergraduate Statistics courses taught outside Mathematics and Statistics may not
be taken for credit in any mathematics program.

## 65-205. Statistics for the Sciences

Descriptive statistics. Probability, discrete and continuous distributions. Point and interval estimation. Hypothesis testing. Good-ness-of-fit. Contingency tables. (Prerequisite: Grade 12 Advanced Leve! Mathematics or OAC Finite Mathematics.) (Antirequisites: 02-250, 73-105, 73-205, and 85-222.) (May not be taken for credit after taking 65-250 or 65-251.) (3 lecture hours, 1 tutorial hour a week.)

## 65-250. Introduction to Probability

Descriptive measures, combinatorics, probability, random variables, special discrete and continuous distributions, sampling distribution, point and interval estimation. (Prerequisite: 62-141.) (3 lecture hours, 1 tutorial hour a week.)

## 65-251. Introduction to Statistics

Distributions, point and interval estimation, hypothesis testing, contingency tables, analysis of variance, bivariate distributions, regression and correlation, non-parametric methods. (Prerequisite: 65-250.) (3 lecture hours, 1 tutorial hour a week.)

## 65-340. Applied Probability

Conditional probabilities and expectations. Markov chains. Poisson processes, renewal theory, reliability, queueing theory. (Prerequisites: 65-251, 62-215 and 62-216.) (3 lecture hours a week.)

## 65-350. Probability

Axioms of theory of probability. Discrete and continuous distributions including binomial, Poisson, exponential, normal chi-square, gamma, t , and F distributions. Multivariate distributions, conditional distributions, independence, expectation, moment generating functions, characteristic functions, transformation of random variables, order statistics, law of large numbers, central limit theorem. (Prerequisite: 65-251.) (3 lecture hours a week.)

## 65-351. Statistics

Point and interval estimations, properties of estimators, methods of estimation, least squares estimation and linear models, Bayesian estimation, Rao-Blackwell theo-

### 4.8 Mathematics and Statistics

rem, tests of hypotheses, Neyman-Pearson Lemma, analysis of variance. (Prerequisite: 65-350.) (3 lecture hours a week.)
65-376. Stochastic Operations Research Topics covered are: deterministic and stochastic dynamic programming, queuing theory, decision analysis, and simulation. Optional topics include: inventory theory, forecasting, and Markov processes. Completion of some assignments will require the use of computer software packages. This course is intended to help students prepare for some parts of the Society of Actuaries examination on Operations Research (Course 130). Interested students should also take 62-374. (Prerequisite: 65-205 or 65-250.) (Antirequisite: 91-412.) (3 lecture hours a week.)

## 65-442. Probability Theory I

Random variables, expectation, independence, zero-one law, convergence of random variables, laws of large numbers, central limit theorem. (Prerequisite: 62-315 or consent of instructor.) (3 lecture hours a week.)

## 65-443. Probability Theory II

Conditioning, introduction to stochastic processes, discrete and continuous time Markov Chains. (Prerequisite: 65-442.) (3 lecture hours a week.)

## 65-450. Distribution Theory

Random vectors and their distributions. Multi-variate normal distribution. Regression and correlation in $n$ variables. Sample moments and their functions. Sampling dis-tributions-exact and asymptotic. Selected topics from: distributions of quadratic forms, order statistics, exponential families. (Prerequisite: 65-351.) (3 lecture hours a week.)

## 65-451. Statistical Inference

Theory of estimation. Testing of hypotheses. Optimal tests. Estimation and tests in linear models. Selected topics from sequential procedures, nonparametric models, decision theory, Bayesian inference. (Prerequisite: 65-351.) (3 lecture hours a week.)

## 65-452. Experimental Designs

ANOVA models without and with interacfions; randomized block, Latin square, factorial, confounded factorial, balanced
incomplete block, and other designs, is sponse surface methodology. (Prerequisis: 65-251 or 65-350.) (3 lecture hours a week)

## 65-454. Sampling Theory

Basic concepts. Simple random and stratfied sampling. Ratio and regression mettods. Systematic and cluster sampling. Multi-stage sampling, PPS sampling, Erous in surveys. Sampling methods in social in vestigation. (Prerequisite: 65-251 or 65 350.) (3 lecture hours a week.)

## 65-455. Topics in Statistics

Advanced topics in probability or statisisis not covered in other courses. (May be lepeated for credit when the topic is different) (Prerequisite: consent of the instructor) (3 lecture hours a week.)

## 65-456. Regression

An applied course covering multiple lineat regression, model assumptions, inference about regression parameters, residua analysis, polynomial regression, multiouk linearity, transformations. Topics to be selected from stepwise regression, weighted least squares, indicator variables, nonlines regression. (Prerequisites: 62-120 and oss 251.) (3 lecture hours a week.)

### 4.9 Physics

## (Ext. 2647)

## OFFICERS OF INSTRUCTION

## Polessors Emeriti

Kause, Lucjan; B.Sc. (London), M.A., Ph.D. (Toonto), D.Sc. (London; Nicholas Copemiwis), Fi.nst.P.-1958.
Holy, Frank; B.Sc. (London), M.Sc., Ph.D. MaWaster)-1961.
van Wijngaarden, Arie; B.Sc., Ph.D. (Malaster)-1961.
Szamosi, Geza; Ph.D., D.Sc. (Budapest)1964.

Czajkowski, Mieczyslaw; M.Sc., D.Sc. (Nicholas Copernicus)-1967.
Schlesinger, Mordechay; M.Sc., Ph.D. (Jensalem), F.Inst.P.-1968.

## University Professors

Drake, Gordon W. F.; B.Sc. (McGiill), M.Sc. (Westem Ontario), Ph.D. (York), F.Inst.P., FR.S.C.-1969. (Killam Research Fellow, 1990-1992) (Head of the Department)
McConkey, John William; B.Sc., Ph.D. (Queen's University of Belfast), F.Inst.P., F.R.S.C.-1970. (Killam Research Fellow, 1986-1988)

## Protessors

Bayis, William Eric; B.S. (Duke), M.S.
(llinois), D.Sc. (Technical University of Mu-ni(ch)-1969.
Alkinson, John Brian; M.A., D. Phil. (Oxford)-1972.
Glass, Edward N.; B.S. (Camegie-Mellon), M.S., Ph.D. (Syracuse)-1974.

Maev, Roman G.; B.Sc. (Moscow Physical Engineering Institute), M.Sc. (Moscow Physical Technical University), Ph.D. (Lebe-dev)-1995.

## Adjunct Professor

Shyder, Dexter Dean; B.A. (Wabash), Ph.D. Massachusetts Inst. Technology)-1995.

## Cross-Appointments

Aroca, Ricardo; B.Sc. (Chile), Ph.D. (Moscow State), D.Sc. (Leningrad)-1985.

### 4.9.1 PROGRAMS OF STUDY

Programs of study leading to the Bachelor of Science degree in Physics and High Technology (PHT), Honours Physics and Computer Science, and Honours Chemistry and Physics are offered. The Physics and High Technology degree has both a Co-op and a Fast-track option. The Fast-track option allows graduation after three years. With proper choice of options, students can graduate with a minor in Business. There is also a Physics and High Technology option for Electrical and Computer engineers, and combined Honours programs with other disciplines can be arranged. All programs are subject to the general University and Faculty of Science regulations as outlined in the relevant sections of this calendar.
Graduates from the PHT program with honours standing can normally expect to enter directly into the M.Sc. Program in Physics at Windsor and other Canadian universities. They will also be eligible for entry into most M.A.Sc. Programs in Electrical Engineering, although additional qualifying work may be required in some cases.

## PROGRAM REQUIREMENTS

All options must be approved by Physics.

## Physics and High Technology: Co-op Option

Total courses: forty, plus three co-op terms.
Major requirements: sixteen courses, including 64-140, 64-141,64-151, 64-220,64222, 64-250, 64-310, 64-311, 64-320, 64-323, 64-331, 64-350, 64-450, 64-460, 64-484, 64-496.

## Other requirements:

(a) 59-140, 59-141, 60-205, 60-206, 62-120, 62-140, 62-141, 62-215, 62-216, 62-318, 62-360, 70-151, 71-140, 72-171, 74-231, 85-130, 85-214, 88-226, 88-317, 88-427;
(b) three co-op work terms (oral and written reports required), plus an optional work term following the second semester of the first year. Students must maintain an hon-
ours average (G.P.A. 8.0 or greater) to qualify for co-op placements.
(c) two additional B.Sc. or B.A.Sc. Credit courses at the 200 level or higher in the Biological Sciences, Chemistry, Computer Science, Physical Geography, Earth Sciences, Mathematics, Statistics, or Enginering that are approved by the Physics Program Co-ordinator.
(d) two additional courses, one of which must be from Arts (01-) and one from Social Sciences (02-).

## RECOMMENDED COURSE SEQUENCE

First Year: ten courses, including 59-140, 59-141, 62-120, 62-140, 62-141, 64-140, 64-141, 64-151, 85-130, and one option, followed by an optional summer work term.
Second Year: ten courses, including 62215, 62-216, 62-318, 64-220, 64-222, 64250, 64-320, 71-140, 85-214, and 88-226, followed by a summer Co-op work term.
Third Year: five fall courses, including 62360, 64-323, 64-331, 64-350, 88-317; Winter co-op work term; five summer courses, including 60-205, 64-310, 64-311, 70-151, and one option.
Fourth Year: fall co-op work term; five winter courses, including 64-450, 64-460, 64-496, 88-427, and one option; five summer courses, including $60-206,64-484,72-171$, 74-231, and one option.

## Physics and High Technology: Three-Year Fast Track Option

Total courses: forty, including a research project.
Major requirements: fifteen courses, including 64-140, 64-141, 64-151, 64-220, 64222, 64-250, 64-310, 64-311, 64-320, 64-323, 64-331, 64-350, 64-450, 64-460, 64-496.

## Other requirements:

(a) 59-140, 59-141, 60-205, 60-206, 62-120, 62-140, 62-141, 62-215, 62-216, 62-318, 62-360, 70-151,

71-140, 85-130, 85-214, 88-226 88-317, 88-427;
(b) full-time research project (64-412 3.0 credit hours).
(c) two additional B.Sc. or B.A.Sc courses at the 200 level or higher in the Biological Sciences, Chemistry, Computer Science, Physiaa Geography, Earth Sciences, Mathematics, Statistics, or Enginering that are approved by the Physics Program Co-ordinator.
(d) two additional courses, one of which must be from Arts ( 01 -) and one from Social Sciences (02-).

Students may choose to follow this program but with an interruption of one year to addan industrial internship or study abroad, forexample. Such changes must be made in consultation with the Department of Physics.

## RECOMMENDED COURSE SEQUENCE

First Year: eleven courses, including 59 . 140, 59-141, 62-120, 62-140, 62-141, 64. 140, 64-141, 64-151, 85-130, and two options, followed by an optional summet work term.
Second Year: eleven courses, including 62 . 215, 62-216, 62-318, 64-220, 64-222, 64 250, 64-320, 71-140, 85-214, and 88-226 and one option; followed by five summer courses including, 60-205, 60-206 64-310, 64-311, and 70-151.
Third Year: ten courses, including $62-360$, 64-323, 64-331, 64-350, 88-317,64-450,64 460, 64-496, 88-427, and one option, fot. lowed by a full-time summer research project ( $64-412,3.0$ credit hours).
Graduates from the PHT fast-track option may be able to apply some results of theirfesearch project to ward their Master's degree and complete their M.A.Sc. Within fouryears of their university entrance.

## Minor in Business Administration

Students in the co-op program will be able to eam a minor in Business Administration by selecting two of their four options from Busness Administration. (See 5.1.9.)

### 4.9 Physics

## Physics and High Technology for Electrical and Computer Engineers

Students of electrical and computer engireering who maintain a G.P.A. of 8.0 or more can add a B.Sc. in Physics and High Technology to their B.A.Sc. degrees by completing the following ten courses: 62-360, 64-222, 64-310, 64-311, 64-320, 64-323, 64-331, 64-350, 64-450, and 64-460
Physics and Computer Science Honours Total courses: forty.
Major requirements-Physics: twelve courses, consisting of 64-140, 64-141, 64-$151,64-220,64-222,64-250,64-314,64-$ 315,64-320, 64-323, 64-331, and 64-350.
Major requirements-Computer Science: twelve courses, consisting of 60-100, 60140, 60-141, 60-212, 60-214, 60-231, 60254, 60-255, 60-265, 60-330, and 60-499 (a 6.0 credit hour course.)

Other requirements:
(a) 62-120, 62-140, 62-141, both 62215 and 62-216, 62-318, 65-205 (or 65-250), 62-360, 85-214, and 88-226;
(b) six courses from any area of study, including Physics and Computer Science.

## RECOMMENDED COURSE SEQUENCE

First Year: 64-140, 64-141, 64-151, 60-100, $60-140,60-141,62-140,62-141$ and one other course.
Second Year. 64-220, 60-212, 60-214, 60-$231,60-254,60-255,62-120,62-215,62-$ 216, and 85-214.
Third Year: 64-222, 64-250, 64-314, 64-315, $60-265,60-330,62-318,62-360,88-226$, and one other course.
Fouth Year: 64-320, 64-323, 64-350, 64360, 60-494 (a 6.0 credit course), 65-205, and three other courses.
Other Combined Honours Programs Total courses: forty.
Major requirements_Physics: t w e I ve courses, consisting of 64-140, 64-141, 64151, 64-220, 64-222, 64-250, 64-310, 64-$320,64-311,64-323,64-331$, and 64-350.

Major requirements-Other Subject: as prescribed by that area of study.
Other requirements:
(a) 59-140, 59-141, 62-120, 62-140, 62-141, both 62-215 and 62-216, 62-318, and 85-214;
(b) any additional, non-major requirements as determined by the second area of study:
(c) additional courses, if necessary, from any area of study, to a total of forty.

## Minor in Physics

The minor in Physics consists of 64-140, 64141, 64-151, 64-220, 64-222, and 64-250. Selected courses leading to a minor in physics may not consist of antirequisites to courses in the student's program. Students must also remember to select only courses which may be otherwise counted for credit towards their degree programs.

## Chemistry and Physics Honours

See Chemistry and Biochemistry, 4.4.1.

### 4.9.2 COURSE DESCRIPTIONS

Not all courses listed will necessarily be offered in each year.

## 64-100. Acoustics of Music I

Wave motion, pressure amplitudes, interference; propagation of sound; simple harmonic oscillators; resonance, vibrating strings and air columns, percussion instruments; natural modes of vibration, vibration recipes; impedance; piano strings; hearing; pitch, loudness, tone quality; intensity measurement and sound level; steady tones, harmonics, Fourier spectra, modulation, electronic synthesis. (No prerequisite.) (2 lecture hours, 1 laboratory hour a week.)

## 64-101. Acoustics of Music II

Acoustical study of bowed stringed instruments, organs, flutes, reed instruments, brass instruments, human voice; formants, feedback, input impedance, harmonic spectra; room acoustics; sound reproduction; pitch perception, combination tones, masking; consonance and dissonance; tuning

### 4.9 Physics

and temperament. (Prerequisite: 64-100.) (2 lecture hours, 1 laboratory hour a week.)

## 64-114. Physical Concepts and Numeracy I

The development of critical quantitative thinking in applications of physics to everyday phenomena. The course is designed for general, non-science students but should also serve students majoring in science but weak in problem solving skills. By helping students to sharpen their analytical skills in applications of physical concepts, the course is meant to increase numeracy without being heavily mathematical. It concentrates on mechanics, properties of matter, and heat with the aid of tools such as vectors, functional relationships, their graphical representations, and elements of statistics and error analysis. (3 lecture hours a week.)

## 64-115. Physical Concepts and Numeracy II

A continuation of 64-114. Elements of sound, light, electricity and magnetism, and concepts of waves, cycles, resonance, input/output, and feedback, investigated with analytical tools including order-of-magnitude estimates, elementary dimensional analysis, relative sizes, and scaling. (Prerequisite: 64-114 or consent of instructor.) (3 lecture hours a week.)

## 64-140. Introductory Physics I

Mechanics; properties of matter and heat. A calculus-based course. (Prerequisites: OAC Calculus. Recommended corequisite: 62140. Students weak in physics and problem solving may wish to take 64-114 and 64-115 first.) (3 lecture, 3 laboratory hours a week.)

## 64-141. Introductory Physics II

Wave motion, sound, electricity and magnetism, light, and modern physics. (Prerequisite: 64-140.) (3 lecture, 3 laboratory hours a week.)

## 64-151. Introduction to Theoretical Methods

An introduction to practical problem solving and data analysis techniques in physics, emphasizing computer-aided graphical and approximate computational methods; order-of-magnitude estimations, the elements of dimensional analysis, approximate evalu-
ation of functions, parameter optimization, complex numbers, an introduction to fractals, vector algebra, dyads. (Prerequisiles 64-140 and 62-140.) (2 lecture, 2 laboratory hours a week.)
64-190. Introduction to Astronomy I
The solar system with emphasis on the results of recent space exploration. This isa descriptive course suitable for the non-soentist. (May be taken by B.Sc. students for credit, but does not count as a Physics course or other science option towards the fulfillment of the requirements for the B.SC degree.) (2 lecture hours a week.)
64-191. Introduction to Astronomy II The stars, galaxies, including pulsars, blad holes, and quasars. Current theories of the structure of the universe will be discussed This is a descriptive course suitable for the non-scientist. (May be taken by B.Sc. students for credit, but does not count asa Physics course or other science option towards the fulfillment of the requirements for the B.Sc. degree.) (2 lecture hours a week)
64-202. Physics and Society-The Past The interaction between physics and sociely from prehistoric times up to the industrial revolution is discussed. The ways in which man's growing understanding of the phys. cal universe has influenced practical skils and political, economic, and philosophical thinking are extensively explored and deverer oped. (Not open to first-year students.) /? lecture hours a week.)

## 64-203. Physics and Society-The Present

Modem society is dominated by the expbsive development of physics and technologg from the industrial revolution to the present This development and its impact on societ are explored. A number of topics of current interest such as nuclear energy, world en ergy supplies, pollution, and possible solv. tions to the energy crisis are discussed h detail. (Not open to first-year students.) /R lecture hours a week.)

## 64-204. Elements of Atomic Physics

Properties of waves, atomic structure, wave nature of matter. This course is recom mended for students in the Faculty of Eng
neering, and is not available for credit toward a B.Sc. degree in Physics. (Corequisites: 85.111 and $85-124$ or equivalent.) (3 lecture, 1.5 laboratory hours a week.)

## 64-220. EM Fields and Photons

Electrostatic fields and potentials. Charges and capacitance. Currents and conduction in solids. Magnetic fields; induction; introduction to Maxwell equations, electromagnetic waves, and photons; the photoelectric effect. (Prerequisite: 64-141, or $85-124$, or equivalent.) ( 3 lecture, 3 laboratory hours a week.)
64-222. Optics
Geometrical optics: review of laws of reflecfon and refraction; lenses and mirrors (matrix optics); stops, optical systems, aberrations. Introduction to wave optics; inperierometry, diffraction, polarization, Fresnel equations, elements of dispersion theory. (Prerequisites: 64-141 and 62-141.) (3lecture, 3 laboratory hours a week.)

## 64-250. Mechanics

Newton's Laws, Galilean transformations, rotating reference frames, conservation laws, angular momentum and torque, driven oscillators with damping, dynamics of rigid bodies, inverse square forces, Lorentz transformation, relativistic kinematics and dynamics. (Prerequisite: 64-140 or equivalent and 64-151 or consent of instructor; corequisite: 62-215 or equivalent.) (3 lecture hours, 1 tutorial hour a week.)

## 64-261. Basic Electronics

An introduction to digital and analog electronics. Binary numbers, Boolean algebra, gales, and digital logic, logic levels for various types of gate technology, logic circuits, decoders, multiplexers, flip-flops, counters, shitt registers, half/full adder. Voltage and current sources, AC circuits, comparators, Schmitt trigger, timers, one-shots, wave shaping. Basics of feedback, operational amplifiers and applications, principle of superposition and Fourier analysis, active and passive filters, D/A and A/D conversion digialanalog multiplication, time-to-digital and yoltage-to-frequency conversion, analog computing. (Prerequisite: 64-220; corequisite: 62-215 or equivalent.) (3 lecture, 3 laboratory hours a week.)

## 64-290. Physics, Energy, and the Environment

An introduction to physical processes with an impact on the environment. Topics include nuclear energy, energy conversion, alternative energy sources, and the atmosphere. The course is specifically designed for the non-physicist. (Prerequisite: any 100 -level course in the Faculty of Science.) (2 lecture hours a week.)

## 64-291. Structure of Matter

A discussion of how modern physics has revolutionized our description of the structure of matter. Topics include the wave-particle duality, quantum theory, the nature of fundamental particles, implications for cosmology. Applications to lasers, holography, semiconductors and the computer revolution are discussed. The course is specifically designed for the non-scientist. (May not be taken for credit toward a B.Sc. degree.) (Prerequisite: any 100 -level course in the Faculty of Science.) (2 lecture hours a week.)

## 64-298. Co-op Work Term I

## 64-310. Quantum Physics and Chemistry

 Classical and quantum physics, relativistic physics, black-body radiation, photoelectric effect, Compton scattering, atomic structure, Schroedinger equation, particle in a box, harmonic oscillator. (Prerequisites: 62215 and 62-216 or equivalents.) (3 lecture, 3 laboratory hours a week.)
## 64-311. Atomic and Molecular Spectra

Introduction to atomic and molecular spectroscopy, hydrogen and helium atoms, perturbation theory. (Prerequisites: 64-310 or 64-314, 62-215, and 62-216, or equivalents.) (3 lecture, 3 laboratory hours a week.)

## 64-314. Quantum Physics and Chemistry

 (Same as 64-310 without the laboratory.) Classical and quantum physics, black-body radiation, photoelectric effect, Compton scattering, atomic structure, Schroedinger equation, particle in a box, harmonic oscillator. (Prerequisites: 62-215 and 62-216 or equivalents.) (3 lecture hours a week.)
## 64-315. Atomic and Molecular Spectra

 (Same as 64-311 without the laboratory.) Introduction to atomic and molecular spectroscopy, hydrogen and helium atoms,
### 4.9 Physics

perturbation theory. (Prerequisites: 64-310 or 64-314, 62-215, and 62-216 or equivalents.) (3 lecture hours a week.)

## 64-320. Electromagnetic Theory

Electrostatics, potential theory, boundaryvalue problems, Green functions, multipole expansion, electrostatics of ponderable media, magnetostatics. (Corequisite: 62-360) (3 lecture hours a week.)

## 64-323. Electromagnetic Waves

Maxwell's equations in macroscopic media, gauge invariance; electromagnetic waves in a relativistic formulation; propagation, refraction, and reflection at dielectric and metal interfaces; polarization, Stokes parameters; Fourier analysis; transmission lines, wave guides, relativistic dynamics of charges in external fields; radiation from time-dependent currents, Liénard-Wiechert potentials. (Prerequisites: 64-222, 64-350, and 62-318.) (3 lecture, 3 laboratory/tutorial hours a week.)

## 64-331. Thermodynamics and Statistical Mechanics

The nature of heat, the first, second, and third laws of thermodynamics and their applications, equation of state, Maxwell's relations and applications of thermodynamics to the properties of matter. Kinetic theory; statistical mechanics and the statistical interpretation of thermodynamics; Boltzmann, Fermi, and Bose distributions; applications. (Prerequisites: 64-141, 62-215, and 62-216 or equivalents.) (3 lecture hours, 1 tutorial hour a week.)

## 64-350. Classical Mechanics I

Dynamics of particles and systems of particles; Newtonian mechanics in the Lagrangean formulation; variational principles, conservation laws; symmetry and Noether's theorem; special relativity; two-body central forces, scattering; small oscillations. (Prerequisites: 64-250, 62-215, and 62-216 or equivalents.) (3 lecture hours, 1 tutorial hour a week.)

## 64-351. Classical Mechanics II

Rotational motion, non-inertial frames; rigidbody rotations, inertia tensor, Euler's equations. Hamiltonian formulation; canonical transformations; Poisson brackets, symme-
try groups; Hamilton-Jacobi theory; Schrödinger equation. (Prerequisite; 64 350.) (3 lecture hours, 1 tutorial hour a week.)

## 64-360. Principles of Electronics

Basic concepts of solid state physics andapplications. Atoms and energy levels, levelsin crystalline solids, energy bands, conduction mechanisms, doping, p-n junction, various types of diodes, and typical circuits. Bipolar transistor, collector characteristic, operating point, small-signal parameters, single-transistor circuits, field-effect transistors, mulf. ple-transistor circuits. LSI device principles and applications. (Prerequisite: 64-261.) (2 lecture, 3 laboratory hours a week.)

## 64-381. Principles and Application of Vacuum Techniques

Review of basic kinetic theory of gases; transport phenomena, viscous and moleowlar flow; principles and applications of vac uum pumps, vacuum gauges, and other components; leak detection; mass spectrometers and electronic accessories; appi; cations to optical coating, space simulation, and cryogenics research; typical experiments involving charged and neutral partide beams. (Prerequisite: 62-216 or equivalant) (2 lecture hours a week.)

## 64-398. Co-op Work Term II

## 64-412. Research

Design, researching, execution and managing, analysis, and reporting (Written and oral) of a supervised physics project in areoognized reseach laboratory, on- or off-cam. pus. This is a problem-based course with emphasis on team work. Normally, threereports are to be submitted: a report on background, one on the research plan, and a final report containing the main results, condvsions, and suggestions for further work. With departmental approval, the research maybe applied toward partial fulfillment of the M.SC. degree. (35-40 laboratory hours a week) ( 3.0 credit hours.)

## 64-420. Classical Electrodynamics

Conservation laws, Bremsstrahlung scattering of radiation, multipole radiations fields. radiation reaction, Lorentz-Dirac equation.
(Prerequisites: 64-320 and 64-323.) (3 lecture hours a week.)
64-424. Introduction to Plasma Physics Review of atomic collisions and kinetic theoy, motion of charged particles, elementary processes in the production and decay of innization in gases, plasma waves and oscillations, transport processes, elements of magnetohydrodynamic stability theory. Applications of plasma physics. (Prerequisites: 64-311 or 64-315, and 62-360.) (3 lecture burs a week.)

## 64-443. Quantum Optics and Spectroscopy

Emission and absorption of optical radiation, the widths of spectral lines, stimulated emission and transition probabilities, atomic structure and angular momentum coupling, the Zeeman effect, introduction to molecular spectroscopy. (Prerequisites: 64-323 and 64-450.) (A directed, self-study course. 1 consultation hour a week.)

## 64-450. Quantum Mechanics I

Probability amplitudes and transformations; operators and physical observables; symmetries and conservation theorems; timedevelopment operator and Dyson expansion; two-state systems, density matrices; perturbation theory and the variafonal method; identical particles, spin, the Thomas-Fermi atom. (Prerequisites: 64-$315,64-350$, and 62-360 or consent of instructor.) (3 lecture hours a week.)

## 64-451. Quantum Mechanics II

Scattering in one and three dimensions, the Smatrix, partial waves, scattering phase shifts; JWKB approximation; the harmonic oscillator with annihilation and creation operators; Schroedinger, Heisenberg, and interaction pictures; matrix mechanics and Hilbert space; angular momenta and rotalions. (Prerequisite: 64-450.) ( 3 lectures a week.)

## 64460. Condensed-Matter Physics

Elements of crystallography, crystal diffraction, reciprocal lattices, lattice dynamics and thermal properties of solids, phonons, solufon of Schroedinger equation in periodic potential, band theory, Fermi surfaces of metals and semiconductors, optical proper-
ties of dielectrics. (Prerequisite: 64-314 or consent of instructor.) (A directed, self-study course. 1 consultation hour a week.)

## 64-463. Special Topics in Physics

Advanced topics in contemporary physics. (Prerequisite: to be determined according to the topic.) (May be given as a seminar course, or as a directed, self-study course.)

## 64-474. Introduction to General Relativity

Curved spacetime, an introduction to differential geometry, general covariance, Riemann tensor, Einstein field equations. (Prerequisite: 64-250 or consent of the instructor.) (3 lecture hours a week.)

## 64-481. Thin Films: Experiments, Theory and Applications

Definition of thin films and their classification; methods of preparation; elements of high-vacuum technology; thin film formation, structure and methods of investigation; mechanical, optical, electrical properties of thin films and their application in modern technology. (Prerequisites: 64-311 or 64-220, and 64-222, or three years of Electrical Engineering or Engineering Materials, or equivalent.) (3 lecture hours a week.)

## 64-484. Design and Application of Lasers

Stimulated emission, rate equation approach to amplification and output power calculations; Gaussian beams, stable and unstable resonators, Q -switching, modelocking and cavity dumping, ruby, Nd:YAG and other solid-state lasers, semi-conductor, gas and dye lasers. (Prerequisites: $64-$ 311 or 64-220, and 64-222, or three years of Electrical Engineering or Engineering Materials, or equivalent.) (3 lecture hours a week.)

## 64-485. Atmospheric and Environmental Physics

Physics of the atmosphere, general description and layering, interactions of incoming and outgoing radiations, greenhouse effect, atmospheric thermodynamics and stability, cloud physics, atmospheric dynamics, gravity waves and turbulence, atmospheric photochemistry, ozone layer, upper atmosphere, plasma and hydromagnetic ef-
fects, ionosphere, air glow and aurora. (Prerequisite: 64-311 or 64-315 or consent of the instructor.) (3 lecture hours a week.)

## 64-487. Applications of Electron and Ion Beams

Non-relativistic theory of charged particles in electric and magnetic fields. Review of matrix optics, electrostatic lenses, magnetic lenses, electrostatic and magnetic vector fields. Applications to energy and mass analysis. The Liouville theorem and its consequences. Dense electron beams and applications. (Prerequisites: 64-250, 62-215, and 62-216 or equivalents.) (2 lecture hours a week.)
64-496. Technical Communication Skills Introductory lectures and workshops on technical writing and instruction, followed by supervised instruction of first-year Physics students in 64-151, and projects in writing resumes and technical manuals and in preparing a multimedia computer module for a problem area in physics instruction. The computer module can employ any suitable combination of Maple C++, Visual Basic, HTML, Java. (Prerequisite: 64-151.) (2 lecture, 2 laboratory hooooours a week.)

## 64-498. Co-op Work Term III

## 5 ODETTE SCHOOL OF BUSINESS ADMINISTRATION

## Dean

Roger D. Hussey; M.Sc., Ph.D. (Bath).

## Associate Dean

William Wellington; B.Sc. (Western Ontario), M.B.A. (Windsor), Ph.D. (Michigan State).

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Zin, Michael; B.Comm. (Assumption), M.B.A. (Michigan), Ph.D. (Michigan Slate), F.C.G.A.-1956.

Rosenbaum, Edward; B.A. (Wayne Stale), M.S., Ph.D. (Wisconsin), J.D. (Detroit College of Law), C.F.A.-1969.
Crocker, Olga Lillian; B.Ed., M.B.A. (Atberta), Ph.D. (U. of Washington)-1976.
Brill, Percy; B.Sc. (Carleton), M.A. (Columbia), Ph.D. (Toronto)-1983.

## Professors

Morgan, Alfie; B. Comm. (Cairo), M.B.A. (Boston), Ph.D. (American U.)-1969.
Lam, Wai P.; B. Comm. (St. Mary's), M.B.A, Ph.D. (Michigan State), F.C.A.-1073.
Faria, Anthony John; B.S., M.B.A. (Wayne State), Ph.D. (Michigan State)-1975.
Andiappan, Palaniappan; B.A., M.A., M. Lith (Madras), M.S. (Massachussetts), Ph.D. (lowa)-1980.
Dickinson, John R.; B.S.B.A., M.B.A. D.B.A (Indiana)-1980.
Thacker, James W.; B.A. (Winnipeg), M.A, Ph.D. (Wayne State)-1982.
Kantor, Jeffrey; B. Bus. Sc., B. Comm.
(Hons.) (Capetown), C.P.A., C.A. (Ontani), Ph.D. (Bradford, England)-1983.
Aneja, Yash Paul; M.S., B.S. (Indian Statisfocal Inst.), Ph.D. (Johns Hopkins)-1983.

Chandra, Ramesh; B.S. (Bihar Institute of Tech.), M.S. (Mississippi State), Ph.D. (Union College), Ph.D. (Oklahoma)-1983.
Templer, Andrew; B.A. (Hons.), (Witwatersand), M.A. (South Africa), M.Sc. (London), Ph.D. (Witwatersrand)-1983.
Fields, Mitchell; B.A. (Maryland), M.A., Ph.D. (Wayne State)-1985.
Withane, Sirinimal; B.Sc. (Sri Jayawardenpura), M.Sc. (Moratuwa University), M.A. (Carleton), Ph.D. (Rockefeller College, SUNY)-1986.
Okechuku, Chike; B.A.Sc., M.A.Sc. (Toronto), M.B.A., Ph.D. (York)-1986.
Singh, Jang; B.A. (Toronto), M.A. (College of St. Thomas), M.B.A. (Windsor), M.A., Ph.D. (Toronto)-1986.
Armstrong-Stassen, Marjorie; B.S., M.L.H.R. Ph.D. (Ohio State)-1989.

Hussey, Roger D.; M.Sc., Ph.D. (Bath)2000. (Dean)

## Associate Professors

Haque, Mohd. Razaul; B.Sc., M.Sc. (Aligarh Musim U.), M.Sc. (Southern Illinois), Ph.D. (Wayne State)-1967.
Musson, Harold Douglas; B. Comm. (Windsor), M.B.A. (Michigan State)-1968.
Freeman, Jack L.; B.S. (Michigan State), M.B.A. (Wayne State), Ph.D. (Michigan Slate)-1972.
Cattaneo, R. Julian; Licenciado (Buenos Aires), Ph.D. (Michigan)-1980.
Gunay, Erdal; B.S. (Middle East Technical University), M.B.A., Ph.D. (Syracuse)1983.

Rieger, Fritz; B.S. (Manhattan), M.B.A. (Columbia), Ph.D. (McGill)-1983.
Forrest, Anne; B.Sc., M.I.R. (Toronto), Ph.D. (Warwick)-1985. (Program Chair, Women's Studies)
Chaouch, A.; B.Sc. (Algiers), M.Sc. (Stanford), Ph.D. (Waterloo)-1986.
Reaviey, Martha; B.Comm., M.B.A. (Windsor), Ph.D. (Wayne State)-1986.

Wellington, William; B.Sc. (Western Ontario), M.B.A. (Windsor), Ph.D. (Michigan State)-1986. (Associate Dean)
Lan, George; B.S. (Beloit College), M.A. (Smith College), M.B.A. (Tulane University), Ph.D. (Queen's)-1988.
Ursel, Nancy D.; B.Comm. (McGill), M.B.A. Ph.D. (Concordia)-1989.

## Assistant Professors

Miller, Peter; B.Eng. (McGill), M.B.A. (Toronto)-1977.
Prince, Michael; B.A.Sc., M.B.A. (Windsor), Ph.D. (Bradford)-1986.

Kao, Diana; LL.B., (National Cheng-Chi), Dip. in Acc., (Wilfrid Laurier), M.B.A. (McMaster), Ph.D. (Western Ontario) 1990.

Higginson, James; B.Comm. (McMaster), M.A.Sc., C.I.T.T., Ph.D. (Waterloo)-1992.

Assef, Ata; B.A. (Lebanese U.), D.H.S., M.A. (Western Ontario), Ph.D. (McGill)-1999.
Koziol, Natasha; B.Sc. (Western Ontario), C.M.A. (Nova Scotia), M.B.A. (Laurentian), Ph.D. (Erasmus)-2000.
Ong, Audra; B.Sc. (Queen's, Belfast), M.B.A. (Wales), Ph.D. (West of England, Bristol)-2000.
Sinha, Rajeeva; B.A. (Patna), M.A.(Jaawalharlal Nehru), M.Phil. (Delhi), Ph.D. (War-wick)-2000.
Kerr, Gerard; B.A. (Western Ontario), B.A., B.Admin. (Brock), M.B.A. (McMaster), Ph.D. (York-2001.

### 5.1 Programs of Study

### 5.1.1 CO-OPERATIVE EDUCATION PROGRAMS IN BUSINESS ADMINISTRATION

## Bachelor of Commerce (Honours Business Administration)

The Co-operative Education Program is designed for highly motivated students who wish to develop their skills, increase their knowledge, and gain career-related experience.

Students are admitted into the Bachelor of Commerce Co-op Program either directly out of their OAC year (a minimum of $75 \%$ is required) or in the Fall term of their second year of study in the Odette School of Business Administration. The Co-operative option is not available for the Honours Business and Economics or the Commerce for University Graduates programs.
Admission to the Program is competitive and is based on academic excellence, work experience and personal strengths. Based on academic achievements and a completed application package students are invited on campus for interview. The interview is designed to assess students' transferable skills, their motivation for applying, and their marketability.
Students admitted to the Program must maintain a major average of 8.0 or better and a cumulative average of 6.0 or better, and must successfully complete three work terms to remain in the Co-op Program. The fall work term is mandatory. Failure to satisfactorily complete the fall work term will result in the student failing to meet the co-op requirements of his or her degree program. Students may receive no more than two F grades in their program; they must receive a successful final evaluation from their supervisor, attend all Co-op workshops and successfully complete all work term reports. Co-op placements are full-time, twelve to sixteen weeks in length and career-related.
The process for obtaining employment is competitive. The University does not guarantee employment. The interview process is as follows:

1) Job descriptions will be posted and all qualified co-op students will be invited to apply.
2) Employers will be sent the resumes of all students who have applied.
3) Interviews will take place and a match will be created.
4) Both employers and students will have input into the matching process.

The work/study sequence is as follows:

YEAR 1
Fall term: Study
Winter term: Study
Summer term: Work/Study/Holiday YEAR 2
Fall term: Study
Winter term: Study
Summer term: Work
YEAR 3
Fall term: Study
Winter term: Work
Summer term: Study
YEAR 4
Fall term: Work
Winter term: Study
Summer term: Study

## PROGRAM REQUIREMENTS

Total courses: forty.
Major requirements: 70-151, 70-152,71. 140, 71-243, 72-171, 72-271, 73-105, 73213, 73-220, 74-231, 75-498, plus elevento thirteen additional Business courses.
Other requirements: 41-110, 41-111, 60 104, 62-194; two courses from Arts/Languages; plus ten to twelve additional courses from outside of the Odette Schoold Business Administration. Students wishinga stronger Mathematics background should take 62-120 or 62-140 instead of 62-194. Students may also opt to take 62-130 in place of 62-194 but are cautioned that 62 . 130 is not a prerequisite for upper-level Mathematics courses.
Work experience obtained with C.A. firms will count toward work experience required for obtaining a C.A. designation. Students in the C.A. stream will be given credit for wotk experience earned since September 1 , 1997 with an office approved for the training of C.A. students.

## Bachelor of Commerce (Honours Business Administration and Computer Science)

The University of Windsor offers an interdisciplinary program leading to the degree of Bachelor of Commerce (Honours Business Administration and Computer Science). The objective of the program is to provide students with the knowledge, skills, and abilities to direct, co-ordinate, and manage informafion technology in current business organirations.

Admission to this interdisciplinary program is from the OAC level only, to the University of Windsor, in consultation with representative(s) from the Faculty of Science, the Odette School of Business Administration, and the Office of Co-operative Education and Career Serivices. OAC requirements incude English I, Calculus, and Algebra and Geometry, plus three other OAC credits. An eighty percent average is recommended. At least sixty percent in all OAC math courses laken is required.

Students admitted to this program must complete a total of forty semester courses, must maintain a major average of 8.0 or betler, a cumulative average of 6.0 or better, andsuccessfully complete three work terms. Specific Co-op requirements are available through the Office of Co-operative Education and Career Services.

The process for obtaining employment is competitive. The University does not guarantee employment. The interview process is as follows:

1) Job descriptions will be posted and all qualified co-op students will be invited to apDy.
2) Employers will be sent the resumes of all students who have applied.
3) Interviews will take place and a match will be created.
4) Both employers and students will have input into the matching process.

The work/study sequence is as follows:

## YEAR 1

Fall term: Study
Winter term: Study
Summer term: Work/Study/Holiday
YEAR 2
Fall term: Study
Winter term: Study
Summer term: Work
YEAR 3
Fall term: Study
Winter term: Work
Summer term: Study
YEAR 4
Fall term: Work
Winter term: Study
Summer term: Study
PROGRAM REQUIREMENTS
Total courses: forty.
Major requirements-Business Administration: 70-151, 70-152, 71-140, 71-243, 72171, 72-271, 73-220, 74-231, and 75-498; plus nine additional Business courses.
Major requirements-Computer Science: 60-100, 60-104, 60-140, 60-141, 60-205, $60-212,60-254,60-255,60-265,60-315$, 60-330, 60-334, 60-367, and 60-393.

Other requirements: 41-110, 41-111, $62-$ 120, 62-140, and 65-205; plus one Arts/Languages course; and one Arts/Languages or Social Sciences course; and one Science course.

Students may also substitute 62-130 in place of 62-140 but are cautioned that 62130 is not a prerequisite for upper-level Mathematics courses.

RECOMMENDED COURSE SEQUENCE

YEAR 1
First Term
60-100
60-104
60-140
62-140
70-151

## Second Term

60-141
60-205
65-205
70-152
71-140

## Third Term

Work/Study

## YEAR 2

## First Term

41-110
60-212
60-265
62-120
74-231

## Second Term

41-111
60-254
60-255
72-171
One Business course

## Third Term

Work

## YEAR 3

## First Term

60-315
60-330
60-393
72-271
73-220

## Second Term

Work

Third Term
60-334
60-367
71-243
One Business course
One Arts/Languages course

## YEAR 4

## First Term

Work (mandatory)

## Second Term

Four Business courses
One Science course

## Third Term

75-498
Three Business courses
One Arts, Languages, or Social Sciences course

### 5.1.2 BACHELOR OF COMMERCE (HONOURS BUSINESS ADMINISTRATION)

The purpose of the Bachelor of Commerce program is to develop educated men and women with a grounding in business ideas and techniques which will help equip them for positions of responsibility in industry and commerce. The program is designed to provide the broad outlook needed in modem business, and accordingly stresses general procedures and methods of attack on problems. Students are guided toward independent study, and they are encouraged to grapple with business problems on their own. The objective is to give students an awareness of the position and significance of business in the world today.
Total courses: forty.
Major requirements: 70-151, 70-152,71. 140, 71-243, 72-171, 72-271, 73-105, 73 213, $73-220,74-231,75-498$, plus elevento thirteen additional Business courses.
Other requirements: $41-110,41-111,60$ 104, 62-194; two courses from Arts/Languages; plus ten to twelve additional courses from outside of the Odette Schoold Business Administration. Students wishinga
stronger Mathematics background should take 62-120 or 62-140 instead of 62-194 and should enrol in further Mathematics courses. Students may also opt to take $62-130$ in place of 62-194 but are cautioned that 62130 is not a prerequisite for upper-level Mathematics courses.
RECOMMENDED COURSE SEQUENCE
Students who desire to concentrate their studies in a particular area may need to modily this recommended sequence. These students should consult a faculty member in that area for an optimal sequence of courses.

## YEAR 1

First Term
70-151
41-110
60-104
62-194
One Ats/L_anguages course

## Second Term

70-152
71140
73-105
41-111
One Arts/Languuages course

## YEAR 2

First Term
$71-243$
72-171
73.213
74.231

One course from within or outside of Business Administration

## Second Term

72.271
73.220

Three courses from within or outside of
Business Administration

## YEAR 3

Ten courses (Consult a faculty advisor.)

## YEAR 4

75-498
Nine additional courses (Consult a faculty advisor.)

### 5.1.3 BACHELOR OF COMMERCE (HONOURS BUSINESS ADMINISTRATION AND ECONOMICS)

The University of Windsor offers an Interdisciplinary Program leading to the Degree Bachelor of Commerce (Honours Business Administration and Economics). The objective of the program is to prepare students for the growing demand for graduates trained in Business with a strong Economics background.
The program combines both the core of the Bachelor of Commerce program and the core of the Bachelor of Arts Economics program while allowing the student to use the options to gain additional training in Economics.

## PROGRAM REQUIREMENTS

Total courses: forty.
Major requirements-Business: 70-151, 70152, 71-140, 71-243, 72-171, 72-271, 73213, 73-220, 74-231, and 75-498; plus eight additional Business courses;
Major requirements-Economics: 41-110, 41-111, 41-221, 41-222, 41-231, and 41232; plus eight additional Economics courses at the 300 or 400 level;
Major requirements-Business or Economics: 73-105 or 65-205, and 73-205 or 41212.

Other requirements: 60-104, 62-194; two courses from Arts/Languages; two courses from any area of study, excluding Business and Economics. Students wishing a stronger Mathematics background should take 62-120 and 62-140 instead of 62-194 and should enrol in further Mathematics courses. Students may also opt to take 62130 in place of 62-194 but are cautioned that $62-130$ is not a prerequisite for upper-level Mathematics courses.

## RECOMMENDED SEQUENCE

Students who desire to concentrate their studies in a particular area may need to modify this recommended sequence. These students should consult a faculty member in that area for an optimal sequence of courses.

## YEAR 1

First Term
70-151
41-110
60-104
62-194
One Arts/Languages course

## Second Term

70-152
71-140
73-105 (or 65-205)
41-111
One Arts/Languages course

## YEAR 2

First Term
41-212 (or 73-205)
41-221
72-171
73-213
74-231

## Second Term

41-222
41-231
72-271
73-220
One Business course

## YEAR 3

First Term
41-232
71-243
Two Business courses
One Economics course

## Second Term

Two Business courses
Three Economics courses

## YEAR 4

First Term
Three Economics courses
One Business course
One Arts/Languages course

## Second Term

75-498
One Business course
One Economics course
Two courses from outside of Business and Economics

Notes:

1) Non-required courses taken in the Odette School of Business Administration should be chosen in consultation with the appropriate Area Chairperson and will lead to some specialization in the fields of $P-I R$, Finance and Marketing.
2) Non-required courses taken in Economics should like wise be chosen in consultation with an advisor.
3) In either case, all non-required courses in Business and Economics must be chosen from 300- or 400 -level courses
4) 41-321 and 41-322 are not available as non-required Economics courses. Also, credit may not be obtained for both of 71.344 and 41-353.
5) Students who wish to accelerate their programs by taking courses in Summer must seek academic advising in the appropriate area.

### 5.1.4 BACHELOR OF COMMERCE (HONOURS BUSINESS ADMINISTRATION AND COMPUTER SCIENCE)

The University of Windsor offers an interdisciplinary program leading to the degree of Bachelor of Commerce (Honours Business Administration and Computer Science). The objective of the program is to provide students with the knowledge, skills, and abilities to direct, co-ordinate, and manage information technology in current business organit zations.

PROGRAM REQUIREMENTS
Total courses: forty.
Major requirements-Business Administrafon: 70-151, 70-152, 71-140, 71-243, $72-$ 171, 72-271, 73-220, 74-231, and 75-498; plus nine additional Business courses.
Major requirements-Computer Science: $60-100,60-104,60-140,60-141,60-205$, $60-212,60-254,60-255,60-265,60-315$, 60-330, 60-334, 60-367, and 60-393.
Other requirements: 41-110, 41-111, 62-120,62-140, and 65-205; plus one Arts/Languages course; and one Arts/Languages or Social Sciences course; and one Science course.
Students may also substitute 62-130 in place of 62-140 but are cautioned that 62130 is not a prerequisite for upper-level Mathematics courses.

## RECOMMENDED COURSE SEQUENCE

## YEAR 1

## First Term

$60-100$
$60-104$
$60-140$
$62 \cdot 140$
70-151

## Second Term

$60-141$
60-205
$65-205$
70-152
71-140

## YEAR 2

## First Term

41-110
$60-212$
$60-265$
62-120
$74 \cdot 231$

## Second Term

41-111
60-254
60-255
72-171
One Business course

## YEAR 3

First Term
60-315
60-330
60-393
72-271
$73-220$

## Second Term

60-334
60-367
71-243
One Business course
One Arts/Languages course

## YEAR 4

First Term
Four Business courses
One Science course

## Second Term

75-498
Three Business courses
One Arts, Languages, or Social Sciences course

### 5.1.5 BACHELOR OF COMMERCE PROGRAM FOR UNIVERSITY GRADUATES

Students who wish to pursue the degree of Bachelor of Commerce following a baccalaureate degree previously completed with a 7.0 (C+) average or better in an area other than Business Administration must complete sixty semester credit hours (twenty courses) in Business Administration subjects offered by the Odette School of Business Administration at the University of Windsor. These hours are in addition to those Business Administration courses or their equivalents already taken for credit toward another degree. (Although the pro-
gram requirement is that twenty Business Administration courses be completed at the University of Windsor, advanced standing may be granted to a maximum of four courses for introductory Business Administration courses provided that such courses were passed with a minimum of C - grade and are beyond the student's initial degree requirements. If the courses were part of the initial degree, the student must substitute for such courses by taking additional courses).
Applicants to the Bachelor of Commerce Program for University Graduates must have completed at least one university-level mathematics course prior to entry into the program. Applicants who do not present a university mathematics course will be required to take 62-194 (mathematics for Business) as indicated in the Recommended Sequence for this program. Applicants who do not possess an OAC mathematics course prior to entry to this program will be required to complete an OAC mathematics course, or its equivalent, prior to graduation from the program.
Students with degrees from universities outside Canada may be required to complete additional courses.

Total courses: twenty-four.
Major requirements: 70-151, 70-152, 71140, 71-243, 72-171, 72-271, 73-105, 73213, 73-220, 74-231, and 75-498; plus nine additional Business courses.

Other requirements: 41-110, 41-111, 60104, and 62-194 (if not completed prior to entry into the program, or their equivalent(s) as determined by the Faculty.

## RECOMMENDED SEQUENCE

## First Term

70-151
71-140
73-105
73-213
74-231

## Second Term

70-152
72-171
73-220
Two other Business courses

## Third Term

71-243
72-271
Three other Business courses

## Fourth Term

75-498
Four other Business courses
Notes:

1) Students who have not previously completed the Economics, Computer Science, and Mathematics requirements should do so as early as possible to meet prerequisites for various Business courses.

For the purpose of the above recommended sequence, Intersession and Summer Session are treated as one term.
2) The maximum load for students in this program is six courses in each of the Fall and Winter terms and five courses over both intersession and Summer Session.

### 5.1.6 BACHELOR OF BUSINESS STUDIES (GENERAL) -ACCOUNTING TRACK

## ADMISSION REQUIREMENTS

This program is restricted to graduates of three-year business diploma programs from colleges of applied arts and technology with a major in accounting and a minimum cumvlative average of B or 70 percent. Those who qualify are granted twenty unspecified semester course equivalents towards this thirty-three-course degree.
The program requirements can be comr pleted in three terms of full-time study or through Flexible Learning. Completion of the Bachelor of Commerce (Honours Business Administration) would require an additional seven courses. Students may retain only one of these degrees.

Total courses: thirty-three.
Major requirements: 70-360, 70-361, 70456, 70-457, 70-458, 70-461, 71-243, 72 271, 73-213, 73-220, and 75-498.
Other requirements: a non-Business course (62-194 is recommended for those intending to pursue the B.Comm. degree.)
Students with an equivalent course to 70 360 or 70-361 may substitute another Accounting course at the 300 or 400 level. (70-460 is recommended for those working towards their C.A. designation.)
Students with an equivalent course in the 71-, 72-, 73-, or 74-, areas may replace that course with another from within or outside Business Administration at the 200 level or above, provided that at least four of the substituted courses are from Business Administation.
Residency requirement: Thirteen courses must be successfully completed at the University of Windsor.

## RECOMMENDED COURSE SEQUENCE

## First Term

70-361
$71 \cdot 243$
$73-213$
One Business course
One non-Business course
(Recommended: 62-194.)
Second Term
70-360
70-456
70-457
70-461
73.220

## Third Term

70-458
72.271

75-498

### 5.1.7 PROFESSIONAL AND CERTIFICATE COURSES

The Michigan State Board of Accounting accepts graduates of the program with a major
in accounting for the Certificate Examination.
The Institute of Chartered Accountants of Ontario, the Society of Management Accountants of Ontario and the Certified General Accountants' Association of Ontario grant graduates of the Bachelor of Commerce program credits towards professional certification for the satisfactory completion of certain Business Administration course's. A faculty advisor in Accounting should be consulted with respect to the specific exemptions available.

### 5.1.8. CERTIFICATE IN BUSINESS ADMINISTRATION

This program is intended for part-time students. Courses are regular University credit courses and may be applied toward the Bachelor of Commerce degree.
Required courses:
70-151, 70-152, 71-140, 71-243, 71-340, and 71-344; Economics 41-110 and 41-111; plus four additional courses in Business Administration.
To be eligible to receive the Certificate in Business, a student must obtain a cumulative average of 5.0 or better.
In the event that an applicant has completed equivalent courses elsewhere, other courses may be substituted by the applicant with the consent of the Dean of the Odette School of Business Administration. Twelve courses must be completed at the University of Windsor.
Certificate in Arts Management
See 3.23.1.

### 5.1.9 INTEGRATED M.B.A./LL.B. PROGRAM

This special program provides students interested in a career which combines legal and business management skills with an opportunity to complete both the M.B.A. and the LL.B. degrees in four years.
For details, consult the separate brochure, or an advisor in either of the Faculties.

## 5 ODETTE SCHOOL OF BUSINESS ADMINISTRATION

### 5.1.10 MINOR IN BUSINESS ADMINISTRATION

Only students registered in the Faculty of Engineering and the Faculty of Science may choose to fulfill the requirements for a Minor in Business Administration. The Minor shall consist of one of 62-120, 62-130, 62-140, or 62-194, and one course in statistics from Engineering, Science, or Business, plus $70-$ 151, 71-140, 72-171, 73-220, 74-231, and one additional Business course. Students must obtain a minimum average of 5.0 in all courses applied to the minor.
Having applied for graduation, and after completing the requirements for the minor, the student must submit a "Minor Form" to the Office of the Dean of Business. If approved, the minor in Business Administration will be recorded on the student's transcript.

### 5.2 Course Descriptions

Business courses are restricted to those students registered in the Odette School of Business Administration or to those students whose programs otherwise require certain Business courses.
Courses below are listed according to the informal administrative units of the Faculty.
Not all courses listed will necessarily be offered in a particular term or year.
Special permission to enter courses without the stated prerequisites must be arranged with the Dean and the instructor involved.
Except as otherwise noted, there will be a minimum of thirty-nine hours of class contact for all courses. All courses will be three hours a week unless otherwise indicated.

### 5.2.1 ACCOUNTING

## 70-151. Accounting 1

An introduction to the theory and practice of accounting. Emphasis is placed on the interpretation and use of accounting information
for business decisions and on the conceppls and principles underlying such information The impact of ethical, regulatory, and envronmental aspects on preparation and use of accounting information will be discussed Topics covered include: accounting tor transactions, accounting for business assets, preparation and presentation of finarcial statements, ethics, professional judgment and interpretation and use of accounting information.

## $\mathbf{7 0 - 1 5 2}$. Accounting II

A further introduction to the theory and practice of accounting. Emphasis is placed on the concepts and principles underlying ac. counting information as well as the presentation, interpretation, and use of such information. Topics covered include: accounting for partnerships and corporations, income taxes, cash flows, analysis and interpretation of accounting information, management accounting and managerial decision making techniques. (Prerequisite: 70-151.)

## 70-256. Managerial Cost Accounting

Accounting for, and reporting and analysis of costs relating to production, marketing and administration of enterprises. Emphasis wII be on analysis of accounting information in connection with planning, controlling, reporting, performance evaluation, and decisionmaking. Behavioural and ethical issues in the use of accounting information will be dis: cussed. (Prerequisite: 70-152.)

## 70-351. Accounting Theory I

Current developments in the theory of generally accepted accounting principles and standards are introduced. An in-depth theoretical examination of the determination, measurement, classification and reporting of assets. Accounting for special items, such as accounting changes and error corrections are examined in detail. (Prerequisite: $70-152$ with a min. C [6.0] grade.)

## 70-352. Accounting Theory II

An in-depth theoretical examination of the determination, measurement, classification and reporting of liabilities, income taxes, and owners' equity. Emphasis is given to the use of time-adjustmenttechniques in connection with the accounting for bonds, pensions, and
leases. The statement of changes in financial position is studied in detail. (Prerequisite: 70-351 or consent of the instructor.)
70.358. Accounting Information Systems The design and operation of manual and computerized accounting systems. The study of control environment, management and control of transactions and accounts, such as, accounts receivable, accounts payable and inventory. Emphasis will be given to the acquisition and input of information into accounting information systems; modes andmethods of file structures and storage of accounting information; retrieval inquiry and report creation of information in files as well as financial statement preparation, analysis, andmanagerial decision making. Related issues such as audit trail, data retrieval, and dala security will also be covered. (Prerequisite: 70-256 and 73-213 or consent of the instructor.)

## $70-360$. Auditing I

An introductory course designed to provide a broad foundation for all major aspects of audting. This course focuses on objectives, concepts, standards, strategies, processes, and communications relating to external audits. Other services provided by public accountants and current developments affecting auditing and the auditing profession are considered. (Prerequisite: 70-352, and corequisite 70-358.)

## 70-361. Taxation I

This is the first of two courses designed to examine the Income Tax Act. This course focuses on the determination of residency and of income for tax purposes. Other tax related topics such as tax planning concepts, and concepts underlying the Act will be discussed. (Prerequisite: 70-351 or consent of the instructor.)

## 70-452. Independent Study in Accounting

This course must be taken under the direct supervision of an accounting faculty member. (May be taken for credit twice if content is different.) (Prerequisite: consent of the instructor.)

## 70-456. Advanced Managerial Cost Accounting and Analysis

This course is designed to focus on the role and use of accounting information in management decision making, and for formulating policy and strategy. The application of some of the advanced techniques for planning, controlling and performance evaluation will be discussed. Behavioural and ethical issues will be considered. (Prerequisite: $70-256$ with a min. of C [6.0] grade.)

## 70-457. Advanced Accounting I

A study of concepts, standards and procedures underlying intercorporate investments including portfolio investments, investments involving significant influence, and investments involving control. The preparation of consolidated financial statements under a variety of circumstances is studied in detail. Other topical areas, such as foreign currency transactions and translation, will also be covered. (Prerequisite: 70-352.)
70-458. Advanced Accounting II
A study of the topical areas in accounting such as price-level and current -value accounting; governmental and other non-profit organizations; international accounting; interim and segmented reports; forecasts and projections; effect on human behaviour and emerging issues. (Prerequisite: 70-457 or consent of the instructor.)

## 70-460. Auditing II

This course is designed to provide an indepth knowledge of the major aspects of auditing. It will examine topics such as audit sampling; public accountants' communications to users of accounting and non-accounting information; and emerging issues in auditing. (Prerequisites: 70-358 and 360.)

## 70-461. Taxation II

This course will focus on the computation of taxable income for individuals and corporations, and determination of tax. Tax planning techniques in business in a variety of situations will be discussed and other topics such as the Goods and Services Tax will also be considered. (Prerequisite: 70-361.)

## 70-462. EDP Auditing

This course is designed to focus on the integration of auditing concepts, standards
and procedures in a computerized environment. It will examine EDP general and application controls, the similarities and differences between manual and EDP systems from the auditor's perspective, and will introduce computer-assisted audit techniques, and emerging fechnologies in EDP auditing. (Prerequisites: 70-358 and 70360.)

### 5.2.2 MANAGEMENT AND LABOUR STUDIES

## 71-140. Principles of Management

As an introduction to management in organizations, this course surveys a variety of contemporary management topics including: motivation, leadership, job and organizational design, technology, ethics, demographic diversity, and international management. The functions of management are discussed from classical, behavioural, contingency and systems perspectives.
71-243. Human Resources Management Human Resources Management (HRM) is concerned with the management of people at work - a key responsibility of people at work - a key responsibility of every manager within an organization. Topics include: integrating HRM decision making within a business strategy, recruiting and selecting qualified employees, developing and evaluating human resources and retaining and motivating employees through compensation systems, labour relations, and quality of work life initiatives. In recognition of the importance of the increasingly global context to Canadian organizations, the course incorporates a continuing international focus. (Prerequisites: 71-140 or consent of the instructor.)

## 71-340. Organizational Behaviour

A study of individual and group behaviour in formal organizations as influenced by social, individual, organizational, and technological constraints. Topies include: personality; attitudes; motivation; group dynamics; roles, norms and status; decision making; power and control; conflict; change; leadership. Emphasis is placed on group projects that
allow students to gain stills at managing be. havioural differences in organizations. (Prerequisite: 71-140 or consent of the instructor.)

## 71-342. Compensation Management

This course is intended to give an understanding of the power of organizational rewards and managing this power for organizational effectiveness. This course entails an outline of the major concepts and principles of equitable reward design within organizations. Topics include the planning of salary and wages, pay equity, incentive pay, benefits, non-financial rewards, and the clarification of the linkages between rewards and desired behaviours. Special emphasis is given to reward system design and the evaluation of compensation program effectiveness. (Prerequisites: 71-243 and 71. 340.)

71-344. Labour-Management Relations A comprehensive introduction to the dynamic world of labour and managementrelations focusing on the unionized sector. The problems, issues, and challenges growing out of the labour-management relationship are examined against a broad background of information, including: the differences between union and non-union workplaces; the development and operation of labour unions; the impact of labour legislation; the negotiation and administration of collective agreements; and the resolution of industrial conflict. Given the size and importance of this unionized workforce in Canada, the knowledge and skills developed in this course have wide application. (Prerequisite: $71-243$ or Semester 3 or above standing in the Labour Studies program.)

## 71-347. Women at Work

This course examines women's work experiences in the workplace and in the household from a critical perspective. Topics include the division of labour by sex, the value of women's labour, sexual harassment, and women's union participation. (Prerequisite: 71-140 or Semester 3 or above standing in the Labour Studies program.)

## 71383. Managing in a Global Business Environment

This course examines the management process for firms operating in the global business environment; we discuss planning, organizing, staffing, directing, and control issues from an international perspective, induding global, ethical and environmental issues. Aparticular focus of the course is the management of people; we discuss staffing and training choices for parent country nationals, host country nationals and third country nationals, and we explore issues relating to motivation in diverse cultural contexts. (Prerequisite: 71-243.)

## 71441. Training and Development

This course has an experiential focus: student teams are responsible for developing and presenting their own training programs. The focus of this course is on the three major aspects of training and development efforts: (1) needs assessment, (2) program development, and (3) evaluation. Course topics include the design of training programs, adult learning models, development managenial skills, and the design of effective workshops. This course has an experiential focus; student teams are responsible for development and presenting their own training programs. (Prerequisites: 71-243 and 71340.)

## 71443. Human Resources Research and Information Systems

This course is designed to provide the student with an understanding of the research methodology as applied to the fields of human resources management and industrial relations. Topics will include experimental designs, field studies and surveys, scale development, and ethical issues in research. The course also will introduce the basic development, implementation, and use of a computerized human resources information system. (Prerequisites: 71-243, 71-340, 71 344, and 73-213.)

## 71-445. Organization Design

This course is designed to provide the student with an understanding of the importance of structure and processes in the analysis of modern complex organizations. It addresses how the internal structures
should be changed, renewed, and adapted in view of external environmental threats and opportunities emanating from political, economic, social, legal, technological, and demographic changes. Topics include: organizational goals and effectiveness, structure and design, bureaucracy and life cycle, structural archetypes, information and control, power and politics, intergroup relations and conflict, structure-strategy relations and organizational renewal. This course utilizes the case method and other applied problemsolving skills in analyzing and evaluating organizational structures and processes. (Prerequisite: 71-340.)

## 71-446. Topics in Management and Labour Studies

This is a seminar course covering major concepts or current problems or issues in the area of Management and Labour Studies. The topic to be covered in a particular semester will vary and will be announced in the previous semester. Interested students should consult the Area Convenor of Management and Labour Studies. (May be taken for credit twice if content is different.) (Prerequisite: consent of the instructor.)

## 71-448. Labour Relations Law and Employment Legislation

Legislation, administrative agencies and courts play a significant role in shaping em-ployer-employee relationships. this course aims to increase the knowledge and provide analytical skills to students who are interested in employment relationships in union and non-union workplaces. The course includes an analysis of labour relations law, employment standards law, the occupational health and safety law. Emphasis will be placed on Ontario laws. Lectures and case discussions will be used. (Prerequisite: 71-344.)

## 71-449. Collective Bargaining

Various aspects of union-management negotiations in the private and public sector will be discussed. A key aspect of the course is a bargaining simulation played by students assuming the role of union and management negotiators. Grievance arbitration and other dispute settlement procedures will also be discussed. Students will learn nego-
tiation and conflict resolution skills relating to the union-management relations. (Prerequisite: 71-344.)

## 71-481. Diversity in the Workplace

This course will address the knowledge and skills managers must develop in meeting the opportunities and challenges created by the diversity in the labour force. It will draw on the literature from a number of disciplines in focussing on interpersonal relationships as managers interact with and work with persons who are different from themselves. The human rights legislation will provide the framework for discussions on managing and valuing diversity in terms of gender, age, race, religion, ability and other groups. The course will use lectures and case discussions on the role of union and management in implementing equity in the workplace. (Prerequisite: 71-243.)

## 71-485. Human Resources Planning

This course is concemed with planning of the human resources needs of organizations, focusing, in particular, on the role of the Human Fesources Management function in this task. The objective is to provide an understanding of how the essential elements of the human resources planning process, in both unionized and non-unionized organizations, can be designed to match the wider organizational context. Topics include the assessment of human resources strategy and the application of planning principles to the different activity areas of human resources management, such as staffing, development and the management of diversity. An ongoing theme is the evaluation of how strategic human resources management contributes to organizational effectiveness. (Prerequisites: 71-243, 71-340 and 71-344.)

## 71-492. Independent Study Course

The student, with the agreement of the instructor, will select, research and report on a topic. (May be taken for credit twice if content is different.) (Prerequisite: consent of the instructor.)

### 5.2.3 FINANCE

## 72-171. Business Finance I

A basic theoretical framework for decision making in financial management. The pimary objective of the course is to study and understand the concepts and principles offinancial management of the business enterprise.After an introduction to managerial finance, the course will cover the areas off. nancial analysis, planning and control, and working capital management. (Prerequisites: 70-151 and 62-194 or equivalent.)

## 72-271. Business Finance II

The focus of this course is the long-term area of financial management. The objective is to develop an understanding of the concepts and principles of the management of capital assets and resources. Topics indude capital budgeting, cost of capital, capital structure, sources of long-term financing, and budgeting will be covered. (Prerequisites: 72-171 and 73-105.)

## 72-371. Intermediate Corporate Finance

 This course covers important topics in Corporate Finance regarding long-term investment and financing decisions. It provides an in-depth analysis of valuation and capital budgeting, risk and return, capital structure and dividend policy, long-term financing, and mergers and acquisitions. The approach will be oriented towards the development of skills which serve to enhanced decision making in a corporate setting. (Prerequisite: 72-271.)
## 72-373. Working Capital Management

A seminar in working capital management using case studies. Emphasis is placed on domestic and international cash management, control of accounts receivable, princples of inventory management, shor and intermediate term financing. (Prerequisite: 72-271.)

## 72-374. Finance: Long-term Financial Management

A seminar course in long-term financial management. Particular attention is directed toward long-term sources of funds, the firm's capital structure, and the cost of the various sources of long-term funds. Principles are il:
lustrated by means of case studies. (Prereqvisite: $72-271$.)

## 72-375. Pension Management and Design

This course provides an overview of pension administration and design. Emphasis is placed on analyzing the problems corporafions face in establishing, changing or terminating a pension plan. The concepts and lechniques used in managing existing plans are also discussed. (Prerequisite: 72-271.)

### 72.376. Insurance and Risk Management

 The study of risk management in a personal and corporate environment. The concepts of insurable risks and types of insurance will be discussed. Life and liability insurance will be the prime focus especially with respect to reduction and transfer of risks through these insurance types. (Prerequisite: 72-271 or consent of the instructor.)
## 72-377. Principles of Insurance

Astudy of common types of corporate and personal insurances. Life, property, and liability insurance will be analyzed in depth. (Prerequisite: 72-271 or consent of the instructor.)

## 72-471. Investment Fundamentals

Appraising bonds, preferred, and common stocks as vehicles for investment. The course also involves the study of alternative investments, the market setting, technical analysis, and securities legislation in Canada. (Prerequisite: 72-271.)

## 72-472. Portfolio Management

The shaping of portfolios to fulfill the needs of individuals and institutions including riskreturn concepts, diversification, beta analysis, and market efficiency. (Prerequisite: $72 \cdot 371$. )

## 72-475. Management of Financial Institutions

An analysis of the assets and liabilities of major Canadian financial institutions. An evaluation of the domestic and intemational financial problems faced by these institufions. A review of financial systems outside of Canada. (Prerequisite: 72-271.)

## 72-476. International Financial Management

A study of intemational corporate financial management, international banking, and financial markets. Emphasis is placed on foreign exchange and exposure management. The financial problems and risks faced by multinational corporations and banks are also discussed. (Prerequisite: 72-271.)
72-477. Analysis of Financial Decisions This course focuses on the quantitative tools and models that have been most widely used in financial management, including: measurement and management of different dimensions of risk, valuation of different securities, arbitrage pricing relationships across securities markets. It is also to acquaint students with a number of important issues in current financial industry and to introduce some basic financial research techniques. (Prerequisite: 72-371.)
72-479. Independent Study
(May be taken for credit twice if content is different.) (Prerequisite: consent of the instructor.)

### 5.2.4 MANAGEMENT SCIENCE

## 73-105. Business Data Analysis I

The presentation and analysis of data in a business environment. Topics include graphical and numerical descriptive statistics; probability and discrete vs. continuous probability distributions; single population estimation and hypothesis testing; and simple linear regression and correlation. (Antirequisites: 02-250, 65-250, 65-205, 85-222, or any other introductory Science statistics course.) (Prerequisite: 62-194 or equivalent.)

## 73-205. Business Data Analysis II

Statistical inferences in a business environment. Topics include two-population inference, non-parametric statistics, ANOVA, goodness of fit; test for independence, and multiple linear regression. (Antirequisite: 41212.) (Prerequisite: $73-105$ or equivalent.)

## 73-213. Introduction to Management Information Systems

This course provides an overview of Management Information Systems (MIS). Topics
include: various types of MIS such as Information Reporting Systems, Decision Support Systems, and Office Automation Systems; introduction to hardware and software technology; personal, functional and enterprise information systems; and the value added to an organization by MIS. (Prerequisite: 60-104 or consent of the instructor.)
73-220. Quantitative Decision Models I
An introduction to the use of quantitative approaches to decision making. Topics include linear programming (model formulation and applications, computer solution, sensitivity analysis, and interpretation), transportation model, project management; PERT/CPM, inventory control. (Prerequisite: 73-105.)

## 73-305. Statistical Quality Design and Control

The course discusses some of the important statistical concepts and methods for quality design and improvement. Topics include: statistical process control, development and interpretation of different kinds of control charts for variable and attribute data, designs of experiment for product/process improvement. A software package may be required to simulate the operation of an actual process, and to illustrate the methodology. (Prerequisites: 73-205 or consent of the instructor.)

## 73-311. Introduction to Data Base Management

A study of the planning and design of data base systems in a business organization. Topics include: data concepts and modelling, data base planning, data structure and storage techniques, and data base design. A micro-computer-based data base software package will be used for regular assignments and team projects. (Prerequisite: 73-213.)
73-320. Quantitative Decision Models II An introduction to the use of quantitative approaches to decision making under uncertainty. Topics include: inventory management under probabilistic demand, waiting line models or queues, computer simulation, decision analysis, multi-criteria decision making. (Prerequisite: 73-220.)

73-331. Operations Management I
An introduction to the problems and techniques encountered in the production of goods and services. Topics include: forecasting, capacity planning, facility location and layout, aggregate planning, inventories and materials requirement planning. (Prerequisite: 73-220.)
73-425. Special Topics in Management Science
(May be taken for credit twice if contentis different.) (Prerequisite: consent of the instruator.)
73-429. Independent Study
(May be taken for credit twice if contentis different.) (Prerequisite: consent of the instruc tor.)

## 73-431. Operations Management II

The course explores other substantive and analytical issues in the planning and control of operations and manufacturing. Topies include: operations scheduling, quality and assurance, reliability and maintainability. and recent advances in manufacturingtechnologies and control. Team or individual presentations on selected topics may be required. (Prerequisite: 73-331.)

### 5.2.5 MARKETING

## 74-231. Principles of Marketing

An introduction to the principles, concepts and techniques of marketing. A significant objective of the course is the development of a basic understanding of the marketing proc ess and its role in the organization, in the economy, and in global markets.

## 74-232. Marketing Problems-Applications and Decisions

The application of concepts and techniques in marketing through the use of cases and simulation gaming. The course will apply the concepts learned in 74-231, Principles of Marketing, in a managerial, decision-making format. (Prerequisite: 74-231 and Co -requlsite: 72-171.)
74-332. Research Methods in Marketing The use of analytical methods to improve the efficiency of the marketing operations of
companies and other organizations with emphasis on the development of a broad understanding of the uses and methods of research as applied to marketing. (Prerequsites: 73-105 and 74-232.)

## 74-334. Consumer Behaviour

An analysis of consumer and buyer behavbur and their implications for marketing dedisions. The course examines theories of, and research in, consumer behaviour through cases and group projects. (Prerequsite: 74-232.)

## 74-335. Channels of Distribution

An examination of the channels of distribuion for consumer and industrial goods. Topics covered include an analysis of the evolution of marketing channels, their current structure, the middlemen and institufons that comprise marketing channels, and the legal and behavioural environment of maketing channels. (Prerequisite: 74-232.)

## 74337. Quantitative Analysis for Marketing Decisions

The application of quantitative techniques to marketing problems and strategy. (Prerequisites: 73-105 and 74-232.)

## 74338. Retail Marketing Management

 Anintroduction to retailing concepts and the examination of various managerial issues related to retailing, including retail marketing strategy formulation, customer care and senvice, product assortments, retailer-supplier relations, pricing, inventory control, and bcation and layout decisions. (Prerequisite: 74-232.)74339. Business Logistics Management An examination of the management of the business logistics function. Topics include the modes and legal forms of transportation, transportation management, inventory management, location selection and analysis, warehousing, materials handling, and customer order processing and service. (Prerequisite: 74-232.)

## 74-431. Independent Study

This course is of varying content dealing with topical issues in marketing. The course might focus on a specific functional area or a particular environment for the application of marketing concepts. Administration of the
course will vary as appropriate with its content and might involve a literary survey, research project, experiential exercise, or other format. (May be repeated for credit if content is different.) (Prerequisites: 74-232 and consent of the instructor.)

## 74-432. Product Planning for Marketing Management

An overall view of the product planning function (including the planning of services) in a company or institution, including the development and appraisal of product ideas, optimal organization of the planning process, product audits, financial and legal aspects of product planning, and intra-organizational factors. (Prerequisite: 74-232 or consent of the instructor.)

## 74-435. International Marketing

This course is concemed with the problems and opportunities of marketing in foreign environments. It will focus on the cultural, economic, and geographical problems encountered in managing the marketing function from a Canadian manager's perspective. (Prerequisite: 74-232.)

## 74-436. Advertising Management

A study of how to approach the management of advertising in business enterprises. The focus will be on making advertising decisions (e.g., setting advertising objectives, creating advertising campaigns, developing media strategies, and measuring advertising results) in relation to the overall marketing strategy of the business or non-business enterprise. (Prerequisite: 74-232 or consent of the instructor.)

## 74-437. Sales Management

The study of the personal selling area, including an examination of the role and responsibilities of the salesperson, the sales management, and sales management functions. (Prerequisite: 74-232.)
74-439. Marketing Strategy and Planning An advanced course in the management of the marketing function. The course will include an appraisal of the key issues in the management of the marketing function with major emphasis on the development, formulation, implementation, and control of the firm's marketing plan. Emphasis will also be
placed on current key issues in the marketing area and global marketing considerations. (Prerequisites: 74-332 and 74-334, or consent of the instructor.)

### 5.2.6 BUSINESS STRATEGY AND ENTREPRENEURSHIP

## 75-290. Fundamentals of Entrepreneurship

This is a survey course designed to introduce students from all faculties to entrepreneurship as a career option. The entrepreneurial process will be explored through a mix of lectures and case studies. Topics include the identification of profitable business ideas, assessment of business opportunities, entry strategies, marshalling resources, and the start-up process. (Prerequisite: Semester 3 standing or above.)
75-390. Technological Entrepreneurship This course is designed for students with engineering or science backgrounds. This course will focus on the subject of creating a manufacturing or a technology-based enterprise. Through a mix of lectures, discussions, case studies, and field work, these topics will be examined: developing product concepts, prototype development and concept testing, estimating market potential, attracting stakeholders, writing business plans, raising funds, and assembly of needed resources.

## 75-391. New Venture Formation

Designed for students who choose entrepreneurship as a career option, this course is an in-depth study of the process of drawing the blueprints for a new enterprise including: developing business ideas, developing business concepts, conducting feasibility studies, choosing a legal form or business, writing business plans, identifying and approaching sources of money, raising funds, and putting together a package of resources to start an enterprise. (Prerequisites: 71-140, 72-271, 74-231.)

## 75-392. New Venture Management

Building on the knowledge gained in 75-391, students examine the details of two main stages in the life of a business venture: start-
up and venture growth, and the stabilization phase. Topics include: leveraging, negotialing, teaming, raising equity capital, actual acquisition of physical resources, building an organization, generating sales, establishing information and control systems, ofsis management, managing growing pains, and stabilizing the enterprise. (Prerequisite: 75-391.)

## 75-393. International Business

This course is designed to provide students with the tools to think globally and manage internationally. This survey course covers a wide range of topics including, the global trade and investment environment, the international firm's cultural, political, and competitive environment, and the management and operations of international firms. The tocus throughout the course is on the changes that occur when a firm moves from a domestic focus to a global one. (Prerequisites: 71 140, 72-271, 74-231.)

## 75-397. The Law and Business Administration

A survey of the law pertaining to business administration. Topics include: the legal approach to business problems, contracts, sale of goods, bills of exchange, agency, bailment, real property, partnerships, corporations, and bankruptcy.

## 75-401. Co-op Work Term I

75-402. Co-op Work Term II
75-403. Co-op Work Term III
75-404. Co-op Work Term IV
75-411. Co-op Work Term I (Business and Computer Science)

## 75-412. Co-op Work Term II (Business and Computer Science)

75-413. Co-op Work Term III (Business and Computer Science)
75-414. Co-op Work Term IV (Business and Computer Science)

## 75-490. Strategy in the Global Business Environment

This course builds on the basic knowledge provided in 75-393 to provide students with an in-depth appreciation of global management issues. The course focuses on developing and implementing global strategies.

This includes a detailed analysis of the interrational environment and the forces that determine global effectiveness, as well as consideration of different forms of entry aralable to firms and the specific factors that must be addressed to implement global strategies successfully. (Prerequisite: 75333.)

## 75491. Special Topics in Strategic Management

This is an advanced course designed to examine, in-depth, the strategic issues facing business decision makers. Coverage will vary to reflect the contemporary issues and concerns of today's executives. (May be aken for credit twice if content is different.) (Prerequisite: Semester 7 or Semester 8 standing.)

## 75-492. Introduction to Business Consulting

An introduction to the theory and practice of business consulting. Students will underake individual and team consulting engagements under faculty direction. (Prerequisite: Semester 7 or Semester 8 standing.)

## 75-493. Field Study in <br> Strategic Management and Entrepreneurship

In this course, teams of students study an actual firm focusing on identifying the strategicissues facing the firm, the needed stralegic plans for addressing them, and the implementation of such plans. Students pursuing the entrepreneurial option can also take this course to finalize the prototype for the business they intend to start. (Prerequisite: Semester 7 or Semester 8 standing.)

## 75-494. Directed Study in Strategic <br> Management and <br> Entrepreneurship

Under faculty supervision, students undertake an individualized program of independent study to pursue, in great depth, a lopic in strategic management or entrepreneurship where they can apply the mowledge gained in prior courses. (May be aken for credit twice if content is different.) (Prerequisite: consent of instructor.)

## 75-498. Strategic Management

Taught from the perspective of the CEO, this is the capstone course of the B.Comm. Program. It is designed to integrate the knowledge gained in all business courses and focus such knowledge on the central task of managing the firm in its entirety. (Prerequisites: Semester 7 or Semester 8 standing for B.Comm. students; or Semester 5 or Semester 6 standing for B. Comm. for University Graduates students; and all other required Business courses.)

## 6 FACULTY OF EDUCATION

## Dean

Patricia Rogers; B.A. (Oxon.),M.Sc.
(Toronto), Ph.D. (London).

## OFFICERS OF INSTRUCTION

## Professors

Crawford, W. J. lan; B.Sc. (Hons.) (Windsor), M.A. (Ed.) (Ottawa), M.Ed., Ed.D. (Wayne State)-1973.
Laing, Donald A.; B.A., M.A., Ph.D. (Toronto)-1976.
Williams, Noel H.; B.A. (Sir George Williams), M.Ed. (McGill), Ph.D. (Alberta)1976.

Kuendiger, Erika; Staatsexamen (Aachen), Dr. Phil. (Saarbruecken)-1983.
Morton, Larry; B.A. (Waterloo), B.Th. (O.B.C.), B.Ed. (O.T.E.C.), M.A., Ph.D. (Toronto)-1988. (Co-ordinator of Graduate Studies)
Rogers, Patricia; B.A. (Oxford), M.Sc. (Toronto), Ph.D. (London)-2001. (Dean of the Faculty of Education)

## Associate Professors

McKay, Linda; B.S. (North Carolina), M.S. (Maryland), Ph.D. (Wayne State)-1968.
Diffey, Norman R.; B.A., Dip. Ed. (Oxon), M.A. (McMaster), Ph.D. (McGill)-1987. (Co-ordinator of Practice Teaching)
Shantz, Doreen; B.A. (Laurier), M.Ed., Ed.D. (Toronto)-1987.
Flewelling, Janet; B.A. (Hons.) (Guelph), B.Ed. (Queen's), M.Ed., Ed.D. (Toronto)1990.

Hurley, Noel P.; B.A., B.Ed., M.Phil. (Memorial), Ph.D. (Ottawa)-1991. (Co-ordinator of Concurrent Programs)
Stenlund, Vern; B.A., B.Ed. (Western Ontario), M.Ed. (Windsor), Ed.D. (Michigan)1991. (Co-ordinator of In-Service Programs)

Starr, Elizabeth; B.A. (Guelph), B.Ed. (Queen's), M.Ed. (Acadia), Ph.D. (Al-berta)-1996.

Kellenberger, David; B.A.Sc., B.Ed., M.Ed (Windsor), Ph. D. (Toronto)-1990.

## Assistant Professors

Tarailo, Michele; B.F.A., B.Ed. (Windsor), M.F.A. (Cranbrook), Ed.D. (Wayne State)1990. (Co-ordinator of Pre-Service Pro gram, Kent County)
Egbo, Benedicta O.; B.Ed., Dip.Ed. (Alberta), M.A., Ph.D. (Toronto)-1998.
Glassford, Larry; Dip.Ed., B.A. (Westem Ontario), M.A. (Carleton), Ph.D. (York)-1998. (Co-ordinator of the Pre-Service ProgramWindsor)
Antosz, Edmund; B.Sc. (Loyola), M.A. (Sir Geogre Williams), M.A. (Concordia), Ed.D. (Michigan)-1999.
Clovis, Christopher, B.Sc. Ph.D. (Chelsea College), Cert.Ed. (Avery Hill College)1999.

## Limited Term and Part-Time Appointments

Brown, Jerome V.; B.A. (Iona College, N.Y.), M.A., Ph.D. (Toronto), M.S.L. (Pontif. Inst.)-1961.
Romiens, Todd; B.A. (Wilfrid Laurier), M.Ed. (Wayne State)-1973.
McGeown, Casimir; B.A. (Open University), M.Ed. (Windsor)-1981.

Matte-Gasparovic, Jan; B.H.K., B.Ed.. M.H.K. (Windsor), Ed.D. (Wayne Slate)1989.

Bellperche, Sue; B.M., B.Ed. (Windsor), M.M. (Wayne State)-1989. (Co-ordinabr of the Pre-Service Program-Kent)
Bontront, Jean-Louis; B.Ed., B.Sc., M.SC. (Windsor)-1993.
Tousignant, Wayne; B.F.A., M.F.A., B.Ed. (Windsor)-1993.
Smith, Kara; B.A. (Waterloo), B.Comm. (Windsor), B.Ed., M.Ed. (Western Ontario), Ph.D. (Stirling)-1998.
Salinitri, Geri; B.Sc., B.Ed., M.Ed. (Wind-sor)-1999.
Couvillion, Tom; B.A., B.Ed., M.Ed. (Whd-sor)-1999.

### 6.1 General Information

## History

The Faculty of Education, University of Windsor, was established on July 1, 1970, thus becoming the seventh Faculty in the University. Its predecessor, Windsor Teachers' College, founded in 1962, trained its students to teach in the elementary schools of Ontario. Integration with the University opened the way to the development of new programs of study designed to prepare candidates for teaching in both elementary and secondary schools.

## The Role of the Faculty of Education

Teaching is a familiar, common experience prevalent during a large part of everyone's ilif. Although teaching is familiar, it is also elusive; although it is common, it is also extraordinary; although it is prevalent, it is also esoteric. Teaching is a complex process inletwining many philosophies, approaches, and facets.
Hfollows from this view of teaching that leachers must be extremely knowledgeable and highly expert in order to make sound dedisions. The role of the Faculty of Education, University of Windsor is to present a thorough knowledge base for teaching and to ensure that teachers use this knowledge base appropriately in making complex juggements on behalf of their students. Such judgements must be based upon a knowledge of curriculum and leaming theory, human development and cognition, and instructional design, implementation, and evaluation. Most importantly, the prospective teacher must be able to connect this knowledge to the understandings, dispositions, and conceptions that individual students bring with them to the classroom. The task of teaching is less a matter of "covering the material" than of connecting with the student in whatever ways are necessary to make knowledge the possession of the kamer.

Teaching is not routine. It is a complex human phenomenon presenting a major challenge to its practitioners.
Arguments about the purposes of education in society, how to teach, what to teach, and when to teach it, and the interactive relationship between the teacher and the learner have long been subjects for study and debate. Consequently, the ideal way of preparing teachers has been an elusive goal, and it would seem that there are as many notions and opinions as there are people to express them. The debates continue. The Faculty of Education, however, although acknowledging the importance of the continual critical examination of the processes of education in all its aspects, has carefully and thoughtfully selected courses and leaming experiences to prepare its students to begin the practice of teaching and to become knowledgeable about educational problems, issues and technology.

### 6.2 Regulations

### 6.2.1 LIMITATION OF ENROLMENT

The Faculty of Education reserves the right to limit the number of registrants in any program or individual course of instruction described in this Calendar in cases where the Faculty's teaching and other resources cannot accommodate all of the qualified applicants. In addition, not all courses listed may be offered.

### 6.3 Programs of Study

### 6.3.1 BACHELOR OF EDUCATION (GENERAL) DEGREE-PRE-SERVICE PROGRAM

## APPLICATION

Candidates wishing to enter the one-year, pre-service program of study must apply through the Ontario Universities' Application Centre using the Application for Admission to Teacher Education form.

Applications must be received by the Centre by the announced date.
Applicants select one of three possible levels of teaching specialization: Primary-Junior (Junior Kindergarten to Grade 6), Junior-Intermediate (Grades 4 to 10), and Intermediate-Senior (Grade 7 through secondary school). Pertinent theory and teaching lore (presented in an integrated manner at the Faculty of Education) are supplemented by directed observation and practice teaching in actual settings.

## SELECTION OF CANDIDATES

Candidates will be selected for admission to the Pre-Service program on the basis of superior academic qualifications; some students will also be admitted on the basis of academic profiles.
(If two or more applicants have identical academic qualifications, other criteria may be applied.)

## ADMISSION REQUIREMENTS

1) A candidate for admission to the one-year, pre-service program of study leading to the Bachelor of Education (General) Degree and the Ontario Certificate of Qualification must submit proof of graduation with an approved degree from the University of Windsor or another accredited university.
The candidate's university degree program must include at least ninety academic credits or equivalent beyond the Ontario Secondary Diploma (or equivalent.)
2) A candidate who wishes to qualify for the Ontario Certificate of Qualification, Interme-diate-Senior concentration, will be required to select two teachable subjects from the following: Biology, Chemistry, Computer Science, Dramatic Arts, English, French, Geography, History, Mathematics, Music-Instrumental, Music-Vocal, Physical and Health Education, Physics, Religious Education in the Roman Catholic Schools, Science (General), Individual and Society, and Visual Arts.
Junior-Intermediate candidates will be required to select one teachable subject from the same list, excluding Individual and Society.

A candidate for the Intermediate-Seniorarea must have as prerequisites for the major teachable subject at least five full coursesor equivalent (thirty credits) and for the minor teachable subject at least three full courses or equivalent (eighteen credits). Prerequisites for Individual and Society include courses in Anthropology, Psychology, and/or Sociology. Candidates for the Junior. Intermediate area should have as prerequisites for their teachable subject at least three full courses or equivalent (eighteen credits). Unless special arrangements are made, classes in the above subjectsmay not be offered unless there is sufficient enroll. ment.
3) The following are required of all applicants:
(a) completed application form with the documents noted on form;
(b) birth certificate and Social Insurance Number (S.I.N.);
(c) proof of Canadian Citizenship or permanent residency as defined by the Immigration Act (Canada), or of eligibility for employment in Canada (if the Ontario Certificate of Qualification or a Temporary Letter of Standing is to be awarded);
(d) marriage certificate (in the case of married women) or other legal proof of change of name must be submitted where the name being used differs from that shown on the birth certificate.
4) Additional requirements:
(a) Prior to September 15, the candidate must present proof of a tuberculin test as required by the Ontario Ministry of Health. The test must have been administered during the previous twelve months.
(b) After acceptance, students are required to submit to the Faculty a recent photograph (passport-size) for identification purposes within the Faculty of Education.
(c) A signed statement indicating the candidate has no criminal record.

## DEGREE REQUIREMENTS

1) The letter grading system of the University isused in reporting courses and practice paching (see 2.6.3). Candidates who obtain essthan C standing in (a) practice teaching, or (b) three or more final course grades will not be recommended for certification. Candidates who obtain a grade of $F$ in any course will not be recommended for either a degree or certification.
2) Sessional records include term assignments, oral and written tests, and practical work. The general attitude of the candidate whis or her work, adaptability to teaching, and the probability of future success as a leacher may be taken into consideration in delermining sessional standing.
3) Final grades awarded are based upon the accumulated evaluation of the candidate. Formal final examinations may be held; however, no formal supplemental examinafons will be allowed.
4) Candidates who have passed all course work with C standing or higher, but who did not obtain the required standing in practice eaching, upon application to the Dean, may be allowed to repeat the regular practice leaching program in toto in the following year, subject to the payment of the appropriale lee, and the Dean's approval.

## TEACHER CERTIFICATION

The Faculty of Education provides programs and courses in teacher education but does notissue a teaching certificate. The responsibility for teacher certification lies with the Ontario College of Teachers. Upon successful completion of the requirements for leacher certification in Ontario, a recommendation will be made by the Dean of the Faculty to the Ontario College of Teachers indicating eligibility for the Ontario Certificate of Qualification. Candidates who successfully complete either the Consecutive or the Concurrent Programs of Study and Practice Teaching will be awarded the B.Ed. degree of the University of Windsor, and will be recommended to the Ontario College of Teach-
ers indicating eligibility for an Ontario Certificate of Qualification.

Honours Specialist Qualifications normally may be obtained through the B.Ed. (Hons.) program subsequent to at least two years of successful teaching experience in Ontario.

## OUTLINE OF STUDY

The number of lecture hours per week is indicated in parentheses after each course listed.

## Compulsory Courses:

80-203. Psychology in Education (2)
80-204. Education of Exceptional People (2)

80-205. Organization and Management in Educational Administration (2)
80-499. Practice Teaching

## Voluntary Option:

80-200. Religious Education in Roman Catholic Separate Schools (1)

## Additional Requirements for Primary Junior

 Candidates:80-301. General Methodology: Content and Methods (9)

## Additional Requirements for Junior-Intermediate Candidates:

80-302. General Methodology: Content and Methods (6.5)

Junior-Intermediate candidates must also select one option from the following:

## TABLE OF OPTIONS

80-352. Art (3)
80-353. Computer Science (3)
80-356. English (3)
80-358. French (3)
80-359. Geography (3)
80-362. History (3)
80-365. Religious Education (3)
80-366. Mathematics (3)
80-367. Music-Vocal (3)
80-368. Music-Instrumental (3)
80-369. Physical and Health Education (3)

80-373. Biology (3)
80-374. Chemistry (3)
80-376. Physics (3)
80-379. Dramatic Arts (3)
80-380. Science-General (3)
Additional Requirements for IntermediateSenior Candidates:

80-303. General Methodology: Content and Methods (5.5)

Intermediate-Senior candidates must also take two options from the following:

## TABLE OF OPTIONS

80-352. Art (3)
80-353.
Computer Science (3)
80-356.
8nglish (3)
80-358. French (3) $\quad$ Geography (3)

The Concurrent Bachelor of Science (Science, Technology, and Society)/Bachelor of Education Program is offered jointly over four years by the Faculty of Science and the Faculty of Education. The aim is to provide the opportunity and training to individuals who wish to teach science at the intermediate and senior levels (Grade 7 through secoondary school).

Graduates of this program will acquire the necessary skills and knowledge for teachable subjects and fulfill the requirements for certification by the Ontario College of Teachers. It offers students the opportunity to begin working towards teaching certification early in their academic careers. Studenls can choose a Life Sciences or a Physical Sciences stream in the B.Sc.(STS) program while concurrently studying education and doing practice teaching in schools.

## APPLICATION AND ADMISSION

Admission is to first-year only. Applicants must present six OAC credits, including English I, Calculus, Algebra and Geomety, and two of Biology, Chemistry, or Physics. An A average is recommended. Admission also requires completion and submission of a student profile record by the prescribed deadline and a successful joint interview with representatives of the Facully of S ence and the Faculty of Education.
Enrolment in this program is limited.
For program requirements and course sequence, see "Faculty of Science", 4.2.3.

### 6.2.3 CONCURRENT BACHELOR OF ARTS (OR BACHELOR OF SCIENCE)/BACHELOR OF EDUCATION/DIPLOMA IN EARLY CHILDHOOD EDUCATION

The Concurrent Bachelor of Arts (or Bachelor of Science)/Bachelor of Education/Dploma in Early Childhood Education Program is offered jointly over five years by the Faculty of Arts and Social Sciences (or the Faculty of Science) and the Faculty of Education, in co-operation with St. Clair College. The aim is to provide the opportunity and training to individuals who wish to teach at the preschool and Primary-Junior levels.
Graduates of this program will receive two degrees and a diploma and will acquire the necessary skills and knowledge to fulfill the requirements for certification by the Ontario College of Teachers.

## PROGRAM REQUIREMENTS

Al students are required to complete the trity-course requirement of the University of Windsor General B.A. (or B.Sc.) degree program, in addition to the Education courses $80-203$ ( 48 hours), $80-204$ ( 48 hours), $80-$ 205 (48 hours), and 80-301 (144 hours), and 45 days ( 225 hours) of Practice Teaching (80-499). The St. Clair College Early Childhood Education component will consist of aleven courses, ED 117, ED 120, ED 130, ED 209, ED 210F, ED 310, ED 402F, ED 408, ED 409, and 640 hours of Field Placement. Requirements can also be met for baching in the Roman Catholic school sysem. With additional study in the University's Summer Session, students may be able to accelerate the completion of their B.A or B.Sc. program. With Summer and and/or additional Fall/Winter studies, they may pursue four-year B.A. or B.Sc. programs as well.
COURSE SEQUENCE

## ARST YEAR

Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; plus the B. Ed course 80-301 (Language Arts and Math); and the E.C.E course ED 210 F (Curriculum Methods).
Spring Term: two weeks of E.C.E Preschool and two weeks of B.Ed. Primary Grades practice teaching ( 150 hours total).

## SECOND YEAR

Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-203 (Educational Psychology); and the E.C.E course ED 120 (Child Behaviour Management).
Spring Term: four weeks of B.Ed. JK/SK practice teaching ( 150 hours total).

## THIRD YEAR

Fall Term: five B.A. (or B.Sc.) courses.
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-301 (Art/Music/Phys. Ed.); and the E.C.E course ED 130 (Child Development).

Spring Term: four weeks of B.Ed. Primary Grades practice teaching (150 hours total).

## FOURTH YEAR

Fall Term: the E.C.E. courses ED 310 ( In fant/Toddler) and ED 402F (Atypical Child); and the B.Ed course 80-204 (Exceptional Child).
Winter Term: three B.A. (or B.Sc.) courses; the B.Ed course 80-301 (Social Studies/Science/Computers); and the E.C.E course ED 117 (Introduction to E.C.E.).
Spring Term: four weeks of E.C.E. Infant/Toddler practice teaching (150 hours total).

## FIFTH YEAR

Fall Term: three B.A. (or B.Sc.) courses; the B.Ed.course 80-205 (Educational Administration); and the E.C.E. course ED 409 (Parent Ed.).
Winter Term: the E.C. E courses ED 209 (Curriculum Development) and ED 408 (Assessment); the B.Ed. Primary Grades Practice Teaching course 80-499 (45 days/225 hours).
Spring Term: four weeks of E.C.E Infant/Toddler practice teaching ( 150 hours total).

## STANDING REQUIRED FOR CONTINUATION

Students must comply with the general university regulations (see 2.4.19), and with the academic regulations of their particular B.A. or B.Sc. program. In addition candidates who obtain a final grade of less than a C in (a) practice teaching, or (b) three or more Education courses in the program will not be recommended for certification. Students may repeat only one B.Ed. course for upgrading throughout the program, excluding 80-499.

## GRADUATION

Graduates of the program will receive both the Bachelor of Arts (or the Bachelor of Science) and the Bachelor of Education (General) degrees from the University of Windsor,
and the Diploma in Early Childhood Education from St. Clair College.
The Faculty of Education does not issue a teaching certificate. The Ontario Certificate of Qualification is issued by the Ontario College of Teachers upon recommendation of the Dean of the Faculty of Education. Only Canadian citizens or Permanent Residents of Canada qualify for this certificate. Under certain conditions, the Ontario College of Teachers may grant a non-Canadian citizen a Interim Certificate of Qualification.

### 6.3 Course Descriptions

### 6.3.1 COURSE DESCRIPTIONS-PRE-SERVICE PROGRAM

All Pre-Service courses are two-term courses unless otherwise indicated.

## 80-200. Religious Education in Roman Catholic Separate Schools

This course is provided for those preparing themselves for the ministry of teaching in the Roman Catholic Separate Schools of Ontario. This course is open to all Education students.
This course offers prospective teachers the opportunity: 1) to reflect, in an adult context, upon the significance of their faith and faith growth for themselves and their students; 2) to gain a theological background for an introduction to Religious Education. (1 lecture hour a week.)
80-203. Psychology in Education
Psychology applied to teaching: child growth and development, the learning process, mental health, learning and adjustment problems in the environment. (2 lecture hours a week.)

## 80-204. Education of Exceptional People

Organization, philosophy and history, development, and structure; special provisions and their significance for exceptional people in our schools today; remedial procedures in
care, treatment, education, and rehabilitation. (2 lecture hours a week.)

## $80-205$. Organization and Management in Educational Administration

 The focus of the course is on the teacher's administrative and organizational role in education, and on selected professional issues including professional relationships. Consideration will be given to educational organization, provincial and local, and tolaw and regulations. (2 lecture hours a week.)
## $\mathbf{8 0 - 2 0 7}$. Introduction to Issues in Education

An introduction to critical reflection and analysis of such educational issues as: the reflective teacher, ethnic and religious pluralism in public schooling, and moral and values development. (2 lecture hours a week.)

## 80-301. General Methodology: Content and Methods-Primary-Junior

The course is concerned with the growth, development, and learning of children from Junior Kindergarten to Grade 6. Opportunities are provided for students to investigate all aspects of the curriculum, with specialattention being paid to the aims of elementary education, and its program organization. II also provides detailed study and application of teaching procedures and sequential curriculum planning. Specific applications toart, language arts, mathematics, microcomputers, music, physical education, science, technology, and social studies are included. ( 9 lecture hours a week.)

## 80-302. General Methodology: Content and Methods-Junior-Intermediate

The course is concerned with the growth, development, and learning of children from Grade 4 to Grade 10. Opportunities are provided for students to investigate all aspects of the curriculum, art, language arts, mathematics, microcomputers, music, physical and health education, science, technology, and social studies, with special attention being paid to the aims of elementary and secondary education and their programs organization. It also provides detailed study and application of teaching procedures and
sequential curriculum planning. ( 6.5 lecture nours a week.)

### 80.303. General Methodology: Content and Methods-Intermediate-Senior

The course is concerned primarily with the development and learning of students in the intemediate division (Grades 7 to 10). Opportunities are provided for students to investigate all aspects of the curriculum of the htemediate division (particularly Grades 7, 8 , and 9 ) and its organization. It also provides detailed study and application of paching procedures and sequential curricuum planning in art, language across the curioculum, mathematics, music, physical and health education, science, technology, and the social sciences. Included are specific applications of the microcomputer in the classroom. ( 5.5 hours a week.)
80-352. to 80-380. Junior-Intermediate, Intermediate-Senior Methods
These courses provide a more detailed stucy and application of the aims and teaching procedures of specific subjects in the Junior-Intermediate and Intermediate-Senbrconcentrations. Intermediate-Senior candidates must select two courses from the Table of Options. Junior-Intermediate candidales must select one.

## 80-400. Broad Based Technology I

This course will introduce students to the philosophy behind broad based technology. Other topics to be considered will be busiress and industry development, the writing of program and organization, evaluation, student tracking, project management, discipline, relating to parents, integration of echnology into the overall program, and resource development and management.

## 80-401. Broad Based Technology II

A continuation of 80-400 with particular emphasis on student outcomes, the professional development of teachers, technical skill upgrading, student tracking, student profiles, employability skill profiles, and resource development and management.

## 80-499. Practice Teaching

Direcled observation and practice teaching will be arranged to include practical experi-
ence in the schools and programs applicable to the concentration for which the student is a candidate. Candidates in the Primary-Junior concentration will normally practice teach from Grades K to Six inclusive; candidates in the Junior-Intermediate concentration will practice teach from Grades Four to Ten inclusive; candidates in the Intermediate-Senior concentration will practice teach from Grade Seven to OAC inclusive.

### 6.3.2 BACHELOR OF EDUCATION (HONOURS) DEGREE-IN-SERVICE PROGRAM OF PROFESSIONAL COURSES

## PURPOSES OF THE PROGRAM

The Faculty of Education offers courses leading to the Honours Bachelor of Education degree. Not all courses will be offered in each session. The courses are designed for practising teachers and instructors who wish to improve their professional skills and knowledge. Some students may wish to complete courses for additional qualifications, to retrain, to up-date, to qualify in new subject areas or divisions, or to adapt their instruction to changes in curriculum.

## ADDITIONAL QUALIFICATIONS COURSES

Candidates successfully completing certain in-service courses will be recommended to the Ontario College of Teachers for an additional qualification entry on their record card. Detailed brochures, published for each session by the Faculty of Education, will indicate the courses for which such certification may be expected.
The offerings may include courses in Development in Professional Practice as shown in the charts below.
Candidates for these courses expecting recommendation for additional qualifications must hold a Certificate of Qualification from the Ontario College of Teachers.
For admission to Part II and Specialist's courses, candidates will be required to present evidence of prerequisite qualifications as required by the Ontario College of Teachers.

A candidate may be considered to have fulfilled the academic requirements of Honours Specialist certification on the successful completion of one course in the sequence 79-460 through 79-475. Courses leading to teaching qualifications in additional secondary subjects or additional divisional areas of concentration for basic certification may be available to candidates as special students.

## ADMISSION REQUIREMENTS

A candidate must hold and show proof of:

1) an approved degree of the University of Windsor or other accredited university; and
2) a valid, current Certificate of Qualification from the Ontario College of Teachers; or,
3) permission of the Dean of the Faculty of Education, for which written applications will be individually considered.
Inquiries about admission criteria, courses, and accreditation should be directed to the Co-ordinator, In-Service Program at the Faculty of Education (519) 253-3000, ext. 3800.

## APPLICATION AND REGISTRATION

Students apply for the program and register for specific courses using the Application and Registration Form-Part-Time Undergraduate Studies, which may be obtained from the Office of the Registrar.

## DEGREE REQUIREMENTS

To qualify for the degree of Bachelor of Education (Honours), a student must:

1) qualify for an approved degree of the University of Windsor or another accredited university; and
2) successfully complete eight semester course equivalents of the University of Windsor B.Ed. (Honours) program with a B average or better.
Normally, candidates must select six semester course equivalents in an area of specialization. However, if a candidate wishes to transfer credit for a course taken at another university towards the B. Ed. (Honours) granted by the University of Windsor, approval must be obtained from the Dean prior to taking such a course. All candidates ex-
pecting to proceed to the degree should discuss their course selection with the Co-ordnator of the In-Service Program.
Transfer of credit to a B.A. program: See requirements of the appropriate college/lac. ulty.
Transfer of credit to the Honours B.Ed. program: Each request for transfer of university course credits will be evaluated on an indvidual basis by the Dean of the Faculty of Education.

### 5.2.8 TECHNOLOGICAL EDUCATION INTERNSHIP PROGRAM

A program designed for people wanting lo teach technological subjects at the intemediate and senior divisions within Ontario schools. Upon successful completion of this program, candidates with an undergraduate degree will be eligible for a B.Ed. degree, whereas those without an undergraduate degree will be eligible for a Diploma in Technological Education. All applicants must be currently teaching technological education on a letter of permission for a board of education in Ontario. Interested parties should consult the detailed program description available at the Faculty of Education office for information on admission requirements and a program description.

### 6.3.3 COURSE DESCRIPTIONS-IN-SERVICE PROGRAM

## ADDITIONAL QUALIFICATIONS COURSES

For a listing of Additional Qualifications Courses, see the charts below.
For a complete description of all in-Sevice courses and registration procedures, con. sult the In-Service Program Course Calendar, which is available from the Faculty of Education, or refer to www.uwindsor.cainservice.
Additional Qualifications courses have a common course description as follows: arrriculum development, teaching techniques, and student evaluation procedures for $\mathrm{spe}-$ cific subject areas and levels in programs.

## ADDITIONAL QUALIFICATIONS COURSES

| Subject Area | For PARTI, the following courses are required: | For PART II, the following courses are required: | For SPECIALIST, the following courses are required: |
| :---: | :---: | :---: | :---: |
| French as a Second Langauge | 79-100 | 79-200 | 79-300 |
| English as a Second Language | 79-103 | 79-203 | 79-303 |
| Reading | 79-106 | 79-206 | 79-306 |
| Dramatic Arts | 79-109 | 79-209 | 79-309 |
| Media | 79-112 | 79-212 | 79-312 |
| Visual Arts | 79-115 | 79-215 | 79-315 |
| Primary Education | 79-118 | 79-218 | 79-318 |
| Environmental Science | 79-121 | 79-221 | 79-321 |
| Music - Vocal (P/J) | 79-124 | 79-224 | 79-324 |
| Music - Vocal (I/S) | 79-127 | 79-227 | 79-327 |
| Music - Instrumental | 79-130 | 79-230 | 79-330 |
| Physical and Health Ed. (P/J) | 79-133 | 79-233 | 79-333 |
| Physical and HealthEd. (I/S) | 79-136 | 79-236 | 79-336 |
| Cooperative Education | 79-139 | 79-239 | 79-339 |
| Librarianship | 79-142 | 79-242 | 79-342 |
| Home Economics | 79-145 | 79-245 | 79-345 |
| Junior Education | 79-148 | 79-248 | 79-348 |
| Intermediate Education | 79-151 | 79-251 | 79-351 |
| Computers in the Classroom | 79-154 | 79-254 | 79-354 |
| Religious Education | 79-157 | 79-257 | 79-357 |
| Mathematics (P/J) | 79-160 | 79-260 | 79-360 |
| Science (P/J) | 79-163 | 79-263 | 79-363 |
| Design and Technology | 79-166 | 79-266 | 79-366 |
| Guidance | 79-169 | 79-269 | 79-369 |
| Special Education | $\begin{gathered} \text { 79-172 } \\ \text { plus one elective } \end{gathered}$ | $79-272$ <br> plus one elective | $79-372$ <br> plus one elective |
| Electives: | Basic | Advanced |  |
| Behaviour Disorders | 79-175 | 79-275 |  |
| Gifted | 79-178 | 79-278 |  |
| Mentally Retarded (TTR) | 79-181 | 79-281 |  |
| Learning Disablities | 79-184 | 79-284 |  |
| Slow Learner | 79-187 | 79-287 |  |
| Special Topics | 79-190 | 79-290 |  |
| Autism | 79-193 | 79-293 |  |


| ADDITIONAL BASIC QUALIFICATIONS |  |  |  |
| :---: | :---: | :---: | :---: |
| AND |  |  |  |
| HONOURS SPECIALIST COURSES |  |  |  |
| Primary | 79-400 |  |  |
| Junior | 79-401 |  |  |
| Subject Area | Intermediate | Senior | Honours Specialist |
| Art | 79-402 | 79-430 | 79-460 |
| Computer Science | 79-403 | 79-431 | 79-461 |
| English | 79-404 | 79-432 | 79-462 |
| French | 79-405 | 79-433 | 79-463 |
| Geography | 79-406 | 79-434 | 79-464 |
| History | 79-407 | 79-435 | 79-465 |
| Individual and Society | 79-408 | 79-436 |  |
| Mathematics | 79-409 | 79-437 | 79-466 |
| Music - Vocal | 79-410 | 79-438 | 79-467 |
| Music - Instrumental | 79-411 | 79-439 | 79-468 |
| Physical and Health Ed. | 79-412 | 79-440 | 79-469 |
| Biology | 79-413 | 79-441 | 79-470 |
| Chemistry | 79-414 | 79-442 | 79-471 |
| Geology | 79-415 | 79-443 | 79-472 |
| Physics | 79-416 | 79-444 | 79-473 |
| Dramatic Art | 79-417 | 79-445 | 79-474 |
| Science - General | 79-418 | 79-446 | 79-475 |

The courses will be professionally oriented; that is, they will emphasize the development of practices based upon theory, rather than the development of educational theory.
79-490. Creativity in Teaching
Theory and research in creativity; developing the creative potential in teachers and pupils; application in graphic, musical, dramatic, verbal, scientific, and mixed media; strategies in teaching and evaluation.

## 79-491. Early Childhood Education

Philosophy of early childhood education, development and learning during nursery and kindergarten years; planning and organization of programs for children three to six years of age; early diagnosis of developmental difficulties.

## 79-492. Principles and Techniques in Supervision of Practice Teaching

Discussion of the objectives of the teacher education program; a consideration of the nature and purpose of supervision; a study of the factors involved in the field experience environment; analysis of the role of the associate teacher and other supervisory personnel; problems in evaluation and communication.

## 7 FACULTY OF

 ENGINEERING
## Dean

Graham T. Reader; B.Tech. (Bradford), B.A. (O.U.), P.S.C. (M.B.A.) (J.S.D.C.), Ph.D. (Bradford), P.Eng., C.M.E., C.Eng., Eur.Ing., F.I.Mar.E.

## Associate Dean

Philip H. Alexander; B.A.Sc.
(Assumption), M.A.Sc., (Windsor), P.Eng.

The engineering curriculum leading to the B.A.Sc. degree has been designed to offer students an education that is immediately valuable to them on graduation and which, at the same time, provides a foundation to accommodate their further education in industry or research.
The first year is common in order to give the student an introduction to general engineering principles and to allow investigation of a special field of interest for subsequent years of study.
The Co-operative Education Program is available in Civil Engineering, Electrical Engineering, Environmental Engineering, Industrial Engineering, Mechanical Engineering, Mechanical Engineering (Malerials Option), and Mechanical Engineering (Automotive Option). See 7.7.2 for more information.

While engineers must work within the technologies of the times, they are also responsible for the continual development of these lechnologies. The flexibility demanded of the engineer must be based upon profidency in the physical sciences, and a confident ability to apply the sciences to the benefit of humankind. Therefore, our engireering programs are founded upon a substantial content of mathematics, physics, andchemistry; and our engineering subjects are taught with a view to familiarizing the students with contemporary practice, and teaching them those methods of analysis, design, and realization which they will be
able to apply to a continually developing discipline.
The aim of the engineer is to apply the latest science and technology for the betterment of society; engineers must, therefore, realize their duties to society and, as a prerequisite, appreciate how civilizations have developed to their present states.
The independent responsibility that we wish to see in practising engineers is impressed upon our students by emphasis on laboratory work, tutorials, projects, and assignments. Further, the student is assisted in individual studies by counselling and professional development seminars.
These activities encourage a close and profitable student-professor relationship and facilitate the interchange of engineering information and experience to develop the professional maturity and integrity of the student.

### 7.1 Academic Regulations

Students are directed to become familiar and to comply with the general regulations of the University as described in 2.4 which apply to all students. Additionally, programs within the Faculty of Engineering have particular regulations. Students enrolled in Engineering programs also must comply with these particular requirements.
Students also are directed to read the "Statement of Responsibility" on the inside front cover.

## COURSE CHANGES

All course changes subsequent to registration require the written approval of the Associate Dean of the Faculty.

## COURSES NOT PART OF THE ENGINEERING PROGRAM

A student may register for courses additional to those in the Engineering program only with the permission of the Chair for the program area in which the student is enrolled and the Associate Dean.

## 7 FACULTY OF ENGINEERING

## CALCULATION OF AVERAGES

1) A student's academic evaluation is based on a cumulative average of grades weighted as follows: The weight of a one-term course is equal to the number of lecture hours per week, plus one-half the number of tutorial or laboratory hours per week.
2) All courses taken as part of the Engineering Program, including failed and repeated courses, and supplemental evaluations will be included in the calculation of the cumulative average.

## SUPPLEMENTAL PRIVILEGES

The Academic Standing Committee may grant a supplemental evaluation privilege for a failed course provided that the student:
(a) has failed only one course in the evaluation period; and
(b) has a grade in the failed course of F; and
(c) has a cumulative average of 5.0 or better.

If a supplemental evaluation privilege is granted and the student decides to exercise this privilege, the student must register for the supplemental and pay the appropriate fee. Once a student has registered for a supplemental evaluation and the required evaluation method has been prescribed, the evaluation will occur at the time and place prescribed by the Faculty of Engineering. Failure to write after registering for the supplemental evaluation will result in a grade of $F$ being assigned. Both the resulting grade and the original grade will be shown on the student's transcript and will be included in the determination of the student's cumulative average.

## GRADUATION REQUIREMENTS

In addition to complying with the general university regulations (see 2.4.20) an Engineering student must complete the program within six years of study from the date of first registration in an Engineering program;

## HONOURS STANDING

1) Second-Class Honours: A student will graduate with second-class honours if all the requirements previously described have
been fulfilled and the program has been completed within the period of four years while maintaining a cumulative average of 8.0 to 10.9 in the third and fourth years.
2) First-Class Honours: A student will graduate with first-class honours if all the requirements previously described have been fulfilled, and the program has been completed within a period of four years while maintaining a cumulative average of 11.0 to 13.0 in the third and fourth years.
3) Honours with Distinction: A student will graduate with honours with distinction if all the requirements previously described have been fulfilled, and the program has been completed within a period of four years while maintaining a cumulative average of 12.0 or higher in the third and fourth years, providing that no courses were failed in any of the four years.
4) Dean's List: Any full-time Engineering student who attains a term average of 10.5 or greater will be entitled to the honour of being placed on the Dean's list.

### 7.2 Co-operative Education Program

The Faculty of Engineering Co-operative Education Program offers students the opportunity to combine their classroom experiences with career-related work experiences. The Co-operative Education Program is based upon the principle that the preparation of undergraduate Engineering students can be enhanced by blending career related work experience with a quality curriculum.
Admission to the Co-operative Education Program is competitive. Students who apply and are accepted into the Program will participate in three or four paid work experiences interspersed throughout the four-year honours program. The experience gained while participating in these structured and supervised work placements is viewed as an integral component of the student's education program.

### 72.1 APPLICATION PROCEDURE

Students who are granted admission to the Engineering program are offered the option of participating in the Co-operative Educaion (Co-op) Program at three different times as follow:

1) Applicants to the Engineering program who are offered admission to first-year with a mid-term average of eighty percent or higher will be sent an application to participate in the Co-op Program, along with their acceptance package.
2) All other students who are accepted to firstyear of the Engineering program will be given an application to participate in the Coop Program during their course in Professonal Development in September.
Criteria for participation will vary depending upon the academic achievement and the number of Co-op applicants. Decisions regarding participation in the Co-op Program will be finalized by the Co-operative Educafon and Career Services Office in the Winter lem of the students' first year of study. Actual registration in the Co-op Program and lee assessment will not occur until students obtain their first work assignment in the Summer term after their first Fall and Winter lems of study.
3) During the summer before the second year of the Engineering program, all students who have completed their first year and have achieved the Engineering Co-op academic requirement of a cumulative average of 5.0 or better and no more than one falure are sent an application for admission to the Co-op program.
Second-year applicants are evaluated on the basis of their first-year academic achievement, paid and volunteer work expeience, a letter outlining the student's motivation for applying, two letters of reference, and an interview.
Decisions regarding acceptance into the Co op Program will be finalized by the Co-op Education and Career Services Office in September. Registration in the Co-op Program and fee assessment will also occur at this time.

### 7.2.2 PLACEMENT

The placement process is competitive. Coop students will register and apply for work placement positions advertised by the Cooperative Education and Career Services Office using an Intemet-Academic software program. Student application documents are forwarded to employers who select the students they wish to interview.
After interviews take place, both the student and the employer will be involved in the ranking and matching process co-ordinated by the Co-op Office.
The Faculty of Engineering or Co-op Education and Career Services do not guarantee placement, but every reasonable effort will be made to ensure that appropriate employment is made available.

### 7.2.3 SEQUENCE OF WORK AND STUDY TERMS

## FIRST YEAR

Fall Term: Study term
Winter Term: Study term
Summer Term: Work term

## SECOND YEAR

Fall term: Study term
Winter term: Study term
Summer Term: Work term

## THIRD YEAR

Fall Term: Study term
Winter Term: Work term
Summer Term: Study term

## FOURTH YEAR

Fall Term: Work term
Winter Term: Study term
Summer Term: Study term

### 7.2.4 ACADEMIC STANDING

After each study term, Co-op students' academic records will be reviewed to ensure that they meet the academic requirements necessary to remain in the Co-operative Program. The Co -op academic requirement is a cumulative average of 5.0 or better and no more than one outstanding failure.

### 7.2.5 WORK TERM EVALUATION

A student's performance in a Work Term will be evaluated as either "Satisfactory" or "Unsatisfactory". To obtain a "satisfactory" evaluation, a student must successfully complete all the requirements of the Co-operative Program as described in the rules and regulations handout provided to all coop students and available from the Co-operative Education Office.

### 7.2.6 CO-OPERATIVE PROGRAM GRADUATION REQUIREMENTS

In addition to the requirements for graduation from the regular B.A.Sc. program (see 7.7.1), students in the Co-operative Program must satisfactorily complete three work terms, including a final, Fall work term.

### 7.3 Program of Study-Bachelor of Appled Science

### 7.3.1 OUTLINE OF STUDIES

The course and program requirements for the various fields of engineering are given below.

Note: All students will follow the sequence of study terms shown in their program of study.

## FIRST YEAR

(Common to all Engineering programs)
Fall Term

## Lect. Lab. Wt.

| 85-111. (Engrg. Mech. I) | 2 | 2 | 3.00 |
| :--- | :--- | :--- | :--- |
| 85-118. (Prof. Development) | 2 | 0 | 2.00 |
| $85-132$. (Comp.-Aided Analysis I) | 2 | 2 | 3.00 |
| 59-110. (Topics in Gen. Chemistry) | 3 | 3 | 4.50 |
| 62-140. (Calculus A) | 3 | 1 | 3.50 |
| 62-126. (Linear Algebra) | 3 | 1 | 3.50 |

## Winter Term

Lect. Lab. Wt.

| 85-122. (Engrg. Mech. II) | 3 | 2 | 4.00 |
| :--- | :--- | :--- | :--- |
| 85-124. (Electric Circuits) | 3 | 2 | 4.00 |
| $85-128$. (Intro to Engrg. Materials) | 3 | 2 | 4.00 |
| 85-130. (Graphical Comm.) | 1 | 3 | 2.50 |
| $85-131$. (Comp.-Aided Design) | 2 | 2 | 3.00 |
| 62-141. (Calculus B) | 3 | 1 | 3.50 |

## Summer Term

(Co-op students only)
85-198. (Work Term I)
Course descriptions for non-Engineering subjects are given in the appropriate sections of this Calendar.
The Second, Third, and Fourth Years of Engineering programs may be found as follows:

Civil Engineering: see 7.4.2;
Electrical Engineering: see 7.5.1;
Environmental Engineering: see 7.4.4;
Industrial Engineering: see 7.6.1;
Mechanical Engineering: see 7.7.1;
Mechanical Engineering (Materials
Option): see 7.7.1.
Mechanical Engineering (Automotive
Option): see 7.7.1.

### 7.3.2 NON-TECHNICAL ELECTIVES

For complete descriptions of the courses listed below, see the respective area/program sections of this Calendar.
Not all courses will be offered each year. All courses are three hours a week unless otherwise indicated.

## 7 FACULTY OF ENGINEERING

Anthropology
4istory
49-306. Sociology of Women
General, Arts and Social Sciences
43-143. Introduction to Canadian Social
History
01-212. Science and Technology:
Religious Perspectives
43-347.
Cities in North America: Historical
Urbanization in Canada

### 7.4 Course

Descriptions-
General Engineering

## 85-111. Engineering Mechanies I

Statics of particles and rigid bodies; trusses, frames, machines; centroids and centres of gravity; friction. (2 lecture, 2 tutorial hours a week.)

## 85-118. Professional Development

The practice of engineering in various disciplines; career development; administrative processes in the profession; ethical considerations; the relationship of engineering to society. Responsibility of professional engineers for public health and safety in the workplace. Fundamentals of expository writing, including types of exposition, planning, organization, format and style, résumé preparation, engineering reports, and other forms of written communication. Assignments using word processing. (2 lecture hours a week.)

## 85-122. Engineering Mechanics II

Kinematics of particles; kinetics of particles: Newton's Second Law, work-energy and im-pulse-momentum methods; moments of inertia of areas and masses; kinematics of rigid bodies, plane motion. (3 lecture, 2 tutorial hours a week.)

## 85-124. Electric Circuits

Fundamental electrical concepts and units; source of electrical energy; terminal properties of voltage and current sources, resistors, capacitors and inductors; introduction to network analysis; network laws, network equations, solution methods; power and energy; electric and magnetic fields; measurement techniques. (3 lecture, 2 laboratory or tutorial hours a week.)

## 85-128. Introduction To Engineering Materials

This course explains how the properties of solid materials are derived and are related to their basic crystallographic and electronic structures: Metals, ceramics, polymers, and
electronic materials are covered. ( 3 lecture, 2 laboratory or tutorial hours a week.)

## 85-130. Graphical Communications

A course in the fundamentals of engineering graphic communication, including the forlowing: orthographic projection; isometric drawing and sketching; single and double auxiliary views; sections and conventions; dimensioning; reading engineering drawings and prints; the fundamentals of descriptive geometry; introduction to computer graphics. (1 lecture hour, 3 laboratory hours a week.)

## 85-131. Computer-Aided Design

Design project organization, design methodology, needs validation, problem identification and definition, modern problem-solving techniques, effective oral and written communication. Design evaluation using criterion functions. Application to major projects. (2 lecture, 2 laboratory hours a week.)

## 85-132. Computer-Aided Analysis ।

 Introduction to simple engineering problems and the application of digital computers to analyze these problems; use of MATLAB in engineering computations; introduction to various computer programming languages, with emphasis on C. (2 lecture, 2 tutorial hours a week.)
## 85-198. Work Term I

## 85-211. Computer-Aided Analysis II

Programming; numerical methods; solution of linear algebraic equations with real and complex coefficients; matrix orientud methods; equations in one variable, roots of polynomials; solutions of nonlinear algebraic equations; curve-fitting techniques, numerical integration, solution of ordinary differential equations. (Prerequisite: 85-132.) (3 lecture, 1.5 tutorial hours a week.)

## 85-212. Thermodynamics I

An introductory thermodynamics course in which fundamental principles are developed. Included are ideal gas relations, properties of pure substances, First Law for closed and steady flow systems, the Second Law with entropy relations, and an introduction to cycles. ( 3 lecture, 1.5 tutorial hours a week.)

## 85-214. Circuit Analysis II

Two-terminal components; Kirchhoff's laws, network analysis techniques; DC resistive networks; steady-state sinusoidal theory; power and energy; three phase systems; tansient analysis; state equation methods; computer-oriented solution techniques. (Prerequisite: 85-124; corequisite: 85-211.) (3lecture, 1.5 laboratory or tutorial hours or equivalent a week.)

## 85-217. Engineering Mechanics of Deformable Bodies I

An introduction to stress, strain, and stressstrain relations, and a brief discussion of mechanical properties and types of loads. A study of members subjected to axial load, flexure, and torsion. (Prerequisites: 85-111 and 62-140.) (2 lecture, 2 laboratory/tutorial hours a week.)

## 85-222. Engineering Treatment of Experimental Data

Treatment of engineering data using the concepts of frequency distribution; measures of central tendency and dispersion. Probability: random variables; discrete and continuous distributions. Tests of hypotheses; estimation; goodness-of-fit test; linear regression and correlation. Applications using computers in engineering design problems, quality control, and manufacturing processes. (Prerequisite: 62-140.) (3 lecture hours, 1 tutorial hour a week.)

## 85-224. Technical Writing

Witten engineering communication including: cover letters, memos, proposals and technical reports. Figures and tables and their use. Emphasis on engineering technical report writing including: outlines, drafts, and reports. (1 lecture, 2 tutorial hours a week) (If Technical Writing is not available, 26-100 Composition may be substituted.)

## 85-233. Fluid Mechanics I

Fluid properties and basic concepts, fluid slatics, equations of motion, one dimensional flows, flows in pipes in series, parallel and networks, dimensional analysis and similitude. (3 lecture hours, 1 tutorial hour a week.)

## 85-298. Work Term II

## 85-313. Engineering Economy

Cost estimation, cost accounting, and cost control. Comparison of engineering alternatives by annual cost, present worth, and rate of return methods. Depreciation and taxes. Equipment replacement. ( 3 lecture, 1.5 tutorial hours a week.)

## 85-398. Work Term III

## 85-421. Engineering and Society

The technology-society relationship in a historical context; the nature of technological change and its consequences; the engineer's role in the control of technology and sustainable development; the responsibility of engineers for health and safety in the workplace, including OHSA, WHMIS. The development of the engineering profession; professional registration and the code of ethics; the duties and responsibilities of engineers; the engineer and the law. (Restricted to fourth-year students.) (3 lecture hours a week.)
85-498. Work Term IV

### 7.4 Civil and

Environmental

## Engineering

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Kennedy, John B.; B.Sc. (Hons.) (Cardiff), Ph.D. (Toronto), D.Sc. (Wales), F.A.S.C.E., F.C.S.C.E., P.Eng.-1963.

DeMarco, Frank A.; B.A.Sc., M.A.Sc., Ph.D. (Toronto), F.C.I.C., P.Eng.-1946.
Monforton, Gerard R.; B.A.Sc. (Assumption), M.A.Sc. (Windsor), Ph.D. (Case Inst.), F.C.S.C.E., P.Eng.-1962.

MacInnis, Cameron; B.Sc. (Dalhousie), B.E. (Hons) (Nova Scotia Technical College), Ph.D. (Durham), F.C.S.C.E., P.Eng.-1963.
McCorquodale, John Alexander; B.E.Sc. (Western Ontario), M.Sc. (Glasgow), Ph.D. (Windsor), F.C.C.C.E., P.Eng.-1966.
Abdel-Sayed, George; B.Sc., M.Sc. (Cairo), Dr.Ing. (T. U. Karlsruhe), F.C.S.C.E., P.Eng.-1967.

Bewtra, Jatinder K.; B.E. (Roorkee), M.S., Ph.D. (lowa), P.Eng .-1968.

## Professors

Madugula, Murty K.S.; B.E. (Hons.), M. Tech., Ph.D. (I.I.T., Kharagpur), P.Eng.1979.

Asfour, Abdul-Fattah Aly; B.Sc. (Hons.), M.A.Sc. (Alexandria), Ph.D. (Waterloo), P.Eng.-1981.

Biswas, Nihar; B.E. (Calcutta), M.A.Sc., Ph.D. (Ottawa), P.Eng.-1981. (Head of the Department)
Budkowska, Bozena Barbara; B.A.Sc., M.A.Sc., Ph.D. (Gdansk)-1989.

## Associate Professors

Hearn, Nataliya; B.A.Sc. (Toronto), Ph.D. (Cambridge)-1999.
Henshaw, Paul; B.Sc., B.Eng.Sc. (Western Ontario), Ph.D. (Windsor), P.Eng.-1997.

## Assistant Professors

Reitsma, Stanley; B.A.Sc., M.Sc. (Waterloo), Ph.D. (Queen's)-1998.
Ghrib, Faouzi; B.A.Sc. (Tunis), M.Sc., Ph.D. (École Polytech.)-1999.
Mazurek, Kery Anne; B.Sc., M.Sc., Ph.D. (Alberta), P.Eng.-2001.

## Adjunct Professors

Gnyp, Alex William; B.A.Sc., M.A.Sc., Ph.D. (Toronto), P.Eng.-1958.
Temple, Murray Clarence; Diploma (R.M.C., Kingston), B.A.Sc. (Toronto), S.M. (M.IT.), Ph.D. (Toronto), F.E.I.C., F.C.S.C.E., F.A.S.C.E., P.Eng.-1969.

Becker, Norbert Karl; B.A.Sc., Ph.D. (Windsor), P.Eng.-1981.
Grace, Nabil; B.Sc. (Cairo), M.A.Sc., Ph.D. (Windsor), P.Eng.-2000.

## Adjunct Associate Professor

Tsui, Stephen H.; B.Sc. (Chu Hai, Hong Kong), M.Eng, (Carleton), P.Eng., C. Eng, M.I. Struct. E..-1982.

## Adjunct Assistant Professors

Jasim, Saad Y.; Ph.D. (Wales), P.Eng.1994.

Wu, Jianging; Ph.D. (Windsor)-1998,
Meloche, Lloyd J.; B.A.Sc. (Windsor), M.A.Sc. (Toronto), P.Eng.-1998.

Battacharjee, Sudip; B.Sc., M.Sc. (Dhaka), Ph.D. (McGill), P.Eng.-1998
Sennah, Khaled M.; B.Sc., M.Sc. (Alexandria), Ph.D. (Windsor), P.Eng.-1999.
Arndt, Richard; B.S., M.S., Ph.D. (lowa)2000.

### 7.4.1 PROGRAM OF STUDY-FIRST-YEAR AND SECOND-YEAR CIVIL AND ENVIRONMENTAL ENGINEERING

## FIRST YEAR

The Fall and Winter terms are commonto all Engineering programs (see 7.7.3). In the Summer term, Co-op students will also register for 85-198 (Work Term I).

### 7.4 Civil and Environmental Engineering

### 7.4.2 PROGRAM OF STUDY-CIVIL ENGINEERING

Civil engineering comprises the conception, design, operation, and maintenance of buildings, railroads, waterways, bridges, habours, tunneis, water supply and purificafon systems, sewage collection and treatment facilities, hydraulic structures, and waterpower developments. The Civil Engineering curriculum provides a diversity of applied course work and aids the student in selecting a major field of endeavour as well as a thorough background in the basic sciences and a broad understanding of the social sciences and humanities.
The Civil Engineering program provides modern and comprehensive laboratory facilites in the following fields: Strength of Materials, Soil Mechanics, Hydraulics, Structures, Concrete, Sanitary Engineering, and Surveying. The Canadian Society for Civil Engineering has an active student secfon on campus.
Note: The baccalaureate degree program in Civil Engineering is accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.

SECOND YEAR
Fall Term

| 85-211.(Comp.-Aided Analysis II) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- |
| 85-217. (Mech. of Def. Bod. I) | 2 | 2 | 3.00 |
| 85-22.(Treatment of Expt. Data) | 3 | 1 | 3.50 |
| 87.20..(Surveying) | 3 | 3 | 4.50 |
| 62.215.(Vector Calculus) | 3 | 1 | 3.50 |


| Winter Term |  |  |  |
| :--- | ---: | ---: | ---: |
|  | Lect. Lab. Wt. |  |  |
| 85-233.(Fluid Mechanics I) | 3 | 1 | 3.50 |
| 87-227. (Mech. of Def. Bod. II) | 2 | 2 | 3.00 |
| 93-224. (Intro. Environ. Engrg.) | 3 | 3 | 4.50 |
| 41-117.(Intro. Economics) | 3 | 1 | 3.50 |
| 61-14.. Earth Systems II) | 2 | 2 | 3.00 |
| 62-216. (Differential Equations) | 3 | 1 | 3.50 |

## Summer Term <br> (Co-op students only) <br> 85-298. (Work Term II) <br> THIRD YEAR

Fall Term
Lect. Lab, Wt.

| 85-313. (Engrg. Economy) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- |
| 87-310. (Str. Analysis 1) | 3 | 2 | 4.00 |
| 87-311. (Concrete Design 1) | 3 | 2 | 4.00 |
| 87-313. (Fluid Mech. and Hyd.) | 3 | 2 | 4.00 |
| 87-315. (Soil Mechanics) | 3 | 1.5 | 3.75 |
| 87-325. (Plan. and Constr. Mgmt.) | 3 | 3 | 4.50 |

## Winter Term

(Co-op students only)
85-398. (Work Term Iil)

## Summer Term

Lect. Lab. Wt.

| 87-314. (Transp. \& Traffic Engrg.) | 2 | 2 | 3.00 |
| :--- | :--- | :--- | :--- |
| 87-322. (Concrete Design II) | 3 | 2 | 4.00 |
| 87-323. (Hydrology I) | 3 | 2 | 4.00 |
| 87-324. (Str. Steel Design) | 3 | 2 | 4.00 |
| 87-326. (Geotechnical Engrg.) | 3 | 2 | 4.00 |
| 42-200. (Resource Mgmt.) | 3 | 0 | 3.00 |

## FOURTH YEAR

Fall Term
(Co-op students only)
85-498. (Work Term IV)
Winter Term
Lect. Lab. Wt.

| 87-401. (Project and Seminar) | 0 | 6 |  | 6.00 |
| :---: | :---: | :---: | :---: | :---: |
| 87-410.(Str. Anal. and Design II) | 3 | 2 |  | 4.00 |
| 87-412. (Hydraulics I) | 3 |  |  | 4.00 |
| 93-413. (Water/Wastewater Col.) | 3 | 2 |  | 4.00 |
| Two (2) Electives* |  |  |  |  |
| Summer Term |  |  |  |  |
|  | Lect |  |  | Wt. |
| 85-421. (Engineering and Society) | ) 3 |  |  | 3.00 |
| 87-401. (Project and Seminar) | 0 |  |  | 6.00 |
| 87-414. (Hwy. Design \& Constr.) | 2 |  |  | 3.00 |
| 87-428. (Foundation Engrg.) | 2 |  |  | 2.50 |
| Two (2) Electives* |  |  |  |  |

### 7.4 Civil and Environmental Engineering

*Students take one (1) Non-technical Elective (see 7.3.2) and three (3) Technical Electives in their fourth year.

TECHNICAL ELECTIVES

## Lect. Lab. Wt.

| 87-415. (Hydraulics II) | 3 | 1 | 3.50 |
| :--- | :--- | :--- | :--- |
| 87-421. (Str. Analysis III) | 2 | 2 | 3.00 |
| 87-42. (Str. Design III) | 2 | 2 | 3.00 |
| 87-423. (Timber \& Masonry) | 2 | 2 | 3.00 |
| 87-425. (Hydrology II) | 2 | 2 | 3.00 |
| 92-321. (Control Theory I) | 3 | 1 | 3.50 |
| 93-414. (Solid Waste Mgmt.) | 3 | 0 | 3.00 |
| 93-42. (Water/Wastewater Treat.) | 2 | 2 | 3.00 |
| 61-436. Hydrogeology) | 2 | 3 | 3.50 |

### 7.4.3 COURSE DESCRIPTIONS-CIVIL ENGINEERING

## 87-210. Surveying

A course in plane surveying, which includes the following sections: distance and angular measurement; differential and trigonometric levelling. All aspects of traversing; area determination; stadia work; curves; and earth work will be covered. A complete set of practical field work problems will supplement lectures. (3 lecture, 3 laboratory hours a week.)

## 87-227. Engineering Mechanics of Deformable Bodies II

A study of flexure and deflection of beams, eccentric loads, connections, experimental determination of principal stresses, buckling of columns, and additional topics. Statically indeterminate problems and inelastic response are also studied. (Prerequisite: 85217.) (2 lecture, 2 laboratory/tutorial hours a week.)

## 87-310. Structural Analysis I

Stability and determinacy of trusses and frames; analysis of statistically determinate trusses and frames; influence lines and moving loads. Deflections: conjugate beam method; virtual work; Castigliano's theorems; Maxwell-Betti reciprocal theorem. Cables and suspension bridges. Matrix methods for indeterminate trusses. Approximate methods for indeterminate trusses and frames. (Prerequisite: 87-227.) (3 lecture, 2 laboratory hours a week.)

## 87-311. Concrete Design I

Components and proportioning of concrele mixes. Mechanics and behaviour of reinforced concrete components. Analysis and ultimate strength design of reinforced concrete beams and one-way slabs. Laboratory work includes design and testing of a concrete beam. (Prerequisite: 87-227.) (3 lecture, 2 laboratory hours a week.)
87-313. Fluid Mechanics and Hydraulics Continuity, energy, momentum concepts. Boundary layers. Pipe flow including network installations. Rotodynamic pumps, system curves. Irrotational flow, flownets. Open channel flow: specific energy, flow regimes; uniform, gradually and rapidly varied flows; surface profiles. (Prerequisite: $85-233$ or consent of the instructor/Department Head.) (3 lecture, 2 laboratory hours a week.)

## 87-314. Transportation and Traffic Engineering

Characteristics of transportation systems; rail, highway, airway, waterway, and pipeline; evaluation of transportation projects and systems, urban transportation analysis and prediction, traffic studies, highway and intersection capacity, characteristics of tratfic flow, traffic control principles. (2 lecture, 2 laboratory hours a week.)

## 87-315. Soil Mechanics

Index properties of soils. Soil structure and classification of soils. Soil compaction and stabilization. Hydraulic principles of flow through soils, flow nets. Frost action in soils. Effective stresses. Compressibility, consolidation, and settlement analysis. (Prerequisite: 87-227.) (3 lecture, 1.5 laboratory hours a week.)

## 87-322. Concrete Design II

Analysis and design of columns, two-way slabs, and footings. Analysis and design of components of a building. Introduction to prestressed concrete. (Prerequisite: 87 311.) (3 lecture, 2 laboratory hours a week.)

## 87-323. Hydrology I

Weather. Precipitation: intensity, frequency, duration; rational methods. Hydrologic abstractions. Runoff: storms, unit graph prindples, inflow design hy drograph. Streamflow:

### 7.4 Civil and Environmental Engineering

gauging, stage-discharge. Reservoir flood routing. Snowmelt. Probability applications and frequency analysis of floods. Subsurlace flow: seepage from rivers and canals, water wells. (Prerequisites: 85-222 and 87si3 or consent of the instructor/Department Head.) (3 lecture, 2 laboratory hours a week.)

### 87.324. Structural Steel Design

Development of loads and specifications using Limit States Design. Design of structural components subjected to axial force, shear lorce, bending moment, and combined bending and compression. Composite beams are also considered. Design of simple bolted and welded connections. Other steel design topics. (Prerequisite: 87-227.) (3lecture, 2 tutorial hours a week.)

## 87-325. Planning and Construction Management

The planning portion of this course will cover the elements of proper urban planning, the Planning Act, official plans, zoning by-laws, and subdivision design guidelines. The construction management portion will cover construction industry characteristics; types of business ownerships; organizational structures; drawings and specifications; estimating and bidding; types of construction contracts; insurance, bonding and claims; financial considerations; project cost controls and scheduling; project planning and administration; computer applications in construction industry, quality assurance, and construction safety. ( 3 lecture, 3 tutorial hours a week.)

### 87.326. Geotechnical Engineering

Shear strength of soil. Stress distribution in soil and displacements. Stress analysis and stability of slopes. Earth pressure and design of retaining walls. Sheet-pile walls, braced and tie back excavations. Combined pressures. (Prerequisites: 87-227 and 87315.) ( 3 lecture, 2 laboratory hours a week.)

## 87-401. Project and Seminar

Students are required to select a project based on experimental research, field invesfigation, or advanced design or analysis. Inliation, library research, and execution of project. The project is presented orally at a seminar which is followed by a question pe-
riod. A written report will be submitted for evaluation. (Prerequisite: consent of the instructor/Department Head.) (6 laboratory hours a week; offered over two terms.) (A 6.00 credit hour course.)

## 87-410. Structural Analysis and Design II

Statical determinacy and indeterminacy; structural stability; review of determinate structures; linear and nonlinear behaviour; principle of superposition; statically indeterminate structures; classical methods of structural analysis; consistent deformation and virtual work methods; flexibility method; slope deflection method; stiffness method; computer-aided analysis of structures; influence lines and moving loads; limit state design concepts; load factors and combinations; load specifications for structural design calculations; plastic analysis of steel structures. (Prerequisite: 87-310.) (3 lecture, 2 tutorial hours a week.)

## 87-412. Hydraulics I

Review of basic concepts. Design of open channels with non-erodible and erodible beds; steady gradually varied flow computations in prismatic and non-prismatic channels; computer methods including HEC2. Design of hydraulic structures including gravity and arch dams, spillways, and outlet structures. (Prerequisite: 87-313.) (3 lecture, 2 laboratory hours a week.)

## 87-414. Highway Design and Construction

Geornetric design of highways; drainage; highway soil engineering including soil stabilization; bituminous materials; rigid and flexible pavement design; construction of pavements. (Prerequisite: 87-227.) (2 lecture, 2 laboratory hours a week.)

## 87-415. Hydraulics II

Sediment transport in rivers and open channels. River morphology: occurrence of bed forms and practical implications; river plan form. Aspects of river engineering: stabilization of river course, modification of river course, flood protection, aggradation and degradation of river bed. (Prequisite: 87 313.) (3 lecture hours, 1 laboratory hour a week.)

### 7.4 Civil and Environmental Engineering

## 87-421. Structural Analysis III

Energy methods of structural analysis. Matrix methods of structural analysis. Development of computer programs for the general analysis of frames. Introduction and use of commercial programs of analysis. Coldformed steel structures. (Prerequisites: $87-$ 322 and 87-324.) (2 lecture, 2 laboratory hours a week.)

## 87-422. Structural Design III

Review of: Limit States Design in steel; design for tension, compression, and flexural members. Design of: beam-columns; plate girders; composite structures; and connections. Design of an industrial building. (Prerequisite: 87-410.) (2 lecture, 2 laboratory hours a week.)

## 87-423. Design in Timber and Masonry

A discussion of the properties of timber, wood products, and factors affecting the strength of wood structures. Design for axial, bending and combined loads. Design of wood structures. An introduction to masonry materials and their properties. Design of masonry units for axial, flexural, and combined loads. Selected design topics. (Prerequisites: 87-227 and 87-322.) (2 lecture, 2 laboratory hours a week.)

## 87-425. Hydrology II

Synthesis of precipitation and streamflow. River and catchment routing. Probability and statistical hydrologic analysis. Watershed systems. Simulation of surface flow. Design hydrology. (Prerequisite: 87-323.) (2 lecture, 2 laboratory hours a week.)

## 87-428. Foundation Engineering

Soil bearing capacity. Soil exploration. Load induced pressures and settlements. Footings and eccentrically loaded foundations. Raft and pile foundations. Piles and pile driving, cofferdams and caissons. (Prerequisite: 87-326.) (2 lecture hours, 1 laboratory hour a week.)

### 7.4.4 PROGRAM OF STUDY-ENVIRONMENTAL ENGINEERING

The program in Environmental Engineering is built upon a broad base of science and
mathematics combined with an emphasis on engineering principles and design.
The rapid growth of industrial activities has produced many new problems related to environmental protection, resource conservtion, and safety. The public has been aware of the risks involved in handling a wide range of hazardous and toxic materials by majorincidents which have occurred in spite of improved design methods and operating techniques to overcome potential problems. Consequently, legislation is being formulated and enacted to control the release of toxic chemicals and pollutants into our environment. Environmental engineers are trained not only to solve problems of immediate concern, but also to develop practices and processes to systematically avoid their occurrence.
Environmental engineers have qualifications which will permit them to focus upon the transport, transformation and removal of contaminants in air, water, and soil, as well as the broader aspects of environmental planning and impact assessment.
Note: The baccalaureate degree program in Environmental Engineering is accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers. With appropriate selection of electives, students would be qualifed to apply to medical schools.

## SECOND YEAR

## Fall Term

Lect Lab. Wt.

| 85-217. (Mech. of Def. Bod. I) | 2 | 2 | 3.00 |
| :--- | :--- | :--- | :--- |
| 85-22. (Treatment of Expt. Data) | 3 | 1 | 3.50 |
| 55-140. (Biological Diversity) | 3 | 3 | 3.00 |
| 59-230. (Intro. Organic Chem) | 3 | 3 | 3.00 |
| 62-215.(Vector Calculus) | 3 | 1 | 3.50 |
| Elective |  |  |  |

### 7.4 Civil and Environmental Engineering

| Winter Term | Lect. | Lab. | Wt. |
| :---: | :---: | :---: | :---: |
| 85-224. (Technical Writing) | 1 | 2 | 2.00 |
| 93-224. (Intro. Environ. Engrg.) | 3 | 3 | 4.50 |
| $55-141$. (Cell Biology) | 3 | 3 | 4.50 |
| $59-261$. (Organic Chem. of Bio.) | 3 | 3 | 4.50 |
| 62-216. (Differential Equations) | 3 | 1 | 3.50 |
| Elective* |  |  |  |
| Summer Term |  |  |  |
| (Co-op students only) |  |  |  |
| 85-298. (Work Term II) |  |  |  |
| THIRD YEAR |  |  |  |
| Fall Term |  |  |  |
|  | Lect. | Lab. | Wt. |
| 85-313. (Engrg. Economy) | 3 | 1.5 | 3.75 |
| 87-313. (Fluid Mech. \& Hyd.) | 3 | 2 | 4.00 |
| 87-315. (Soil Mechanics) | 3 | 1.5 | 3.75 |
| 93-312. (Thermodynamics) | 3 | 2 | 4.00 |
| 93-314. (Environ. Chem. Anal.) | 3 | 2 | 4.00 |
| Elective* |  |  |  |


| Winter Term |  |  |  |
| :--- | ---: | ---: | ---: |
|  | Lect. Lab. Wt. |  |  |
| 87-323. (Hydrology 1) 3 2 4.00 <br> 93-321. (Transport Phenomena) 3 2 4.00 <br> 93-322. (Occup. Hygiene \& Safety) 3 2 4.00 <br> 93-328. (Air Polution control) 2 2 3.00 <br> 98-920. (Environmental Law) 3 0 3.00 <br> Elective*    |  |  |  |

## Summer Term

(Co-op students only)

85-398. (Work Term III)
'One elective must be chosen from the list of non-technical electives. The others must be approved by the Department Head.

## FOURTH YEAR

Fall Term
(Co-op students only)
85-498. (Work Term IV)

Winter Term
Lect Lab. Wt.

| 93-409. (Capstone Design Project) | 0 | 6 | 6.00 |
| :--- | :--- | :--- | :--- |
| 93-413. (Water/Wastewater Col.) | 3 | 2 | 4.00 |
| 93-430. (Env. Engrg. Microbiology) | 3 | 0 | 3.00 |
| 61-436. (Hydrogeology) | 2 | 3 | 3.50 |
| $93-438$. (Chemical Reaction Eng'g) | 3 | 2 | 4.00 |
| One (1) Technical elective** |  |  |  |

Summer Term
Lect. Lab. Wt.

| 85-421. (Engineering and Society) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 93-409. (Capstone Design Project) | 0 | 6 | 6.00 |
| 93-414. (Solid Waste Mgmt.) | 3 | 0 | 3.00 |
| 93-426. (Water/Wastewater Treat.) | 2 | 2 | 3.00 |
| 93-428. (Environ. Assessment) | 3 | 2 | 4.00 |
| One (1) Technical Elective** |  |  |  |

** Students take two (2) Technical Electives in their Fourth year.

TECHNICAL ELECTIVES
Lect. Lab. Wt.

| 87-412. (Hydraulics I) | 3 | 2 | 4.00 |
| :--- | :--- | :--- | :--- |
| 87-452. (Energy Conv. Systems) | 2 | 1.5 | 2.75 |
| 92-455. (Effects \& Control/Noise) | 2 | 1.5 | 2.75 |

### 7.4.5 COURSE DESCRIPTIONSENVIRONMENTAL ENGINEERING

## 93-224. Introduction to Environmental Engineering

Pollution and the environment. Environmental quality objectives, standards, and guidelines. Material balance techniques as applied to environmental processes. Introduction to environmental pollution control methods and environmental impact assessment. (3 lecture, 3 laboratory hours a week.)

## 93-312. Thermodynamics

Real gas behaviour and equations of state. The First and Second Laws of Thermodynamics and their applications. Solution properties and physical equilibria. (Prerequisite: 93-224 or consent of instructor) (3 lecture hours, 2 tutorial hours a week.)

## 93-314. Environmental Chemical Analysis

Important characteristics of air, water, wastewater, and solid wastes. Basic con-

### 7.4 Civil and Environmental Engineering

cepts in quantitative analysis of physical, chemical, and biological parameters. Instrumental methods of analysis for organic and inorganic contaminants in air, water, and soil. (Prerequisite: consent of the instructor.) (3 lecture, 2 laboratory hours a week.)

## 93-321. Transport Phenomena

Introduction to the unifying theory of transport phenomena. Estimation of viscosities and diffusivities for gases and liquids. Shell balances and some studies of momentum, energy and mass-transport. Mass transfer applications involving examples relevent to the environment. (3 lecture, 2 tutorial hours a week.)

## 93-322. Occupational Hygiene and Safety

Provincial and federal regulations, environmental stressors, toxicology of contaminants, surveys of workplaces, measurements of airborne contaminants, design of engineering controls. (3 lecture, 2 laboratory hours a week.)

## 93-328. Air Pollution Control

Regulations and methods of source testing and monitoring. Dispersion modelling. Air pollution control methods, designs, and their relative effectiveness. (2 lecture, 2 laboratory hours a week.)

## 93-409. Capstone Design Project

A significant design experience which is based on knowledge and skills acquired in earlier course work. Engineering design integrates mathematics, basic science, engineering sciences and complementary studies in developing elements, systems and processes to meet specific needs while considering economic, health, safety, environmental, social or other pertinent factors. Written and oral reports are required. (Prerequisite: consent of the supervisor and De partment Head.) (6 laboratory hours a week; offered over two terms.) (A 6.00 credit hour course.)

## 93-413. Water Distribution and Wastewater Collection Systems

Quantities of water and wastewater; development of surface and groundwater sources; design, construction, and mainte-
nance of water distribution systems; design, construction, and maintenance of wastewater collection systems. (Prerequisite: a course in fluid mechanics or hydraulics.) (3 lecture, 2 laboratory hours a week.)
93-414. Solid Waste Management Characterization of municipal and industrial solid wastes; hazardous waste regulations. Collection and transportation of solid wastes. Methods of reclamation and disposal. Design of landfill sites, incinerators, and biochemical processes. (Prerequisite: 93-224.) (3 lecture hours a week.)

## 93-426. Water and Wastewater Treatment

Wastewater disposal practices and their impacts on ecology. Design of different unit operations and processes in water and wastewater treatment. (Prerequisites: 93224 and a course in fluid mechanics or hydraulics.) (2 lecture, 2 laboratory hours a week.)

93-428. Environmental Assessment Environmental impact assessment. Environmental risk assessment. Cost-benefit analysis and life cycle analysis. Environmental management systems. (3 lecture, 2 tutorial hours a week.)

## 93-430. Environmental Engineering Microbiology

Nature of inorganic and organic pollutants; biological approaches to environmental pollution problems; microorganisms; nutritional requirements and growth; metabolic pathways; energy generation and utilization in biological systems; response to changes in environment; pathogenic microorganisms and disinfection. (3 lecture hours a week.)

## 93-436. Hydrogeology

Fundamental physics and properties of groundwater flow in porous geologic material, develops an intuitive, problem-solving approach to hydrgeologic problems. Topics include: groundwater flow equations, flow nets, aquifer pumping, contaminant transport processes, two-phase flow, and dense non-aqueous phase liquids. Computer application will be emphasized. (Prerequisites: 61-141, 62-141 or equivalent or consent of
instructor.) (3 lecture, 2 laboratory hours a week.)
93-438. Chemical Reaction Engineering Classification of chemical reactions and reactors, the rate equation, ideal reactor concept. Design equations for batch and flow (CSTR and PFR) reactors. Multiple reaction and reactor systems. Reactor design calcuations under isothermal and non-isothermal conditions. ( 3 lecture, 2 tutorial hours a week.)

### 7.5 Electrical and Computer

## Engineering

## OFFICERS OF INSTRUCTION

## University Professors

Jullien, Graham A.; B.Tech. (Loughborough), M.Sc. (Birmingham), Ph.D. (Aston), P.Eng.-1969.

Hackam, Reuben; B.Sc. (Technion, Israel), Ph.D., D. Eng. (Liverpool), F.I.E.E.E., P. Eng.-1978.

## Professors

Miller, William C.; B.S.E. (Michigan), M.A.Sc., Ph.D. (Waterloo), P.Eng.-1968.

Soltis, James; B.Sc. (Windsor), M.Sc., Ph.D. (Michigan)-1974.
Sid-Ahmed, Maher A.; B.Sc. (Alexandria, Egypt); M.A.Sc., Ph.D. (Windsor), P.Eng.1978.

Raju, G.R. Govinda; B.E. (Mysore), Ph.D. (Liverpool), F.I.E., P. Eng.-1980. (Head of the Department)
Ahmadi, Majid; B.Sc. (Tehran, Iran), D.I.C., Ph.D. (Imperial College), C.Eng., F.I.E.E.1981.

Kwan, H.K. Peter; B.Sc. (London), M.Phil. (C.U.H.K.), D.I.C., Ph.D. (London), F.I.E.E., C.Eng., P.Eng.-1988.

## Associate Professors

Alexander, Philip H.; B.A.Sc. (Assumption), M.A.Sc. (Windsor), P.Eng.-1964. (Associate Dean of the Faculty of Engineering)
Dimitrov, Vassil S.; Dipl.Eng., M.S., (Tech Univ. of Sofia), Ph.D. (Math. Inst. of the Bulgarian Academy of Sciences)-2000.

## Assistant Professor

Chen, Xiang; B.Sc., M.Sc. (Huazhong Univ. of Science and Tech.), M.Sc., Ph.D. (Louisiana State)-2000. (Cross-appointment with Mechanical, Automotive and Materials Engineering)

### 7.5 Electrical and Computer Engineering

## Adjunct Professor

Shridhar, Malayappan; B.Sc. (Bombay), D.M.I.T., M.S. (Brooklyn), Ph.D. (Aston), P.Eng.-1986. (Head, Electrical Engineering Department, University of Michigan, Dearborn)

### 7.5.1 PROGRAM OF STUDY-ELECTRICAL ENGINEERING

Electrical engineering encompasses a large number of exciting and diverse areas of study. Areas such as: micro electronics, computer systems, and networks; energy generation, distribution, and utilization; communications; and computer-aided design and manufacturing are only a few of the directions that Electrical Engineering students can choose after graduation.
The program of study encompasses courses outside Electrical Engineering and provides a professional education sufficiently fundamental in nature so as to allow the student to choose his or her specific area of professional specialization after graduation. This philosophy of education recognizes that the professional responsibilities of graduate engineers evolve throughout their careers. Graduates of this program are able to engage, from the outset of their career, in decision making with a much broader and professionally mature perspective than is possible when premature specialization at the undergraduate level is permitted. The program of study also provides excellent preparation for those students who may wish to continue their formal education with graduate study and research.
The program of study includes a number of seminars featuring professionals from outside the University community. Students are encouraged to participate in these seminars and in other professional development activities as determined by the Department. The Institute of Electrical and Electronic Engineers has an active student chapter on campus.
Note: The baccalaureate degree program in Electrical Engineering is accredited by the Canadian Engineering Accreditation Board
of the Canadian Council of Professional En. gineers.

## FIRST YEAR

Common to all Engineering programs (see 7.7.3). In the Summer term, Co-op students will also register in 85-198 (Work Term I).

## SECOND YEAR

Fall Term
Lect. Lab. Wt

| 85-211. (Comp.-Aided Analysis II) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- | :--- |
| 85-214. (Circuit Analysis II) | 3 | 1.5 | 3.75 |
| 85-222. (Treatment of Expt. Data) | 3 | 1 | 3.50 |
| 88-217. (Digital Logic Design I | 3 | 1.5 | 3.75 |
| 62-215. (Vector Calculus) | 3 | 1 | 3.50 |
| 64-220. (EM Fields \& Photons) | 3 | 1.5 | 3.75 |

Winter Term
Lect. Lab. WL.

| 88-225. (Physical Electronics) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- | :--- |
| 88-226. (Electronics I) | 3 | 1.5 | 3.75 |
| 88-227. (Digital Computer Arch.) | 3 | 1 | 3.75 |
| 88-228. (EM Waves \& Rad. Syst.) | 3 | 1.5 | 3.75 |
| 62-216. (Differential Equations) | 3 | 1 | 3.50 |
| 41-117. (Intro Economics) | 3 | 1 | 3.50 |

## Summer Term

(Co-op students only)
85-298. (Work Term II)

## THIRD YEAR

Fall Term
Lect Lab. Wt.

| 85-313. (Engrg. Economy) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- |
| 88-313. (Electromech. Sys. I) | 3 | 1.5 | 3.75 |
| 88-316. (Electronics II) | 3 | 1.5 | 3.75 |
| 88-330. (Dig. Logic. Design II | 3 | 1.5 | 3.75 |
| Technical or Non-Technical Elective (see 7.3 .2$)^{\circ}$ |  |  |  |

## Winter Term

(Co-op students only)
85-398. (Work Term III)


### 7.5 Electrical and Computer Engineering

The additional technical electives listed below are available only to fourth-year students with a G.P.A. of 11.0 or better in their third year and with permission of the Department Head.

| $88-410$. (Directed Study I) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| $88-420$.(Directed Study II) | 3 | 0 | 3.00 |

### 7.5.2 COURSE DESCRIPTIONSELECTRICAL ENGINEERING

## 88-217. Digital Logic Design I

Boolean algebra and logic gates; simplification of Boolean finctions; arthmetic operations; analysis and design of combinatorial logic circuits with SSI, MSI, and LSI; sequential logic components; registers; counters and memory units; analysis and synthesis of sequential synchronous and asynchronous networks. (3 lecture, 1.5 laboratory hours a week.)

## 88-225. Physical Electronics

Free electron theory of metals. Fermi level, work function. Band theory of solids, FermiDirac distribution, density of states. Semiconductors, donor and acceptor states. Semiconductor devices. Dielectric materials and devices. Magnetic materials. Lasers. Superconductivity. (Prerequisites: 85-124 and 64-220.) (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-226. Electronics I

An overview of electronic systems, linear circuits, frequency-response, network theorems, operations amplifiers, the ideal Op-Amp., nonideal performance of OpAmps, circuit examples, diodes, nonlinear circuit applications of Op-Amps., JFET, MOSFET, BJT. (Corequisites: 88-222 and 88-225.) (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-227. Digital Computer Architecture

Computer organization and architecture; number, character and instruction representations; addressing methods and machine program sequencing; central processing unit; input-output organization; memory; arithmetic; pipelining; computer peripherals; large computer sytems; assembly language programming. (Prerequisite:

88-217.) (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-228. EM Waves and Radiating Systems I

Time varying fields and Maxwell's equation; an introduction to electromagnetic waves, analysis techniques for distributed parameter electrodynamic systems; traveling waves and reflections; transmission line modeling; matching network design and "Smith Chart" techniques; waveguides; propagation; radiating systems. (Prerequisite: 64-220.) (3lec. ture, 1.5 laboratory hours or equivalent a week.)

## 88-313. Electromechanical Systems ।

Three phase steady-state sinusoidal analy. sis and measurement techniques; magnetic circuits; transformer theory, characteristics and equivalent circuits; electromechanical energy conversion; generalized machine concepts; D.C. machine theory and characteristics. (Prerequisites: 88-222 and 88225.) (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-316. Electronics II

Modeling concepts in electronic circuits; blpolar junction and field-effect transistor models; use of CAD in modern transistor circuit design; analog circuit configurations; analog circuit building blocks; operational amplifier circuits; transistor circuit feedback theory; integrated analog circuit design using semi-custom transistor arrays. (Prerequisite: 88-226.) (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-324. Control Systems I

State variable description of linear systems; controllability and observability; time andfrequency domain control techniques; nonlinear control systems; discrete-time systems; introduction to optimal contro; the use of analog and digital devices and computers in control theory and practice. (Prerequisite: 88-313.) (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-329. Analog Communications

Fourier Series and Transformations; moduIation principles; analysis and design of modulation and demodulation systems; analog communication systems; AM, FM

### 7.5 Electrical and Computer Engineering

and base band transmission; PAM, PWM, PPM; digital communications; A/D converters, uniform and non-uniform quantization; PCM and DPCM performance analysis. (3 lecture, 1.5 laboratory hours or equivalent a week.)

## 88-330. Digital Logic Design II

Contemporary digital system design; programmable logic device architectures; reconfigurable computing; design entry methods; VHDL; CAD tools; combinational and sequential logic design and implementation using programmable logic devices. (Prerequisite: 88-217.) (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-400. Engineering Design Project

The student shall submit a proposal to the Department Head of Electrical Engineering for a design project involving analytical and experimental and/or simulation results within three weeks of the commencement of firsterm classes. The Department Head will advise the student on the suitability of his or herproposal. The student shall complete the project, submit a written report and give an oral presentation conforming to the requirements set forth by the Electrical and Computer Engineering Department. This course gives the student an opportunity to demonstrate his or her ability to work with a minimum of supervision. (Prerequisite: permission of the Department Head.) (6 laboratory hours a week; offered over two lems.) (A 6.00 credit hour course.)
88-401. Engineering Design Project II

## 88-410. Directed Study I

The objective of this course is to provide an opportunity for the exceptional fourth-year sludent with a demonstrated record of scholarship to work in close accord with a faculty member on a project of mutual interest. A wilten report and oral presentation are required for evaluation by the Department. A Directed Study course may be taken by an eligible student in place of the normally prescribed fourth-year technical elective. (Prerequisite: An 11.0 average or better in the Third Year and permission of the Department Head.) (3 lecture hours a week or equivalent.)

## 88-419. Digital Communication

Sampling, multiplexing and PCM; digital transmission over baseband channels; decision theory; optimal filtering for transmission and reception; information theory and source coding; error control coding; digital transmission over bandpass channels; multimedia communications. (Prerequisite: 88 329.) (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-420. Directed Study II

The objective of this course is to provide an opportunity for the exceptional fourth-year student with a demonstrated record of scholarship to work in close accord with a faculty member on a project of mutual interest. A written report and oral presentation are required for evaluation. A Directed Study course may be taken by an eligible student in place of the normally prescribed fourthyear elective. (Prerequisite: an 11.0 average or better in the third year and permission of the Department Head.) (For the purposes of assigning grades and determining averages, 3 lecture hours a week have been allocated to the course.)

## 88-431. Control Systems II

Z-transform; digital control system design; implementation of digital control systems using micro-controller/DSP; introduction to optimal and robust control design; non-linear system analysis. (3 lecture, 1.5 laboratory hours a week.)

## 88-432. EM Waves and Radiating Systems

Fundamentals of electromagnetic radiation, antenna impedance dipoles, arrays, and long wire antennas; aperture antennas, receiving system considerations. (Prerequisite: $88-418$.) ( 3 lecture, 1.5 tutorial hours a week.)
88-433. Digital Integrated Circuit Design Review of MOS transitor fabrication; SPICE modeling of MOSFETs; MOS inverters (static and dynamic characteristics); combinational and sequential MOS circuits; dynamic logic; VLSI design methodologies; course project (CMOS library design, layout and simulation). (Prerequisites: 88-316 and 94-326.) (3 lecture, 1.5 laboratory hours a week.)

### 7.5 Electrical and Computer Engineering

## 88-434. Automotive Electronics

$C D$ ignition, high speed switching, motor drive control, inverters, PWM controllers, active filters, signal conditioners, power electronics, voltage regulators, selected topics, ASICS, RF amplifiers. (3 lecture, 1.5 laboratory hours a week.)

## 88-435. Microelectromechanical Dystems

Introduction to microactuators and microsensors including micro-motors, grippers, accelerometers and pressure sensors, microlithogrphy, micromachiningand microfabrication, bulk, surface and mold micromachining, mechanical and electrical issues in micromachining, integration of MEMS and microelectronics, design methodologies with project. (Prerequisite: 88-316.) (3 lecture, 1.5 laboratory hours a week.)

## 88-436. Computer Communications

Introduction to computer communications; network architecture and topology; ISO refernece model with emphasis on the data link layer, the medium access sublayer, the network layer, the transport layer, and the application layer. (Prerequisite: 88-419.) (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-437. Intelligent Computing

Computing models of the human mind. Neural computing models and learning algorithms. Fuzzy set theory and fuzzy systems. Evolutionary computing. Implementation techniques. Applications of intelligent computing. (Prerequisite: 88 -217.) (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-438. Coding and Information Theory

Fundamentals. Basic facts from abstract algebra, number theory and complexity thoery. Entropy and information theory, Reed-Solomon codes, Reed-Muller codes, codes based on algebraic geometry, cryptography, public key cryptosystems, RSA algorithm. Diffie-Hellman key exchange scheme, elliptic-curve cryptosystems, implementation issues. ( 3 lecture, 1.5 laboratory hours a week.)

## 88-439. Multimedia Systems

Introduction, multimedia data stream characteristics, audio information, image and graphics, video and animations, data compression, architectures and storage, multimedia operating systems, networking systems, communications, data base systems, hypermedia, programming languages, interfacing. ( 3 lecture, 1.5 laboratory hours a week.)

## 88-440. Wireless Communications

Introduction to wireless communications, cellular system design fundamentals propagation path loss, fading and multipath propagation, modulation techniques, diversity, coding and equalization, speech coding for wireless communications, multiple access networking, wireless standards. (3 lecture, 1.5 laboratory hours a week.)

## 88-441. Software Engineering

Introduction to software engineering, modeling the process and life-cycle, planning and managing the project, capturing the requirements, designing the system, writing and testing the programs, testing the system, delivering and maintaining the system, evaluation products, processes, and resources, improving predictions, processes, amd resources. (3 lecture, 1.5 laboratory hours a week.)

## 88-442. Advanced Computer Architecture II

Parallel and non-Von Newmann architecture, supercomputers, SIMD and MIMD structures, pipelining, vector processing, and array processing techniques, associate processors, Data flow computers, RISC computers, VLSI computer architecture, advances in computer architecture. (3 lecture, 1.5 laboratory hours a week.)

88-444. Analog Integrated Circuit Design Introduction to analog VSLI; basic biploar and CMOS circuit techniques; analog signal processing circuits; low-voltage techniques; current mode circuits; sample-data circuits; courses object (semi-custom biploar analog array fabrication and test) (Prerequisite: 88 316.) (3 lecture, 1.5 laboratory hours a week.)

## 88445. Power Eelectronics

intoduction, circuits with switches and diodes, power semiconductor switches, controlled half wave rectifiers, AC voltage controllers, full wave controlled rectifiers, DC ${ }^{1} D C$ converters, inverters, current source inverters, examples. ( 3 lecture, 1.5 laboraby hours a week.)
88-446. Advanced Computer Software Systems
Advanced computer software sytems, basic faatures of VHDL, basic VHDL modeling echniques, algorithmic level design, regisbrlevel design, gate level and ASIC library modeling, HDL-based design techniques, ASICs and ASIC design process, modeling torsynthesis, integration of VHDL into a topdown design methodology, synthesis algoithms for design automation. (3 lecture, 1.5 aboratory/tutorial hours or equivalent a week.)

## 88-447. Computer Networks and Security

Intoduction to computer networking and security, packet switching protocol layering, local area networking, fiber channel and security, transport protocol and security, appication on running on various transport protocol, interworking protocol and their secunty, frame relaying and ATM, network, emerging computer networking and security lechnology. (3 lecture, 1.5 laboratory/tutorial hours or equivalent a week.)

## 88-457 Digital Signal Processing

Fundamentals of discrete-time systems; the 2-Transformation; introduction to analog filler design; digital filter design; realization of digital filters; the Discrete Fourier Transformation. (3 lecture, 1.5 laboratory hours a week.)
88-480. Field Programmable Gate Arrays Introduction to field programmable gat arrays; programming technologies; technology mappings; logic block architectures; CAD tools for design, applications. (Prerequsites: 88-316 and 88-317.) (3 lecture, 1.5 booratory hours a week.)

### 7.6 Industrial and Manufacturing

## Systems

Engineering

## OFFICERS OFINSTRUCTION

## Professors

Lashkari, Reza S.; B.Sc. (Tehran), M.S.I.E., Ph.D. (Kansas State), P. Eng.-1977.
Dutta, Sourin P.; B.E., M. Tech. (Burdwan), Ph.D. (I.I. Sc.), P. Eng.-1984. (Head of the Department)
Wang, Hunglin (Michael); B.S. (National Tsing-Hua University), M.S. (SUNY, Buffalo), Ph.D. (lowa), P.Eng.-1991.
Taboun, Salem; B.Sc. (Tripoli), M.Sc. (Miami), Ph.D. (Windsor)-1992.
El Maraghy, Hoda A.; B.Eng. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.-1994.

El Maraghy, Waguih; B.Eng. (Cairo), M.Eng., Ph.D. (McMaster), P.Eng.-1994.

Alfa, Attahiru S.; B.Eng. (Ahmadu Bello U.), M.Sc. (Manitoba), Ph.D. (New South Wales), P.Eng.-2000. (Associate VicePresident, Research)

## Assistant Professor

Pusca, Daniela; M.Sc., Ph.D. (Romania)2000.

## Adjunct Assistant Professors

Salustri, Filippo A.; B.A.Sc., M.A.Sc., Ph.D (Toronto), P.Eng.-1996.
Yaber, M.Y.; B.Sc., M.S. (Kansas), Ph.D. (Nottingham)-2000.

## Cross-Appointment

Potvin, James R.; B.H.K. (Windsor), M.Sc., Ph.D. (Waterloo)-1999.

### 7.6.1 PROGRAM OF STUDY-INDUSTRIAL ENGINEERING

Industrial engineering is concerned with analysis, design, improvement, and operation of integrated systems of people, ma-

### 7.6 Industrial and Manufacturing Systems Engineering

chines, and materials. Industrial engineers are employed in all fields of manufacturing, business organizations such as banks, railroads, airlines, insurance companies, and hospitals, to improve the cost and services of all functions. The increasing complexity of industrial operations and the expansion of automated processes, coupled with the continued growth of the nation's industries and international competition, are factors contributing to the demand for industrial engineers.

Industrial engineering draws from specialized knowledge and skill in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from systems involving people, machines, materials, and energy. The industrial engineer should combine the basic aptitudes of an engineer with an understanding of the reactions of people in operating systems. About one-half of the program of study consists of basic sciences and engineering courses, accompanied by studies in the humanities. The rest of the work is in the areas of conventional industrial engineering (i.e., plant flow analysis, work management and analysis, etc.), statistical data analysis, engineering economy, systems engineering, ergonomics, manufacturing processes, and operations research, and in emerging disciplines such as flexible manufacturing systems, lean manufacturing, and simulation.
Note: The baccalaureate degree program in Industrial Engineering is accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.

## FIRST YEAR

The Fall and Winter terms are common to all Engineering Programs (see 7.3). In the Summer term, Co-op students will also register for 85-198 (Work Term I).

## SECOND YEAR

Fall Term
Lect. Lab. W.

| 85-211. (Comp.-Aided Analysis II) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- |
| 85-212. (Themodynamics I) | 3 | 1.5 | 3.75 |
| 85-214. (Circuit Analysis II) | 3 | 1.5 | 3.75 |
| 85-217. (Mech. of Def. Bodies ) | 2 | 2 | 3.00 |
| 91-21. (Intro. to Indust. Engrg.) | 3 | 2 | 4.00 |
| 62-215. (Vector Calculus) | 3 | 1 | 3.50 |

Winter Term
Lect. Lab. Wh

| 85-222. (Treatment of Expt. Data) | 3 | 1 | 3.50 |
| :--- | :--- | :--- | :--- |
| 85-233. (Fluid Mechanics I) | 3 | 1 | 3.50 |
| $41-117$. (ntro. To Economics) | 3 | 1 | 3.50 |
| 62-216. (Differential Equations) | 3 | 1 | 3.50 |
| $71-140$. (Principles of Mgmt.) | 3 | 0 | 3.00 |
| Non-technical Elective (see 7.3.2) |  |  |  |

## Summer Term

(Co-op students only)
85-298. (Work Term II)

## THIRD YEAR

## Fall Term

Lect. Lab. WL.

| 60-334. (World-Wide Info. Syst.) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 85-313. (Engrg. Economy) | 3 | 1.5 | 3.75 |
| $91-312$. (Operations Res. I) | 3 | 2 | 4.00 |
| $91-315$. (Work Analysis/Measure.) | 2 | 3 | 3.50 |
| $91-317$. (Systems Analysis) | 3 | 2 | 4.00 |
| One (1) Technical Elective* |  |  |  |

TECHNICAL ELECTIVES
Lect. Lab. W.

| 70-151. (Fin. Account. Prin. I) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 70-152. (Fin. Account. Prin. II) | 3 | 0 | 3.00 |
| 70-256. (Manag. Cost Account.) | 3 | 0 | 3.00 |
| 71-344. (Labour/Mgmt. Relations) | 3 | 0 | 3.00 |
| 87-314. (Transp. \& Traffic Engrg.) | 3 | 2 | 4.00 |

## Winter Term

(Co-op students only)
85-398. (Work Term III)

### 7.6 Industrial and Manufacturing Systems Engineering

| 91-321. (Mfg. Tech. \& Processes) | 3 | 2 | 4.00 |
| :--- | :--- | :--- | :--- | :--- |
| 91-322. (Simulation of Ind. Sys.) | 2 | 3 | 3.50 |
| 91:327. (Quality \& Reliability) | 3 | 2 | 4.00 |
| 91.328. (Facilities Planning) | 2 | 2 | 3.00 |
| 42.200. (Resource Mgmt.) | 3 | 0 | 3.00 |

and one of:

| 46.371. (industrial Psych.) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| $71 \cdot 340$. (Organizational Behaviour) | 3 | 0 | 3.00 |

## FOURTH YEAR

## Fall Term

( $C 0.0 \mathrm{op}$ students only)
88-498. (Work Term IV)
Winter Term

## Lect Lab. Wt.

| 91-400.(Project \& Seminar) | 0 | 6 | 6.00 |
| :--- | :--- | :--- | :--- |
| 91-411. (CAD/CAM) | 3 | 2 | 4.00 |
| 91-412.(Operations Res. II) | 3 | 2 | 4.00 |
| 11-413.(Prod. Analysis) | 3 | 1 | 3.50 |
| One (1) Technical Elective* |  |  |  |
| Non-technical Elective (see 7.3.2) |  |  |  |

Summer Term
Lect. Lab. Wt.

| 85-421. (Engrg. \& Society) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 91-400. (Project and Seminar) | 0 | 6 | 6.00 |
| 91-415. (Human Factors) | 3 | 2 | 4.00 |
| 91-425. (Materials. Handling) | 3 | 2 | 4.00 |
| 91-429. (Dec. Supp. Systems) | 3 | 1 | 3.50 |
| 92-321. (Control Theory I) | 3 | 1 | 3.50 |

TECHNICAL ELECTIVES

Lect. Lab. Wt.

| 91-430. (Directed Study) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 91-431. (Flexible Mfg. Systems) | 3 | 2 | 4.00 |
| 11-432. (Stats. Methods in Mfg.) | 3 | 2 | 4.00 |
| 11-433. (Indust. Safety \& Health) | 3 | 2 | 4.00 |
| 91-444. (Stats. for Simulation) | 2 | 3 | 3.50 |

'Not all of the above technical electives will be offered every year.

### 7.6.2 COURSE DESCRIPTIONSINDUSTRIAL ENGINEERING

## 91-211. Introduction to Industrial Engineering

An introduction to the various facets of industrial engineering including its development as a discipline and its relationship with Operations Research and Manufacturing Sciences; emphasis on Systems Approach. Impact of computers on I.E. functions and recent developments. Class discussions are supplemented by visits to various local industries. (3 lecture, 2 laboratory tutorial hours a week.)

## 91-312. Operations Research I

Deterministic O. R. models. Linear program-ming-graphical and simplex methods, duality theory. Transportation, assignment and network models. Sensitivity analysis. Integer programming, branch-and-bound and cutting plane methods, mixed IP algorithms, $0 / 1$ programming. Use of LP and IP computer software programs. Dynamic pro-gramming-principle of optimality, stagecoach problems, recursive relationship. (Prerequisite: 62-126.) (3 lecture, 2 laboratory hours a week.)

## 91-315. Work Analysis and <br> Measurement

The work system, operations analysis, methods improvement. A survey of work measurement techniques and applications as related to manufacturing and service industries. Wage payment plans and their scope. Application of the se techniques using the work measurement lab. Special emphasis on methods for coping with unbalances and variations in the systems. (2 lecture, 3 laboratory hours a week.)

## 91-317. Systems Analysis and Design

Basic concept of systems and systems engineering; system representation; system life cycle; system design process; system design for operational feasibility. Some basic computer software for systems analysis and design are discussed, including data based management systems and knowledge based systems. (3 lecture, 2 laboratory tutorial hours a week.)

### 7.6 Industrial and Manufacturing Systems Engineering

## 91-321. Manufacturing Technology and Processes

An introduction to manufacturing processes, including foundry, fabrication, forming, and cutting. Selection of materials. Manufacturing processes-machining processes, toollife, cutting data bank. Metal forming-forging, presswork, die-design. Selection and justification of machine tools, machining centres. Joining of materials, welding-robotization, adhesives. Finishing operations-honing. Emphasis on the economics, capabilities, and productivity of various processes in Manufacturing. Applications of these techniques using the Technical Support Centre. (3 lecture, 2 laboratory tutorial hours a week.)
91-322. Simulation of Industrial Systems Introduction to Simulation-Random number and variate generation. Applications to queues, inventories and related models. Special purpose simulation languages-SIMAN/ARENA. Input data analysis and model validation. Simulation output analysis, design of experiments. Use of computer software. (Prerequisite: 85-222.) (2 lecture, 3 laboratory hours a week.)

## 91-327. Quality and Reliability Engineering

Impact of quality on manufacturing processes. Methods and philosophy of statistical process control. Importance of sampling. Control charts for attributes and for variables. Cusum charts. Other SPC techniques. Process capability analysis. Acceptance sampling. Basic concepts of TQM. Reliability engineering, failure modes; designing for reliability and maintainability, ISO 9000, QS 9000, TS 9000 standards. (Prerequisite: 85-222.) (3 lecture, 2 tutorial hours a week.)

## 91-328. Facilities Planning

Topics include facilities planning as a systems concept; systematic layout planning; systematic handling analysis; cost concepts in materials handling; computerized layout planning models; design of storage systems; line balancing; location problems. (2 lecture, 2 laboratory hours a week.)

## 91-400. Project and Seminar

Each student working individually will undertake an industrial engineering project. The project will be assigned; or, if a student wishes to undertake a project of his or her choice, such a project must have departmental approval. (6 laboratory hours a week; offered over two terms.) (A 6.00 credit hour course.)

## 91-411. Computer-Aided Design and Manufacturing

Fundamental concepts in computer-aided design, numerical control of machine tools, computer-aided manufacturing, computeraided process planning, group technology, robotics and their applications, Flexible Manufacturing Systems. Introduction to and development of CAD-CAM. Hardware and software for CAD, workstations, 3-D modelling. Finite elementmethod. NC, CNC, DNC. APT language, part programming. Robotics and applications. Group technology, CAPP and MRP. Integration of CAD with CAMjustification; case studies. From CAD-CAM to FMS and CIM. Emphasis on the integration of manufacturing systems. Applications of these concepts using the CIM laboratory. (Prerequisite: 91-321 or equivalent.) (3 lecture, 2 laboratory/tutorial hours a week.)

## 91-412. Operations Research II

Probabilistic O.R. models. Markov chains and their properties; continuous-time Markov chains. Queuing theory; the role of Exponential and Poisson distributions. Applications of queuing theory in production systems. Markovian decision processes. Reliability. Renewal Theory. Use of computer software programs to solve optimization problems in queues. (Prerequisite: 85-222.) (3 lecture, 2 laboratory hours a week.)
91-413. Production Systems Analysis
Analysis and control of production systems. Demand forecasting. Deterministic and stochastic inventory systems. Aggregate planning and master scheduling. Material requirement planning. Operations sequencing and balancing. Job shop scheduling and control systems. Introduction to group technology and flexible manufacturing systems.

### 7.6 Industrial and Manufacturing Systems Engineering

(Perequisite: 91-312.) (3 lecture hours, 1 tuprial hour a week.)

## 91-415. Human Factors in Engineering Systems

Implementing human factors in systems design; human capabilities and limitations; design of the industrial workplace; design of the environment-lighting, temperature, noise, atmosphere; design of display and control systems; human factors in expanding technology-data processing and consumer products. (Prerequisites: 91-315 and 91-328.) (3 lecture, 2 laboratory hours a week.)

## 91-425. Materials Handling and Systems Safety

The Systems Design Process: traditional equipment review and description; automated delivery systems; load transfer systems; equipment selection process; storage systems; modelling handling systems; hazard related problems in materials handling syslems design; key legislation related to satety and work compensation. (Prereq-visile:91-328.) (3 lecture, 2 laboratory hours a week.)

## 91-429. Management Decision Support Systems

Formulation of decision problems in engineering and management. Decision criteria. Strategies. Utility theory and decision funcfons. Information requirements of decisionmaking systems. Design of information systems to support decision-making systems. Economic considerations. Use of computer software packages. (Prerequisite: 91-317.) (3 lecture hours, 1 laboratory hour a week.)

## 91-430. Directed Study

The student will undertake a literature survey and/or a laboratory project in consultalion with the Depatment Head. A written report is mandatory and participation in the Industrial Engineering Program seminars may be part of the requirement. (Prerequisite: fourth-year standing with at least an 8.0 average.)

## 91-431. Fundamentals of Flexible Manufacturing Systems

Batch production, hard vs. soft automation, development of FMS-CAD-CAM, robot-ics-integration. Data base-tool data, fixturing. Tool management, swarf removal, preventive maintenance. Justification for the implementation of FMS. Case studies. Sensors and programmable controllers, AGVS and automated warehousing. Impact of FMS - human aspects, factory of the future. (Prerequisite 91-413 or equivalent.) (3 lecture, 2 laboratory/tutorial hours a week.)

## 91-432. Statistical Methods in Manufacturing

Use of designed experiments in engineering design process. Experiments involving one factor; ANOVA; fixed, random, and mixed models; randomized blocks, Latin squares, and incomplete block designs. Factorial designs. Fractional designs. The Taguchi approach to quality design. Emphasis is put on industrial applications of various designs. (Prerequisite: 91-327.) (3 lecture, 2 laboratory hours a week.)

## 91-433. Industrial Safety and Health

Fundamentals of systems safety; safety and accident prevention-causes and models; safety in product and process design; faulttree analysis and risk assessment; safety and the physical environment; engineering methods of controlling chemical hazards; code of regulations for worker safety. (Prerequisite: 91-315.) (3 lecture, 2 laboratory hours a week.)

## 91-434. Statistical Methods for Simulation

Simulation output analysis. Measures of performance and their estimation; transient and steady-state analysis. Design of experiments in computer simulation. Single-factor and multi-factor designs. Fractional designs. Response surfaces. (Prerequisite: 91-322.) (2 lecture, 3 laboratory hours a week.)

### 7.7 Mechanical, Automotive, and <br> Materials <br> Engineering

## OFFICERS OF INSTRUCTION

## Professors Emeriti

Reif, Zygmunt Francis; B.Sc. (Eng.), Ph.D. (London), P.Eng.-1969.
Sridhar, Krishnaswamy; B.Sc. (Madras U.) D.M.I.T. (Madras Inst, of Technology), M.A.Sc., Ph.D. (Toronto), P.Eng.-1963.

Youdelis, William V.; B.Sc. (Alberta), M.Eng., Ph.D. (McGill), P.Eng.-1965.

## Professors

Watt, Daniel Frank; B.Sc. (Alberta), Ph.D. (McMaster), P.Eng.-1969.
Rankin, Gary W.; B.A.Sc., M.A.Sc., Ph.D. (Windsor), P. Eng.-1980.
Wilson, Norman W.; B.Eng., M.Eng. (McMaster), Ph.D. (Wales), P.Eng.-1980.
Alpas, Ahmet T.; B.Sc., M.Sc. (Middle East Tech.), Ph.D. (Open Univ. U.K.), P.Eng1989.

Frise, Peter R.; B.Sc., M.Sc. (Queen's), Ph.D. (Carleton), P.Eng.-1997. (ChryslerNSERC Industrial Chair in Mechanical Design)
Reader, Graham T.; B. Tech. (Bradford), B.A. (O.U.), P.Sc./M.B.A./J.S.D.C., Ph.D. (Bradford), P.Eng., C.M.E., C.Eng., Eur.Ing., F.I.Mar. E.-1999. (Dean of the Faculty of Engineering)

## Research Professor

Northwood, Derek Owen; B.Sc. (Eng.), A.R.S.M. (London), M.Sc. (Part I), Ph.D. (Surrey), F.I.M., F.A.S.M., F.I.M.M.A., FI.E. (Aust.), C.P.Eng. (Aust.)-1976.

## Associate Professors

Gaspar, Robert George Stephen; B.A.Sc., M.A.Sc., Ph.D. (Windsor), P.Eng.-1983. (Head of the Department)

Sokolowski, Jerzy Hieronim; M.M.E., Ph.D. (Tech. U. of Silesia)-1993. (Ford-NSERC Industrial Chair in Light Metals Casting)
Sobiesiak, Andrzej; M.Sc., Ph.D. (Warsaw Technical University), P. Eng.-1998 (Chrys-ler-NSERC Industrial Chair in Altemate Fuels)
Hu, Henry; B.A.Sc. (Shanghai University), M.A.Sc. (Windsor), Ph.D. (Toronto)-2000.

## Assistant Professors

Ting, David Sing-Khing; B.Sc. (Manitoba), M.Sc., Ph.D. (Alberta)-1997.

Altenhof, William; B.A.Sc., M.A.Sc., Ph.D. (Windsor)-1999.
Chen, Xiang; B.Sc., M.Sc. (Huazhong Univ. of Science and Tech.), M.Sc., Ph.D. (Louisana State)-2000. (Cross-appointment with Electrical and Computer Engineering)
Bowers, Randy; S.M. (M.I.T.), B.S., Ph.D. (Rensselaer)-2000.

## Lecturer

Minaker, Bruce; B.A.Sc. (Waterloo), M.Sc., Ph.D. (Queen's)-2001.

## Adjunct Professors

Chao, Benjamin S.; B.S., M.S., Ph.D. (Syracuse)-1990.
Hageniers, Omer L.; B.A.Sc., M.A.Sc.,
Ph.D. (Windsor), P.Eng.-1973.
Knalighi, Bahram; B.S. (Arya-Mehr), M.S., Ph.D. (lowa)-1993.
Kumar, Kurichi R.; B.E. (Madras), M.A.Sc., Ph.D. (Windsor)-1993.
Pryor, Timothy R.; B.E.S. (Johns Hopkins), M.S. (Illinois), Ph.D., D.Sc. (Windsor)1973.

Yamauchi, Hisao; B.Eng. (Tokyo), M.S., Ph.D. (Northwestern), P.Eng.-1980.
Zhang, Chao; B.Sc., M.Sc. (Xi'an Jiaotong), Ph.D. (UNB), P.Eng.-1990.

## Adjunct Assistant Professor

Tjong, Jimi S-Y.; B.A.Sc., M.A.Sc., Ph.D. (Windsor)-1993.

### 7.7 Mechanical, Automotive, and Materials Engineering

## Cross-Appointments

garnon, Ronald Michael; B.A., M.Sc. (Windsor), M.S. (Stanford), Ph.D. (Carleton)1975.

Transitional Appointments:
Zamani, Nader G.; B.Sc. (Case Western), M.Sc., Ph.D. (Brown)-1986.

### 77.1 PROGRAMS OF STUDY-MECHANICAL ENGINEERING

Sudents may take a regular program in Me chanical Engineering, or they may specialze in the Engineering Materials Option or he Automotive Option as described below.
Mechanical engineers are responsible for the design, construction, maintenance, and operation of machines and systems of madrines. They create, plan, research, supervise, analyze, and generally act as the protessionals of mechanical technology.
The mechanical engineer's knowledge and ssills are needed in many industries, such as heating, ventilating, and air conditioning; tansportation; power generation and distribution; metal production and processing; manulacturing; and chemical and electrical equipment. Mechanical engineers commonly go beyond the limits of purely mechanical work. They are found at all levels of management in private industry and the public sector.

Students in the regular program may specialize by selecting four elective courses. These courses may be selected from those offered in the areas of: air conditioning; dynamics and stress analysis; vibrations and mise; and gas dynamics and turbomachineny.
Students interested in the Engineering Malenals Option are able to begin their specialred studies in the Summer term of their third year. The Option includes a series of four required and two elective courses. Engineering Materials courses include modern developments in such areas as lightweight composites, high temperature materials, surface treatments, materials with special
electrical, optical, and/or magnetic properties, and novel processing techniques.
Students interested in the Automotive Option are able to begin their specialization in the Winter term of their fourth year. The Option includes three required courses and one technical elective. Note: The baccalaureate degree program in Mechanical Engineering is accredited by the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers.

## FIRST YEAR

The Fall and Winter terms are common to all Engineering programs (see 7.3). In the Summer term, Co-op students also will register in 85-198 (Work Term I).

## SECOND YEAR

## Fall Term

Lect Lab. Wt.

| 85-211. (Comp.-Aided Analysis II) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- | :--- |
| 85-212. (Themmodynamics I) | 3 | 1.5 | 3.75 |
| 85-214. (Circuit Analysis II) | 3 | 1.5 | 3.75 |
| 85-217. (Mech. of Def. Bodies I) | 2 | 2 | 3.00 |
| 92-210. (Dynamics) | 3 | 2 | 4.00 |
| 62-215. (Vector Calculus) | 3 | 1 | 3.50 |

## Winter Term

|  | Lec. | Lab. Wt. |  |
| :--- | :---: | :--- | :--- |
| 85-222. (Treatment of Expt. Data) | 3 | 1 | 3.50 |
| 85-233. (Fluid Mechanics I) | 3 | 1 | 3.50 |
| 87-227. (Mech. of Def. Bod. II) | 2 | 2 | 3.00 |
| 92-222. (Comp.-Aided A \& D) | 3 | 2 | 4.00 |
| 41-117. (Intro. Economics) | 3 | 1 | 3.50 |
| 62-216. (Differential Equations) | 3 | 1 | 3.50 |

## Summer Term

(Co-op students only)
85-298. (Work Term II)

## THIRD YEAR

Fall Term
Lect. Lab. Wt.

| 85-313. (Engrg. Economy) | 3 | 1.5 | 3.75 |
| :--- | :--- | :--- | :--- |
| 92-220. (Machine Dynamics) | 3 | 2 | 4.00 |
| 92-315. (Mechanical Vibrations) | 3 | 2 | 4.00 |
| 92-316. (Heat Transfer I) | 3 | 2 | 4.00 |
| 92-317. (Applied Thermodyn.) | 3 | 2 | 4.0 |
| 92-320. (Fluid Mechanics II) | 3 | 2 | 4.00 |

### 7.7 Mechanical, Automotive, and Materials Engineering

## Winter Term

(Co-op students only)

| 85-398. (Work Term III) |  |  |  |
| :---: | :---: | :---: | :---: |
| Summer Term-Mechanical Program |  |  |  |
|  |  |  | Wt. |
| 92-311. (Stress Analysis 1) | 3 | 2 | 4.00 |
| 92-321. (Control Theory 1) |  | 1 | 3.50 |
| 92-322. (Comp.-Aided A \& D) | 2 | 3 | 3.50 |
| 92-324. (Engrg. Measurements) | 3 | 3 | 4.50 |
| 92-326. (Heat Transfer II) | 2 | 2 | 3.00 |
| 92-401. (Project and Seminar) | 0 | 6 | 6.00 |

## Summer Term-Materials Option

Lect. Lab. Wt.

| 89-330.(Materials \& Properties) | 3 | 2 | 4.00 |
| :--- | :--- | :--- | :--- |
| 89-331. (Therno. \& Kinetics) | 3 | 2 | 4.00 |
| Materials Technical Elective *. |  |  |  |
| 92-311. (Stress Analysis I) | 3 | 2 | 4.00 |
| 92-321.(Control Theory I) | 3 | 1 | 3.50 |
| 92-326. (Heat Transfer II) | 2 | 2 | 3.00 |

## FOURTH YEAR

## Fall Term

(Co-op students only)
85-498. (Work Term IV)
Winter Term-Mechanical Program
Lect. Lab. Wt.

| 92-401.(Project \& Seminar) | 0 | 6 | 6.00 |
| :--- | :--- | :--- | :--- |
| 92-411. (Machine Design I) | 2 | 3 | 3.50 |
| 42-200.(Resource Mgmt.) | 3 | 0 | 3.00 |
| Mechanical Technical Elective |  |  |  |
| Mechanical Technical Elective |  |  |  |
| Non-technical Elective (see 7.3.2) |  |  |  |

Winter Term-Materials Option
Lect. Lab. Wt.

| 89-401. (Project \& Seminar) | 0 | 6 | 6.00 |
| :--- | :--- | :--- | :--- |
| 89-42..(Ceramic Matenals) | 3 | 1 | 3.50 |
| 89-421. (Deformation \& Fracture) | 3 | 2 | 4.00 |
| 92-411.(Machine Design I) | 2 | 3 | 3.50 |
| 42-200. (Resource Mgmt.) | 3 | 0 | 3.00 |
| Non-technical Elective (see 7.3.2) |  |  |  |

Winter Term-Automotive Option
Lect. Lab. Wh.

| 92-401. (Project \& Seminar) | 0 | 6 | 6.00 |
| :---: | :---: | :---: | :---: |
| 92-411. (Machine Design I) | 2 | 3 | 3.50 |
| 42-200. (Resource Mgmt.) | 3 | 0 | 3.00 |
| 92-463. (Vehicle Systems) | 2 | 1.5 | 275 |
| 92-465. (Intemal Comb. Engines) | 2 | 1.5 | 275 |
| Non-technical Elective (see 7.3.2) |  |  |  |
| Summer Term-Mechanical Program |  |  |  |
|  | Lect Lab. W. |  |  |
| 85-421. (Engrg. and Society) | 3 | 0 | 3.00 |
| 92-412. (Control Theory II) | 2 | 3 | 3.50 |
| 92-421. (Machine Design II) | 2 | 3 | 3.50 |
| 92-459. (Comp.-Aided Anal. Tools) |  | 3 | 3.50 |

Mechanical Technical Elective* Mechanical Technical Elective*

## Summer Term-Materials Option

Lect Lab. Wh.

| 85-421. (Engrg. and Society) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- |
| 92-322. (Comp. Alded A \& D) | 2 | 3 | 3.50 |
| 92-324. (Engrg. Measurements) | 3 | 3 | 4.50 |
| 92-421. (Machine Design II) | 2 | 3 | 3.50 |
| 89-401. (Project \& Seminar) | 0 | 6 | 6.00 |
| Materials Technical Elective* |  |  |  |

Materials Technical Elective**

\section*{Summer Term- Automotive Option Lect. Lab. W. <br> | 85-421. (Engrg. and Society) | 3 | 0 | 3.00 |
| :--- | :--- | :--- | :--- | :--- |
| 92-412. (Control Theory II) | 2 | 3 | 3.50 |
| 92-421. (Machine Design II) | 2 | 3 | 3.50 |
| 92-459. (Comp.-Aided Anal. Tools) | 2 | 3 | 3.50 |
| 92-461. (Elements/Mech. Design) | 2 | 4 | 4.00 |
| Automotive Technical Elective |  |  |  |
| MECHANICAL TECHNICAL ELECTIVES |  |  |  |
| Lect. Lab. W. |  |  |  |}


| 92-450. (Gas Dynamics) | 1.527 |
| :---: | :---: |
| 92-451. (Turbomachines) | 21.527 |
| 92-452. (Energy Conversion) | 21.5 |
| 92-453. (Air Conditioning) | $\begin{array}{llll}2 & 1.5 & 2.7\end{array}$ |
| 92-454. (A/C Systerns Design) | 21.517 |
| 92-455. (Noise) |  |
| 92-456. (Mechanical Vibration II) | $2 \begin{array}{lll}2 & 1.5 & 27\end{array}$ |
| 92-457. (Dynamics) | $\begin{array}{llll}2 & 1.5 & 27\end{array}$ |
| 92-458. (Stress Analysis II) | 21.5 |

### 7.7 Mechanical, Automotive, and Materials Engineering



Lect Lab. Wt.

| 89-430. (Materials Degradation) | 3 | 1 | 3.50 |
| :--- | :--- | :--- | :--- |
| 89-431. (Electronic Materials) | 3 | 1 | 3.50 |
| 89-432. (Modern Steels) | 3 | 1 | 3.50 |
| 89-433. (Phys. Metallurgical Proc.) | 2 | 2 | 3.00 |
| 89-434. (Polymers) | 3 | 1 | 3.50 |

"Not all Materials Technical Electives are gven each year or in both terms.

|  | Lect Lab. Wt. |  |  |
| :---: | :---: | :---: | :---: |
| \$2-455. (Noise) | 2 | 1.5 | 2.75 |
| 92-456. (Mechanical Vibration II) | 2 | 1.5 | 2.75 |
| 22-458. (Stress Analysis II) | 2 | 1.5 | 2.75 |
| 89421. (Deformation \& Fracture) | 3 | 2 | 4.00 |
| 899430.(Materials Degradation) | 3 | 1 | 3.50 |
| 804333. (Phys. Metallurgical Proc.) | 2 | 2 | 3.00 |
| 80-434. (Potymers) | 3 | 1 | 3.50 |
| 11/321.(Mfg. Tech. \& Processes) | 3 | 2 | 4.00 |
| 913227. (Quality \& Reliability) | 3 | 2 | 4.00 |
| 91, 328.(Facilities Planning) | 2 | 2 | 3.00 |

"' Not all Automotive Technical Electives are given each year or in both terms.

### 7.7.2 COURSE DESCRIPTIONSMECHANICAL ENGINEERING

## 92-210. Dynamics

Topics in dynamics of rigid bodies. Forces and accelerations, energy and momentum methods for rigid bodies in plane motion. Motion of rigid bodies in three dimensions. (Prerequisite: 85-122.) (3 lecture, 2 tutorial hours a week.)

## \$2-220. Machine Dynamics

Linkages of flexible connectors, cams, toothed gearing, intermittent motion mechanisms, trains of mechanisms, static and dynamic analysis of mechanical flywheels, balancing of rotating and reciproaling masses. (Prerequisite: 92-210.) (3 ecture, 2 tutorial hours a week.)

## \$2-222. Computer-Aided Analysis and Design

Simulation and analysis of lumped parameIr systems; parameter optimization in a design study using numerical solutions to the
governing equations; introduction to com-puter-aided design packages. (Prerequisite: 85-211.) (3 lecture, 2 laboratory or tutorial hours a week.)

## 92-311. Stress Analysis I

Theory of failure, stress concentration, energy methods, curved beams, thick cylinders, flat plates, torsion of noncircular sections. Introduction to finite element methods. (Prerequisite: 87-227.) (3 lecture, 2 laboratory hours a week.)

## 92-315. Mechanical Vibrations

Free, damped, and forced vibration of single and multi-degree of freedom systems with discrete masses. Exact and approximate methods of solution. Vibration isolation, vibration transducers, use of computers in vibration analysis. ( 3 lecture, 2 tutorial hours a week.)

## 92-316. Heat Transfer I

Introduction to conduction, convection, and radiation. Steady state and transient system analysis using both exact and approximate solution techniques. (3 lecture, 2 laboratory hours a week.)

## 92-317. Applied Thermodynamics

Ideal gas mixtures and psychrometrics. Reacting mixtures and combustion. Power cycles, refrigeration and heat pump cycles. (Prerequisite: 85-212.) ( 3 lecture, 2 laboratory/tutorial hours a week.)

## $92-320$. Fluid Mechanics II

Navier-Stokes equations and some exact solutions, external flows boundary layer over a flat plate, drag forces; turbulent flows in pipes and mixing length theory, flow measurement, compressible flows and introduction to potential flows. (Prerequisite: 85-233.) (3 lecture, 2 laboratory/tutorial hours a week.)

## 92-321. Control Theory I

Control system concepts, linear modelling and analysis of response and stability of physical systems, complex variables and Laplace transforms, frequency, and transient response analysis and performance specifications. (Prerequisites: 62-215 and 62-216.) (3 lecture hours, 1 tutorial hour a week.)

### 7.7 Mechanical, Automotive, and Materials Engineering

## 92-322. Computer-Aided Analysis and Design of Thermal Systems

Computer based and classical optimization techniques including Lagrange multipliers, search methods and geometric, linear and dynamic programming with application to the analysis and design of thermo-fluid systems. (Prerequisites: 92-222 and 92-317.) (2 lecture, 3 laboratory/tutorial hours a week.)

## 92-324. Engineering Measurements

Basic concepts in instrumentation; error analysis; instrumentation and measurement systems including sensors, transducer, signal conditioning and display; microcom-puter-based data acquisition and analysis. (Prerequisite: 85-222.) (3 lecture, 3 laboratory/tutorial hours a week.)

## 92-326. Heat Transfer II

An extension of the fundamentals introduced in 92-316 with applications involving the synthesis, design and optimization of heat exchange equipment. (Prerequisite: 92-316.) (2 lecture, 2 laboratory/tutorial hours a week.)

## 92-401. Project and Seminar

Each student working either individually or in a small group shall undertake an assigned project during the third and fourth years of study. If a student wishes to undertake a project of his or her own choice, such a project must be approved by the Department Head. (6 laboratory hours a week; offered over two terms.) (A 6.0 credit hour course.)

## 92-411. Machine Design I

Philosophy of machine design. Design factor/reliability relationships. Contemporary fatigue analysis, including low- and high-cycle, triaxial state of non-reversed stress and fatigue damage, with applications of selected mechanical elements. (Prerequisite: 92-311.) (2 lecture, 3 laboratory hours a week.)

## 92-412. Control Theory II

Design of compensators, non-linear control systems, describing function, phase plane, analogue and digital simulation, limit cycles, digital control, D-A converters, z-transforms, sequential control. (Prerequisite: 92-321.) (2 lecture, 3 laboratory/tutorial hours a week.)

## 92-421. Machine Design II

The principles of machine design and the design of machine elements. Major emphasis is placed on reliability, fatigue and fracture design using a case study approach, Design topics are selected from: bearing librication, springs, fasteners, flexible machine elements and power transfer systems. (Prerequisite: 92-411.) (2 lecture, 3 tutorial hours a week.)
92-459. Computer-Aided Analysis Tools Three-dimensional graphics; fundamentals of finite element methods for problem solving in heat transfer, solids, and trusses using finite element computer programs. (Prerequisite: 92-222.) (2 lecture, 3 laboratory/tutorial hours a week.)

## MECHANICAL TECHNICAL ELECTVES

Some of these courses may not be offered in any given year.

## 92-450. Gas Dynamics

Basic concepts and flow equations, one dimensional flows, isentropic flows in variable area ducts, constant area duct flows, Fanno and Rayleigh lines, normal shock, nozzles and diffusers, oblique shock, measurements. (Prerequisite: 92-320.) (2lecture, 1.5 tutorial hours a week.)

## 92-451. Turbomachines

Dimensional analysis and similitude; definitions of efficiency, two dimensional analysis of axial flow turbines and compressors, three dimensional flow, centrifugal pumps and compressors. (Prerequisite: $92-450$.) (2 lecture, 1.5 laboratory/tutorial hours a week.)

## 92-452. Energy Conversion Systems

Survey of energy resources and their availability. Energy conversion systems, theiroperating characteristics, capabilities and limitations. (Prerequisite: 92-317.) (2 lecture, 1.5 tutorial hours a week.)

## 92-453. Air Conditioning

Principles of environmental comfort control, applied psychrometrics, load calculations, air distribution system design. (Prerequisite: 92-317.) (2 lecture, 1.5 laboratory hours a week.)

### 7.7 Mechanical, Automotive, and Materials Engineering

## \$2-454. Air Conditioning Systems Design

Computer methods in energy analysis and duct design, heat recovery devices, capital and operating costs. (Prerequisite: 92-453.) (2 lecture, 1.5 laboratory hours a week.)
92-455. Environmental Effects and Control of Noise
Physical properties of sound and noise. measurement of noise, noise control, hearing characteristics and environmental eflects of noise. (2 lecture, 1.5 wtoriallaboratory hours a week.)

## 92-456. Mechanical Vibrations II

Vibration of bodies with distributed mass. Exact and approximate methods of solution. Whirling of shafts. Vibration maintenance engineering. Introduction to non-linear vibration. (Prerequisite: 92-315.) (2 lecture, 1.5 tutoriallaboratory hours a week.)

## 92-457. Dynamics

Kinematics of particles and rigid bodies. Dynamics of particles, systems of particles and igid bodies, with applications to engineering problems. The gyroscopic effect. Introduction to variational methods. Lagrange's equations, Hamilton's principle. (2 lecture, 1.5 tutorial hours a week.)

## 92-458. Stress Analysis II

Two-dimensional theory of elasticity, torsion ofnon-circular sections, and methods of experimental stress analysis. (Prerequisite: 92-311.) (2 lecture, 1.5 tutorial/laboratory hours a week.)
92-461. Elements of Mechanical Design Expansion of engineering graphics to indude statistical tolerance design, geometric oimensioning and tolerancing (GD \& T), schematics for standard components, designfor manufacture and assembly (DFMA), reverse engineering, quality methods, and design morphology. (Prerequisite: 92-311.) (2lecture, 4 laboratory hours a week.)

## 92-463. Vehicle Systems Design

Astudy of vehicles and stytems with lectures and labs examining the major components of motor vehicles; vehicle configurations, tanding and ride, suspensions, engine layouls, drivetrains, all- and four-wheel drive, brakes, electrical systems, lubricants, fuel
systems, protective coatings, the regulatory environment. (Prerequisite: 92-315.) (2 lecture, 1.5 tutoria/laboratory hours a week.)

## 92-465. Internal Combustion Engines

 Mechanical design of vehicular internal combustion engines for different applications. Covers basic engine types and their operation from an energy conversion systems viewpoint, where the system needs to satisfy a number of requirements. These performance and operational requirements are derived from basic thermodynamics, operation of heat engine cycles, ignition and combustion processes, fuel system design, heat transfer, emissions formulation, available instrumentation and testing procedures. Environmental impact of vehicular designs on global pollution and government standards. Recent developments in energyefficient and altemate fuel engines. (2 lecture, 1.5 tutorial hours a week.)
### 7.7.3 COURSE DESCRIPTIONSMATERIALS OPTION

## 89-330. Materials and Their Properties

 The relationship of the engineering properties of materials to their atomic structure, bonding, crystal structure, imperfections and microstructure. The processing of materials to produce required structure and properties. Includes consideration of crystal structure determination, phase diagrams, diffusion, phase transformations, solidification, heat treatment and deformation. The laboratory is a term-long project designed to familiarize students with the use of materi-als-related equipment commonly found in industrial and research laboratories. (3 lecture, 2 laboratory hours a week.)
## 89-331. Thermodynamics and Kinetics of Materials

Thermodynamics: review of First and Second Laws, gas laws, humidity, thermochemistry, entropy, reversible and irreversible processes, equilibrium criteria, Glbbs free energy, activity and activity coefficient, solution thermodynamics, Raoult's and Henry's Laws, Gibbs-Duhem equation, alloy phase equilibria, free energy-composition diagrams, Ellingham diagrams.

### 7.7 Mechanical, Automotive, and Materials Engineering

Kinetics: empirical treatment for homogeneous reaction rates, reaction order and specific rate constant, activation energy, Arrhenius' Law, energy distribution in reacting systems, hete rogeneous reactions.
Selected problems in materials processing to illustrate theory. (3 lecture, 2 laboratory hours a week.)

## 89-401. Project and Seminar

Materials research project related either to development work and problem-solving, or to an area of current graduate research. Course requirements include three seminars and a final report. The student seminars focus on problem identification, review of existing knowledge, design of experiment(s), equipment construction, data collection, and presentation and interpretation of results. (6 laboratory hours a week; offered over two terms.)

## 89-420. Ceramic Materials

Uses of traditional and advanced ceramics. Monolithic and composite ceramics. Comparison of ceramics with metals and alloys. Processing: raw material preparation, forming techniques, theory and practice of sintering, quality control. Properties: modulus of rupture, creep, corrosion, erosion, and electrical, magnetic and optical properties. (3 lecture hours, 1 laboratory hours a week.)

## 89-421. Deformation and Fracture

Introduction to basic plasticity theory and its application to common metal forming and metal cutting processes. Fracture mechanics and its applications in brittle and ductile fracture, creep and fatigue, for purposes of design and of analysis. (3 lecture, 2 laboratory hours a week.)

## MATERIALS OPTION TECHNICAL ELECTIVES

## 89-430. Materials Degradation: Corrosion and Wear

Factors affecting and determining performance of materials under corrosive and abrasive conditions. Design for corrosion and wear control by use of surface protective treatments, environment modification and special property materials. The laboratory is
a term-long study of a real-life corrosion problem. (3 lecture hours, 1 laboratory hour a week.)

## 89-431. Electronic Materials

Uses of materials in electronic devices. Histories of semiconductor devices (from transistors to 16 Mb RAM) and superconductors (from Hg to high $\mathrm{Tc} \mathrm{La}-\mathrm{Sr}-\mathrm{Cu}$ oxides). Electron theories: the electron as a wave, tunnel effect, thermionic and field emission of elec. trons, band theory, impurity levels in semiconductors, junctions, tunnel diode. Principles of semiconductor devices. VLSI process technology. Principles of sensors. Dielectric, piezoelectric, pyroelectric, ferroelectric, optoelectronic, ferrimagnetic and ferromagnetic materials. Superconductive microelectronic devices. (3 lecture hours, 1 laboratory hour a week.)

## 89-432. Modern Steels

An overview of developments in materials, manufacturing processes and applications for modern steels. Classes and classifications of steels, effects of alloy additions and control of microstructure. In-depth studies of high strength low alloy (HSLA), dual-phase, ultra-high strength, stainiess and tool steels. The laboratory is an individual assignment on one type of steel. (3 lecture hours, 1 laboratory hour a week.)

## 89-433. Physical Metallurgical Processes

Application of diffusion theory to diffusioncontrolled processes; solidification principles and application to foundry problems-segregation in castings; heat transfer processes. Selected problems to ilustrate theory. (2 lecture, 2 tutorial hours a week.)

## 89-434. Polymers

The structure, properties, and processing of polymers (plastics) with emphasis on polymer forming processes, including extrusion, injection molding, blowmolding, and thermoforming, including tours of local industry. Fabrication and properties of composites with a polymer base. (3 lecture hours, 1 laboratory hour a week.)

## 8 <br> FACULTY OF HUMAN KINETICS

(Ext. 2429)
OFFICERS OF INSTRUCTION

## KINESIOLOGY

## Professors Emeriti

Moriarty, Richard J.; B.A., M.A. (Assumpfion), M.Ed. (Wayne State), Ph.D. (Ohio Slate)-1956.
Metcalfe, Alan; D.L.C. (Loughborough), B.P.E. (British Columbia), M.S., M.A., Ph.D. (Wisconsin)-1969.
Professors
Salter, Michael A.; D.P.E. (Sydney), B.P.E., M.A. Ph.D. (Alberta)-1972. (Associate Vice-President, Academic and Intemational Affairs)
Boucher, Robert L.; B.Sc. (Mankato State), M.Sc. (lllinois State), Ph.D. (Ohio State)1974. (Head of the Department of Kinesiology)
Marino, G. Wayne; B.A., B.P.E. (McMaster), M.P.E. (Windsor), Ph.D. (Illinois)-1977.

Weese, W. James; B.H.K., M.H.K. (Windsor), Ph. D. (Ohio State)-1986. (Dean, Faculty of Human Kinetics)
Associate Professors
Kimmerle, Marliese; B.A., B.P.H.E., (Queen's), M.A., Ph.D. (Michigan)-1969.
Holman, Margery J.; B.A., B.P.H.E., (Windsor), M.Ed. (Wayne State), Ph.D. (Michigan State)-1970.
Kenno, Kenji A.; B.P.H.E. (Lakehead), M.H.K., (Windsor), Ph.D. (Toledo)-1984.

Paraschak, Victoria A.; B.P.E. (McMaster), M.H.K. (Windsor), Ph.D. (Alberta)-1984.

Corlett, John; B.Sc. (Brock), M.Sc., Ph.D. (Simon Fraser)-1986. (Registrar and Dean of Students and Academic Services)
Weir, Patricia L.; B.H.K., M.H.K (Windsor), Ph.D. (Waterloo)-1991.
Polvin, James R.; B.H.K. (Windsor), M.Sc., Ph.D. (Waterloo)-1997.

Taks, Marijke; B.Sc., M.Sc., Ph.D. (Leu-ven)-2001.

## Assistant Professors

Andrews, David M.; B.P.E., M.Sc. (McMaster), Ph.D. (Waterloo)-2000.
Martyn, Scott G.; B.A., M.A., Ph.D. (Western Ontario)-2000.
Munroe, Krista J.; B.A. (Prince Edward Island), M.A. (Queen's), Ph.D. (Western On-tario)-2001.

## Adjunct Professor

Hoshizaki, Blaine; B.P.E. (Calgary), M.A. (South Alabama), Ph.D. (Illinois)-1996.

## Adjunct Assistant Professor

Mainwaring, Linda T.; B.H.K., M.H.K. (Windsor), Ph.D. (York)-1997.

## DEPARTMENT OF ATHLETICS AND RECREATIONAL SERVICES

## Assistant Professor

MacLean, Joanne; B.P.E., M.P.E. (New Brunswick), Ph.D. (Ohio State)-1985.
(Director of Athletics and Recreational Services)

## Ancillary Academic Staff IV

Fairall, Dennis; B.A., B.Ed. (Western Ontario), M.H.K. (Windsor)-1985.

## Ancillary Academic Staff III

Havey, J. Michael; B.P.E., M.P.E. (Ottawa)1991.

## Ancillary Academic Staff II

Morencie, Michael; B.A. (Windsor)-1998.

## Ancillary Academic Staff I

Risnita, Georgia; B.A. (Windsor)-1999.
Douglas, Marilyn; B.P.A.S. (Regina)-2000.

### 8.1 Programs of Study

The emphasis in the Bachelor of Human Kinetics degree is on providing students with an understanding of human physical activity in its broadest sense, rather than upon the details of professional practice and teaching methodologies.

## 8 FACULTY OF HUMAN KINETICS

A Bachelor of Human Kinetics degree may be earned either through a regular, eightterm program of study, or through the twelve-term Co-operative Education Program, which combines classroom and related work term experiences. In both programs, students follow a common core of Kinesiology and other courses and then specialize in one of two honours Majors: Movement Science or Leisure and Sport Management.

## Areas of Study

Requirements for degree programs in Kinesiology make reference to the following groups of courses:
Bachelor of Human Kinetics "Core" Courses: 95-210, 95-211, 95-220, 95-230, 95-240, 95-250, 95-260, 95-269, 95-270, $95-280$, and $95-285$; plus 55-202 and 60104.

Movement Science Major Courses: 95-301, 95-302, 95-310, 95-333, 95-360, 95-362, 95-365, 95-370, 95-374, 95-380, 95-400, 95-410, 95-453, 95-460, 95-465, 95-471, and 95-480.

Leisure and Sport Management Major Courses: 95-311, 95-320, 95-330, 95-340, 95-345, 95-350, 95-351, 95-405, 95-440, 95-450, 95-451, 95-452, 95-454, 95-473, 95-476, and 95-498.
Practice, Theory, and Analysis Courses: 95381 through 95-398.
Any remaining courses numbered 95 -not included in the groups above are available to students in any Kinesiology major, subject to individual course requirements.
Upon completion of the Human Kinetics "Core" requirements, students will select a major from Movement Science or Leisure and Sport Management. This selection must be done through the Office of the Registrar prior to registration for the fifth semester, or at the end of the fourth semester.
Kinesiology courses at the 300 and 400 levels are restricted to students who have declared their major in either Movement Science or Leisure and Sport Management.
The usual sequence of "Core" courses through the first four academic semesters is:

## FIRST YEAR

95-210, 95-211, 95-230, 95-240, 95-280, 55-202, and 60-104 and three non-Kinesiology options, at least one of which should be a Science.

## SECOND YEAR

95-220, 95-250, 95-260, 95-269, 95-270, 95-285, and four non-Kinesiology options, at least one of which should be a Science.

### 8.1.1 BACHELOR OF HUMAN KINETICS (HONOURS KINESIOLOGY) MOVEMENT SCIENCE MAJOR

Students selecting this major will be interested in entering the general field of science as it relates to human activity as teachers, exercise consultants, sport therapists, athletic trainers, ergonomic specialists in the biomechanics of movement, and human performance specialists in motor development and memory. This program is recognized by the Ontario Kinesiology Association. Those interested in graduate studies in movement science should select this major. Graduates are also qualified to enter a faculty of education.
Total courses: forty.
Major requirements: twenty courses, consisting of the Human Kinetics "Core" and seven non-Kinesiology options, at least one of which must be a Science. In adaition, twelve Movement Science Major courses are required. Eight more courses are to be chosen as follow:
(a) four courses from Science, Engineering, or Psychology;
(b) four courses from Science, Englneering, Psychology, or Human Kinetics (95-).

Of the eight courses in (a) and (b) above, at least six must be at the 200 level or above, and only one of Psychology 46-223, 46-224, $46-225$, or 46-323 is permitted.
8.1.2 BACHELOR OF HUMAN KINETICS (HONOURS KINESIOLOGY) LEISURE AND SPORT MANAGEMENT MAJOR

Sudents completing this major will be interested in examining leisure from a social science perspective and/or preparing for employment opportunities related to the administration of leisure, sport and physical acwity programs. Graduates typically assume positions with government agencies, municipal recreation, units, public and private recreation units, public and private recreation centres, and amateur or professional sports organizations. Graduates also are prepared to enter graduate school or a facuty of education.
Total courses: forty.
Major requirements: twenty courses, consisting of the Human Kinetics "Core", and seven non-Kinesiology options. In addition, twelve additional Leisure and Sport Management Major courses are required. Eight more courses are to be chosen as follow:
(a) four courses from any area of study, including Human Kinetics (95-);
(b) four courses from any area of study, excluding Human Kinetics (95-).

Ot the eight courses in (a) and (b) above, at bast six must be at the 200 level or above,

### 8.1.3 CO-OPERATIVE EDUCATION PROGRAM IN KINESIOLOGY

The Co-operative Education Program is designed for highly motivated students who wish to develop their skills, increase their mowledge, and gain career-related experience. Students must first be admitted to Ki resiology and are eligible to apply then for the twenty-five available co-op openings in the Fall of their first term of study.
The following criteria have been established bevaluate such applications:
1)academic achievement, based upon OAC grades and Fall term marks;
2) previous volunteer and paid work experience;
3) a letter from the student outlining the student's motivation for applying to the Program;
4) two letters of reference;
5) an interview with the student.

Admission decisions will be made in the Winter term of the student's first year of study.
Co-operative Program students must complete the course requirements for one of the two Kinesiology majors and also register during their work experience terms in courses 95-299, 95-399, and 95-499 successively. Each work term will be graded on a Satisfactory/Unsatisfactory basis as the result of a work experience and the work term report which is submitted to and judged by the Co-operative Program Co-ordinator.
A Co-operative Program fee is charged in each term beginning with the Winter term of Year 2. The fee is not a job-placement fee, but is levied to help defer the administrative costs associated with the program.
The work/study sequence is as follows:

## FIRST YEAR

Fall Term: Study term.
Winter Term: Study term.
Summer Term: Off

## SECOND YEAR

Fall Term: Study term.
Winter Term: Work experience.
Summer Term: Study term.

## THIRD YEAR

Fall Term: Work experience.
Winter Term: Study term.
Summer Term: Work experience or optional term.*

## FOURTH YEAR

Fall Term: Study term.
Winter Term: Study term.
Summer Term: Work experience or optional term.*

## FIFTH YEAR

Fall Term: Study term.
'The requirement of a third work term may be fulfilled in the Summer of either the third or fouth year.

### 8.2 Course

 DescriptionsNot all courses listed will necessarily be offered each year.
Kinesiology "Core" courses are restricted to students registered as Kinesiology majors.
Non-Kinesiology majors may be admitted only with the permission of instructor.
All courses are three hours a week ( 3.00 credit hours) unless otherwise indicated.

## $95-210$. Human Performance

An examination of the role perception and cognition play in our ability to sense, attend to, process, and transmit information during the performance of any motor skill. The course will focus on an information processing approach to examine the processes that underlie our ability to perform motor skills.

## 95-211. Principles of Mental Skills Training

This course surveys the psychological principles underlying cognitive techniques that can be used to improve performance and enjoyment in physical activity environments such as sport and exercise. Among the topics to be explored will be critical thinking, goal setting, anxiety control, and attentional focus.

## 95-220. Philosophy of Sport and Physical Activity

An examination of the philosophical basis of sport and physical activity. Students will be-
gin to formulate a personal philosophy of sport and physical activity.

## 95-230. Sociology of Sport and Physical Activities

An examination of the relationship between sport and society from a variety of perspectives. This examination will include the interaction of sport with other societal institutions and with various social determinants.

## $95-240$. Historical Perspectives on Physical Activity and Sport in Western Civilization

This introductory course presents an overview of the significance of physical activity and sport in Western Civilization from ancient Greece to the present by specific reference to selected topics in different eras through which the particular society may be examined. Within this framework, the relationship of physical activity and sport to such factors as economics, politics, and religion will be emphasized, as will its contribution to the culture.
95-250. Principles of Sport Management An introduction and analysis of the effective approaches governing the organization and administration of physical activity and sports programs. Areas of study involve management and programming of physical education and sports programs; finances and budgets; equipment and supplies; planning of indoor and outdoor facilities; time management; and public and human relations.

## 95-260. Physiology of Fitness

An introduction to the physiological systems and the adjustments seen as a result of exercise and exercise training. General topics areas include examination of how aerobic and anaerobic metabolism operate and respond to exercise energy demands, cardiorespiratory responses and adaptations, body composition, and training principles.

## 95-269. Measurement and Evaluation

 An introduction to descriptive and basic inferential statistical techniques with special emphasis on evaluation of data in the various Kinesiology sub-disciplines. (2 lecture, 2 laboratory hours a week.)
## 95-270. Research Design

Apreliminary course to acquaint the student with proper experimental designs and research paper writing. Advanced statistics are offered as analytic techniques are developed. Current research topics will be induded. (Prerequisite: 95-269.) (2 lecture, 2 aboratory hours a week.)

## 95-280. Fundamental Mechanics of Human Motion

Presents the quantitative fundamentals of mechanics as they apply to movements of the human body and the sport implements it pandles.
95-285. Human Growth and Development
Ageneral analysis of the physical, physiobgical, and psycho-motor development of the individual from conception to adolescence. Special emphasis will be placed on identifying age-appropriate physical activitees for children.

## 95-299. Co-op Work Experience I

Firstwork term experience. (Restricted to Kinesiology Co-operative Education students.) (Offered on a Pass/Non-Pass basis.)
95-301. The Use and Abuse of Drugs
Aconcentrated study of the actions and eflects of drugs, with special emphasis on the use, abuse, and/or involvement of drugs in idday's sporting world.

## 95-302. Exercise and Fitness Psychology

An examination of the psychological processes by which healthy and unhealthy beiaviours related to physical activity develop and the methods by which behavioural change can be encouraged. Emphasis will be placed on exercise,nutrition, and injury as lactors in health-related physical fitness.

## 95-310. Motor Learning and Control

Anexamination of the processes which underlie the acquisition and control of goal directed human movement. Emphasis will be placed: 1) the factors that affect learning (feedback, attention, memory) and, 2) the simultaneous integration and coordination of body parts involved in movement execution and control. Laboratory experiences will focus on the application of theoretical prem-
ises to activities of daily living. ( 2 lecture, 2 laboratory hours a week.)

## 95-311. Psychology of Leisure

This course examines the psychological aspects of decisions to begin, persist at, and withdraw from leisure activities of interest to physically active people. Among the topics to be discussed will be fitness and nutritional behaviours, recreational sport, traditional forms of movement such as dance and the martial arts, travel and tourism, and the relationships of all of these to the world of work.

## $95-320$. Ethics in Sport and Physical Activity

A philosophical analysis of sport and physical activity with emphasis on ethical aspects. Ethical theories will be studied as a basis for assessing and understanding decisions and actions of coaches, athletes, officials, and executive members. Case studies covering problem areas will be utilized to enable the student to analyze these decisions and actions.

## 95-330. Social Psychology of Physical Activity

Examines social, motivational, and socialcognitive aspects of physical activity. In particular, initiation and adherence issues will be examined with respect to exercise and leisure. Psychological variables will be discussed with reference to performance in sport. A spectrum of activities ranging from the physical work place to high-performance athletics will be presented.

## 95-333. Applied Sport Psychology

An examination of the processes by which individual and team athletic performance can be enhanced using mental training techniques based on applications of cognitive and social psychology. Emphasis will focus on individual attentional, anxiety and affect management, an team dynamics.

## $95-340$. History of the Modern Olympic Movement

An examination of the historical development of the Modern Olympic Movement. Areas covered include politics, nationalism, gender, commercialism, marketing, and amateurism. The contributions of various athletes and administrators who have

## 8 FACULTY OF HUMAN KINETICS

helped to shape Olympic history will also be assessed.

## 95-345. Sport Marketing

An application of marketing concepts and activities to the sports domain. Topics include product development, promotions, advertising, publicity, pricing, licensing, market segmentation, and research, as well as the development of a marketing plan for a sport/recreation organization.

## 95-350. Organizational Behaviour

An introduction to the social psychological parameters of sport administration. This course will focus upon the integration of de-cision-making, communication, administrative behaviour, motivation, satisfaction, authority, conflict, etc., as each interacts and contributes to improve the effectiveness of the administrative process.

## 95-351. Strategic Planning of Sport Events

A study of the strategies and techniques involved in planning and running various intra-mural-recreational, extramural, and sport events for different environments in the community. Special emphasis will be given to scheduling; pre-event preparation; management of events; program of activities; personnel involved; and structuring tournaments and competitions.

## 95-360. Physiology of Exercise

To examine the biochemical/physiological systems of the body responsible for maintaining optimal utilization/biosynthesis of metabolic intermediates during rest, acute exercise, prolonged exercise, and altitude. Also to examine the interaction of metabolism, ventilation, and kidney function during rest/exercise challenges in particular acidbase balance at sea level and altitude. (2 lecture, 2 laboratory hours a week.)

## $95-362$. Human Factors and Work Performance

This course will introduce students to the effects of human factors on performance in the workplace. Human performance at work will be explored as a function of: information processing; memory and attention; anthropometry and human variability; health and safety; shift scheduling; the design of dis-
plays and controls; and environmental factors including lighting, sound, vibration, and temperature.

## $95-365$. Functional Anatomy

An in-depth study of the human musculoskeletal system. Emphasis will be placed on the components of skeletal, muscular, and nervous systems. Joint articulations will be covered in detail. (2 lecture, 2 laboratory hours a week.)
95-370. Scientific Basis of Conditioning A study of current concepts in conditioning theories and physiological evaluation. included in this course are assessment techniques, program design, and other factors affecting physical performance. (2 lecture, 2 laboratory hours a week.)
95-374. Movement for Young Children Designed to introduce students to movement theories and their application to gymnastics, dance, and games for young children. ( 2 lecture, 2 laboratory hours a week.)

## 95-380. Biomechanics of Human Locomotion

An applied biomechanics course focusing on various aspects of human gait. Particular emphasis will be placed on gait patterns in sport and leisure activities, in the work place, and in activities of daily living. In addition, the course will cover selected topics associated with abnormal gait. (2 lecture, 2 laboratory hours a week.)

Enrolment in Practice, Theory, and Analysis courses (95-381 through 96-398) is restricted to third- and fourth-year Kinesiology majors, with Semester 7 and 8 majors being given preference up to any enrolment limit.)

95-381. Practice, Theory, and Analysis of Urban Outdoor Recreation
Utilizing sociological, historical, and philosophical viewpoints this course examines the concept of wildemess, specifically within an urban setting. Using Essex County as the "urban setting," students will explore the breadth of possible recreation activities available and consider their relevance to a broader understanding of recreation, wilder-
ness, and ourselves. (2 lecture, 2 laboratory hours a week.)

## 95-382. Practice, Theory, and Analysis of Golf

Combining physical and analytical lechniques this course will assist students to understand and execute golf skills, enhance their abilities in error detection and correction, understand strategy and course management, and be aware and appreciative of golf rules and etiquette. (Additional fee applies.) (2 lecture, 2 laboratory hours a week.)
95-383. Practice, Theory, and Analysis of Hockey
Combining physical and analytical techniques this course will assist students to understand and execute hockey skills, enhance their abilities in error detection and correction, and understand and apply the strategies to the offensive, neutral, and detensive zones. (Additional fee applies.) (2 lecture, 2 laboratory hours a week.)
95-384. Practice, Theory, and Analysis of Dance Technique
Acourse in which the teaching of dance skills is combined with the study of underlying principles of human movement that govem skilled dance performance. Emphasis will be placed on physical proficiency, mechanical analysis and progressions in dance skills. Practical laboratory experiences will be given in modern dance and jazz dance echniques. (2 lecture, 2 laboratory hours a week.)

## 95-388. Practice, Theory, and Analysis in Football

The performance of selected football skills with a special emphasis on an applied mechanical analysis. Also involved will be an indepth study of modern offensive and defensive teams and the kicking game. Other areas of study will concentrate on scouting practices and practice planning principles. (2 lecture, 2 laboratory hours a week.)

## 95-391. Practice, Theory, and Analysis of Dance: Sociocultural Study of Dance

A study of the origins, historical development, and function of dance in Western society. Practical laboratory experience will be given in folk, ballroom, and contemporary dance material. (2 lecture, 2 laboratory hours a week.)

## 95-392. Practice, Theory, and Analysis of Basketball

This course combines improvement of individual offensive and defensive skills, application of mental and physical training principles by which basketball performance can be enhanced, rules of the game, and awareness of strategic concepts by which individuals and teams compete. (2 lecture, 2 laboratory hours a week.)

## 95-393. Practice, Theory, and Analysis of Alpine Skiing

The course is an indepth study of the skills required to execute the maneuvers of alpine skiing when using the "Canadian Ski Technique". Special emphasis will be placed on the identification of the critical features of each maneuver for purposes of performance error detection and correction. (Additional fee applies.) (2 lecture, 2 laboratory hours a week.)

## 95-394. Practice, Theory, and Analysis of Volleyball

Combining physical performance and analytical techniques, this course will assist students in the understanding of skill execution for each of the components of volleyball, enhance their ability to identify and correct errors in execution of skills, and apply the skills to the offensive and defensive strategies of the game. ( 2 lecture, 2 laboratory hours a week.)

## 95-395. Practice, Theory, and Analysis of Aquatics

This course introduces students to the main components of aquatics. It will assist them in understanding the basic execution of the various swimming stroke. Students will develop their ability to identify and correct errors in the execution of swimming skills, plus be introduced to the basic aspects of water
safety and lifesaving skills. (2 lecture, 2 laboratory hours a week.)

## 95-397. Practice, Theory, and Analysis of Track and Field

This course introduces students to the science of track and field. They will be introduced to all track and field events and the progressions associated with each event. Students will be expected to illustrate basic movements for each event and analyze skill movements for all track and field events. (2 lecture, 2 laboratory hours a week.)

## 95-398. Practice, Theory, and Analysis of Physical Fitness

This course introduces students to the main components of fitness instruction. Anatomy, exercise physiology, program design, leadership, and safety will be reviewed with direct application to fitness instruction. Students will have the opportunity to develop the ability to apply theoretical information to practical exercise experiences. (2 lecture, 2 laboratory hours a week.)

## 95-399. Co-op Work Experience II

Second work term experience. (Restricted to Kinesiology Co-operative Education students.) (Offered on a Pass/Non-Pass basis.)
$95-400$. Human Movement and Aging An examination of the physiological, sensory, muscular, and cardiorespiratory mechanisms underlying age-related changes in human movement and motor control. These issues will be explored from cellular to whole-body perspectives incorporating current theoretical approaches to aging. Emphasis will be placed on integrating the role of physical activity into explaining age-related changes in cognition and activities of daily living.

## 95-405. Gender Issues in Sport

A comprehensive overview of the status of women in sport with a view towards understanding the influence of gender upon women and men as consumers of sport in North American culture.

## 95-410. Physical Activity for Special Populations

An examination of populations that have special needs in the area of physical activity (sensory, cognitive, musculo-skeletal im-
pairment). Emphasis will be placed on defining the characteristics of the population, the needs and strengths of each population, and matching the strengths with the appropriate physical activities. Issues of integration, programming, and environmental adaptation will also be considered. Laboratory experiences will focus on the application of the theoretical information. (2 lecture, 2 laboratory hours a week.)
95-440. History of Sport in Canada
An examination of the issues and topics related to the historical evolution of sport in Canada. Areas of study include methodology, social class, geography, immigration, native sport, urbanization, industrialization, religion, gender, economics, and government involvement.

## 95-450. Human Resources in Sport Management

An introduction to the tools and systems available for effective decision-making in sport organizations. Topics include sport planning, employee selection and evaluation, time management, compensation, benefits, labour relations, career planning, and problem solving.

## 95-451. Sport and the Law

Introduces students to the principles of law as they relate to Human Kinetics. The principles of law will be related to sport or athletic administration, and to instruction and supervision as it relates to physical and health education and field activities, interscholastic and intercollegiate programs, as well as, other recreational and leisure pursuits.

## 95-452. Sport and Government

An analysis of national and international sport in the context of government involvement at the provincial and national levels.
95-453. Perceptual-Motor Development This course examines perceptual-motor development of infants and children, bringing together theoretical perspectives from psychology, biology, neuroscience, biomechanics, and ethnology. An interdisclplinary perspective is used to study the interaction of developmental processes. The emergence, normal development, and assessment of selected perceptual-motor
skills will be examined in detail. (Prerequisites: 95-210 and 95-285.) (2 lecture, 2 aboratory hours a week.)

## 95-454. Co-operation and Conflict in

 SportGroup interactions in athletics tend toward conflict. An investigation of sport and athletic organizations, their goals, methods of attaining these goals, and obstacles to such achievement. Special emphasis on individual and group interactions.

## 95-460. Cardiovascular Physiology

The study of the cardiovascular system, anatomy, electrophysiology, mechanics, and responses to stressors. (2 lecture, 2 aboratory hours a week.)

## 95-465. Ergonomics and <br> Injury-Prevention

Examination of topics in applied ergonomics as they pertain to reducing the risk of musculoskeletal injuries in the workplace. Students will gain practical experience in applying quantitative and qualitative ergonomic assessment tools. Topics include: the mechanisms of upper limb and low back injunes, the principles of redesigning operafons to reduce injury risk, and techniques for optimizing the feasibility that ergonomic changes will be implemented. Includes experience in an occupational setting. (2 lecture, 2 laboratory hours a week.)

## 95-471. Physiological Basis of Sports Therapy

Aphysiological examination of athletic injures and their therapy. Topics to include the prevention of and pathology of injuries, as well as the care of injuries and rehabilitation lechniques. (Additional laboratory fee applies.) (2 lecture, 2 laboratory hours a week.)

## 85-473. The Social Construction of Leisure

Anexamination of leisure as a social activity which is shaped by various societal institulions and social relations.

## \$5-475. Individual Studies

The student will select an approved topic and under direction investigate and report onit. (Prerequisite: consent of the instructor is required at least three weeks prior to the end of the Fall or Winter term preceding the
term in which enrolment is anticipated.) (Hours to be arranged.)

## 95-476. Principles of Coaching

A critical study of various issues that confront the modern-day coach. Areas of study involve effective coaching techniques; person attributes; motivation and discipline approaches; dealing with problem athletes; and coach-player communication. Stress will be placed upon developing a sound beginning philosophy of coaching, along with looking at the coach as a professional person.

## 95-477. Outdoor Recreation

Through guided discovery and experiential learning, this course provides knowledge about the outdoors as an altemative recreational medium that fosters deeper awareness of nature, wildemess, and ourselves. Offered in the Fall term before the start of classes. (Prerequisite: demonstrated swimming competence.) (Additional fee applies.)

## 95-480. Advanced Biomechanics

Introduces students to advanced concepts and techniques required in quantitative biomechanical analysis. (Prerequisite: 95280.) (2 lecture, 2 laboratory hours a week.)

## 95-490. Special Topics

Courses in which current topics associated with human kinetics are examined.

## 95-498. Sport Management Internship

A supervised, project-driven field work experience in an approved sport management work setting. The experience will be designed to provide students with an enriched leaming opportunity to integrate sport management theory and practice. (Restricted to fourth-year sport management majors.) (Offered on a Pass/Non-Pass basis.) (Prerequisite: consent of the instructor is required at least three weeks prior to the end of the Fall or Winter term preceding the term in which enrolment is anticipated.) (9 hours a week.)

## 95-499. Co-op Work Experience III

Third work term experience. (Restricted to Kinesiology Co-operative Education students.) (Offered on a Pass/Non-Pass basis.)

## 9 FACULTY OF LAW

(Ext. 2930)

## Dean

Bruce P. Elman; B.Sc.(McGill), LL.B.
(Dalhousie), LL.M. (Harvard)

## (Interim) Associate Dean

Mazer, Brian M.; B.A., LL.B. (Saskatchewan), LL.M. (Alberta), of Osgoode Hall, Bar-rister-at-Law-1977.

## OFFICERS OF INSTRUCTION

## Honorary Professors

Zuber, Thomas; B.A. (Assumption), D.C.L. (honoris causa) (Windsor). Mr. Justice Zuber served as a member of Faculty prior to entering his judicial career.

## Professors Emeriti

Whiteside, John W.; Q.C., L.S.M.; B.A. (Assumption)(Osgoode), LL.B., of Osgoode Hall, Barrister-at-Law-1970.
Manzig, John G.W.; LL.B., LL.M. (Dalhousie), Lic. Jur., Dr. jur. (Cologne), of Osgoode Hall, Barrister-at-Law, also of the Bar of Nova Scotia-1970.
Marasinghe, M. Lakshman; LL.B., LL.M. (University College, London), Ph.D. (The School of Oriental and African Studies, London), LL.D. (Honoris Causa) (University of Columbo), of the Inner Temple, England, Barrister-at-Law, and Attomey-at-Law of the Supreme Court of Sri Lanka. Professor Laksham is also an Adjunct Professor of Law, University of New South Wales, Sydney, Australia-1970.

## Professors

Stewart, George R.; B.A. (Carleton), LL.B. (Ottawa), LL.M. (L.S.E., London), of Osgoode Hall, Barrister-at-Law-1970.
Menezes, Julio R.; LL.B. (Tanzania), LL.M. (Yale), of Osgoode Hall, Barrister-at-Law1973.

Bushnell, lan. S.; B.S.A. (Toronto), LL.B. (Dalhousie), LL.M. (York), of Osgoode Hall, Barrister-at-Law-1975.

Wydrzynski, Christopher J.; B.A., LL.B. (Windsor), LLM. (Osgoode), of Osgoode Hall, Barrister-at-Law-1975.
Wilson, Larry C.; LL.B. (Saskatchewan), LL.M. (Manitoba), of Osgoode Hall, Barris-ter-at-Law,-1976.

Murphy, Paul T.; B.A., LL.B. (Windsor), M.Sc.L.S., M.Ur.PI. (Wayne State), of Osgoode Hall, Barrister-at-Law-1976. (Law Librarian)
Conklin, William E.; B.A. (Hons.) (Toronto), M.Sc. (L.S.E., London), LL.B. (Toronto), LL.M. (Columbia), Ph.D. (York), of Osgoode Hall, Barrister-at-Law-1977.
Mazer, Brian M.; B.A., LL.B. (Saskatchewan), LL.M. (Alberta), of Osgoode Hall, Bar-rister-at-Law-1977. (Interim Associate Dean of the Faculty of Law)
Bogart, William A.; B.A., LL.B. (Toronto), LL.M. (Harvard), of Osgoode Hall, Barister-at-Law-1980.
Carasco, Emily F.; LL.B. (Makerere University), LL.M., S.J.D. (Harvard)-1980.
Irish, Maureen F.; B.A., LL.B. (Toronto), LL.M., D.C.L. (McGill), of Osgoode Hall, Bar-rister-at-Law-1980.
Berryman, Jeffrey; LL.B. (Hons.), M. Jur. (Auckland, N.Z.), LL.M. (Dalhousie), of Osgoode Hall, Barrister-at-Law. Also Barrister and Solicitor of the High Court of New Zea-land-1981. Gold, Neil; B.A. (York), LL.B. (Toronto), LL.M. (York), of Osgoode Hall, Barrister-at-Law, also of the Bar of British Columbia-1985. (Vice-President, Academic of the University)
West, J. Leigh; L.S.M., B.A. (Queen's), LL.B. (McGill), M.Sc. (lowa State), LL.M. (Wayne State), of Osgoode Hall, Barrister-at-Law1986.

Moon, Richard J.; B.A. (Trent), LL.B. (Queen's), B.C.L. (Oxford), of Osgoode Hall, Barrister-at-Law-1987.
Etherington, Brian D.; B.A. (Hons.) (McMaster), B.Ed. (Queen's), LL.B. (Queen's), LL.M. (Yale), of Osgoode Hall, Barristerat-Law-1987.

Eman, Bruce P; B.Sc. (McGill), LL.B. (Dalhousie), LL.M. (Harvard) -2000. (Dean of the Faculty of Law)

## Associate Professors

James, D. Charles; B.A. (Law) (Hons)(Southampton), LL.B. (Hons)(Cambridge), of Osgoode Hall, Barrister-at-Law1977. (Secretary and General Counsel to the University)
Weir, John P.; B.Comm. (Hons.) (McMaster), LL.B. (Queen's), LL.M. (York), of Osgoode Hall, Barrister-at-Law-1983.
Eansor, Donna M.; LL.B. (Windsor), LL.M. (Wayne State), of Osgoode Hall, Barrister-alLaw-1989.
Tawfik, Myra J.; B.A., LL.B., B.C.L. (McGill), LL.M. (Queen Mary College, University of London), of Osgoode Hall, Barrister-at-Law, Member of the Bar of Quebec-1991.
Valiante, Marcia A.; B.Sc., B.A. (New Hampshire), LL.B. (Osgoode), LL.M. (Queen's), of Osgoode Hall, Barrister-at-Law-1992.
Rotman, Leonard I.;B.A. (Toronto), LL.B. (Queen's), LL.M. (York), S.J.D. (Toronto), of Osgoode Hall, Barrister-at-Law-1998.

## Assistant Professors

Kuras, Ruth O.; B.Sc. (McMaster), B.A., LL.B. (Windsor), LL.M. (Wayne State), of Osgoode Hall, Barrister-at-Law-1999.
Schulz, Jennifer L.; B.A., LL.B. (Manitoba), M. Phil. (Cambridge), of Osgoode Hall, Bar-rister-at-Law-1999.
Howard, J. Paul R.; B.A., LL.B. (Toronto), UL.M. (York)-2000.
Ocheje, Paul D.; LL.B. (Ahmado Bello), LL.M. (Benin), LL.M. (Osgoode), D. Jur. (Osgoode). Barrister and Solicitor of the Supreme Court of Nigeria -2000.
Legal Research and Writing Instructors
Hunter, Kathryn; B.A. (Toronto), M.A. (Mcmaster), B.H.J. (Regina), LL.B. (Windsor), LL.M. (Edinburgh), of Osgoode Hall, Barrister-at-Law.
McCarney, Moira; B.A. (Carleton), M.Ed. (Queen's), LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law.

## Law Library Staff

Murphy, Paul T.; B.A., LL.B. (Windsor), M.S.L.S., M.U.P. (Wayne State), of Osgoode Hall, Barrister-at-Law. (Law Librarian)
Brett, Laurie; B.A., M.A. (Ottawa), M.L.I.S. (Western Ontario), LL.B. (Windsor), of Osgoode hall, Barrister-at-Law (Reference and Computer Services Librarian)
Adjunct Professors
Nosanchuk, Justice Saul, Ontario Court of Justice; B.A. (Assumption), LL.B (Osgoode). (Special Lecturer in Criminal Procedure and Criminal Sanctions)
Phillips, Justice Douglas, W., Ontario Court of Justice ; B.A. (Western Ontario), LL.B. (Windsor).(Special Lecturer in Family Law, Child Protection, Custody and Adoption, and Civil Trial Advocacy)

## Special Lecturers

Aikman-Springer, Judith; B.A., LL.B. (University of the West Indies), of OsgoodeHall, Barrister-at-Law. (Special Lecturer in Clinical Advocacy)
Bondy, Christopher; B.A., LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Intemational Business Transactions)
Campbell, Gregory; LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Civil Trial Advocacy)
Colautti, Raymond G.; LL.B. (Windsor), Bar-rister-at-Law. (Special Lecturer in Civil Trial Advocacy)
Ducharme, Patrick; B.A., LL.B. (Windsor), of Osgoode Hall, Barrister-at Law. (Special Lecturer in Criminal Advocacy and Criminal Procedure)
Foulds, David S.; B.A., B.P.H.E. (Queen's), LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Criminal Law)
Gallant, Carrie: LL.B. (Queen's), Director of Intems, Osler, Hoskin \& Harcourt LLP Conflict Resolution Program. (Special Lecturer in Mediation Clinic)
Gold, Marlene; B.A., LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Legal Profession)

Gold, Mary; M.A. (Windsor), M.A. (Wayne State), J.D. (Detroit), Member of the Michigan Bar and Associate Professor. Cross-appointment with Communication Studies, University of Windsor. (Special Lecturer in Contracts, Property and Regulated Industries)
Goldstein, William; B.A., LL.B. (Windsor) of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Civil Trial Advocacy).
Harrison, Denis; B.A. (Western Ontario), LL.B (Toronto), Barrister-at-Law. (Special Lecturer in Criminal Law)
Henshaw, Cheryl; B.Sc. (Toronto), LL.B. (Western Ontario), of Osgoode Hall, Barris-ter-at-Law. (Special Lecturer in Civil Trial Advocacy).
MacOdrum, Donald H.; B.A. (Queen's), LL.B. (Toronto), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Patent Law)
Manoochehri, David; B.A. (Waterloo), LL.B., M.B.A. (Windsor), LL.M. (Toronto), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Advanced Taxation)
Nolan, Master Mary Jo; B.A. (Toronto), M.S.W. (Ottawa), LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law, Master of the Ontario Superior Court of Justice. (Special Lecturer in Civil Trial Advocacy)
Pawley, Howard; B.A. (Winnipeg), LL.B. (Manitoba), LL.D. (Windsor), Q.C. (Special Lecturer in Canadian Federalism)
Posliff, Edward J.; B.A. (Windsor), LL.B. (York), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in civil Trial Advocacy).
Rose, Stephen; B.Comm. (Dalhousie), LL.B. (York), of Osgoode Hall, Barrister-atLaw. (Special Lecturer in Corporate Finance)
Sterling, Lori; B.A. (Hons) (Queen's), LL.B. (Toronto), LL.M. (Cambridge), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Constitutional Litigation)
Stitt, Allan; B.Comm. (Toronto), LL. B. (Windsor), J.D. (Detroit-Mercy), LL.M. (Harvard), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Altemate Dispute Resolution)

Voyvodic, Rose; LL.B. (Windsor), LL.M. (Ottawa), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Clinical Advocacy) (Human Rights Commissioner of the University and L.A.W. Director)
Wells, Peter; B.Sc., LL.B.(Queen's), of Os. gode Hall, Barrister-at-Law. ( Special Lecturer in PatentLaw).
Whitmore, Elinore; B.A.(Queen's), LL.B.; LL.M.(York), of Osgoode Hall, Barrister-atLaw. (Special Lecturer in Alternate Dispule Resolution).
Wilkki, George A.; B.A.Sc., LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Real Estate Transactions)
Wong, Gerri; B.A. (McGill), LL.B. (Windsor), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Civil Trial Advocacy).
Yaworsky, James; B.A., LL.B. (Toronto), of Osgoode Hall, Barrister-at-Law. (Special Lecturer in Landlord/Tenant)

### 9.1 General <br> Information

The Faculty of Law of the University of Windsor was established in 1967, and the first entering class was admitted in September, 1968. Mark R. MacGuigan was its first dean, succeeded by Walter Tarnopolsky, John McLaren, Ron Ianni, Julio Menezes, Neil Gold, Jeff Berryman, Juanita Westmore-land-Traoré and Brian Mazer, each of whom left their personal mark on the Faculty, contributing to the development of a responsive curriculum and meaningful scholarship. ON the $1^{\text {st }}$ of July, 2000, Bruce P. Elman was appointed Dean of Law. The Faculty's commitment to community service has created a unique, socially responsive, and responsible institution dedicated to learning. The Facuty has adopted two institutional themes: Access to Justice and Canada-US Legal lssues.
The Ron W. lanni Faculty of Law building at Sunset Avenue and University Avenue, was opened by then Governor General Roland Michener in 1970, and contains lecture thea-
tres, class and seminar rooms, faculty offices, and facilities which house the 313,565 volumes of The Paul Martin Law Library, the Windsor Yearbook of Access to Justice, a vaniety of student organizations, the Legal Profession Research Program, the Canadian-American Reasearch Centre for Law and Policy, the University of Windsor Mediation Services and the student-run Windsor Review of Legal and Social Issues.

The student body has grown from thirty to four hundred and forty since 1968, with a Faculty of twenty-one to twenty-five scholarleachers.
At Windsor, law is viewed as a process aimed at the achievement of social ends and justice. Education in the law assists students to understand how legally educated and trained persons may gainfully contribute to the creation and maintenance of the best possible social order.
The Law Faculty has developed a varied, yet purposive program of study in which law is seen as part of complex and dynamic social processes: law touches all aspects of human endeavour and is, in turn, fashioned by i. Law's connection with the humanities and social sciences is inescapable both in study and in action. Critical theory, social science research methods, and sound intellectual analysis combine to inform the student of law about underlying, fundamental values and beliefs. The resources and insights of the humanities and social sciences permit our students an opportunity to understand thatlaw study is inextricably related to social, political, practical, and theoretical issues. In large measure, law is about getting things done; it is practical in its orientation. At Windsor, theory and practice are not polar extremes along a continuum which separate the practitioner from the academic; practice is seen as the implementation of theory and theory as the positing of, among other things, action.
Recognizing that the discipline of law is complex, our aim is to assist students to acquire intellectual skills and habits of mind suited to law practice and a myriad other careers. They are asked to reflect critically upon the
legal system, the legal profession, and the law itself. In doing so, they challenge the assumptions which underlie the status quo and propose options which might better serve the public interest. Since law is tied to all aspects of human relations, law study can and must focus beyond legal doctrine.
Because the environment of the law is rich, supported by community projects, scholarly endeavour, and personal interests, those who participate in its program may pursue a directed, yet personally oriented path for personal and professional development.
The Faculty recognizes the need to be responsive to the challenges of the future and remains flexible about scholarly and curricular endeavour. Its commitment to serve the public need is firm. We at Windsor are proud of our accomplishments in our first thirty years. But we will never rest on our achievements, rather we will build upon them.

## The Paul Martin Law Library

The Paul Martin Law Library, with its collection of over 319,165 volumes (including a large microform collection and an audio and video-tape collection), satisfies all student research needs encountered in the study of Canadian law. A rich source of materials is also available for historical and comparative law purposes, dealing with the law of other common law countries, as well as some aspects of select civilian and socialist legal systems.
In addition to exhaustive coverage of Canadian primary legal materials, the library includes good collections of material from Great Britain, certain Commonwealth countries, and the United States. The library's collection of secondary materials, which is drawn largely from the legal literature of the same countries, is also very good.
Use of the $\mathrm{Q} /$ L Canadian legal database system is taught by Law Library staff.In addition, training in other computer systems is available: Lexis/Nexis, Westlaw, the Teranet system for Ontario land registration, and other smaller systems, as well as a collection of legal CD-ROM resources.

A well-qualified library staff maintains a program to develop and assist in utilizing this strong, well-balanced collection.
In addition to the facilities of the Paul Martin Law Library, students and faculty have easy access to the Leddy Library of the University of Windsor, with its collection of approximately one and a half million volumes and, in connection with certain courses of study, to other more specialized libraries both in Windsor and Detroit.

### 9.2 Admissions Policy

For information concerning the current admissions policy and procedures of the Faculty of Law, contact:

Applicant Services (Law Division)
University of Windsor
Windsor, Ontario
N9B 3P4
Phone: 519-253-3000 Ext 6459, 6460, 6461 or 6462
Fax: 519-971-3653
Email: lawadmit@uwindsor.ca

### 9.3 Programs of Study

### 9.3.1 BACHELOR OF LAWS (LL.B)

The program leading to the degree of Bachelor of Laws (LL.B.) requires full-time attendance for three years, or part-time attendance for six years.
The first year consists of a core of mandatory courses in all of the fundamental areas, problems, and principles of the law, with somewhat more stress upon public law and perspective courses than upon the traditional, first-year law curriculum.
The second and third years allow some variation in course work and research, while including certain common program requirements.
Details of the program, its regulations, and course descriptions are outlined in the separate Faculty of Law Calendar, which may be obtained from the Law Admissions Office.

### 9.3.2 M.B.A./LL.B PROGRAM

This program is designed to enable a student to obtain both an M.B.A. and an LL.B. within four years. Successful applicants will pursue first-year studies separately in the Odette School of Business Administration and the Faculty of Law. Years III and IV of the Integrated Program will involve work in both faculties.
Prospective Integrated program students must gain admission independently to both Faculties; the GMAT and LSAT are both required. To facilitate program planning, interested students are urged to seek admission to both faculties simultaneously. Candidates are approved by the Committee of Directors of the program; those admitted are granted a Deferred Admission to the faculty whose first-year studies are to be pursued in the second year of the program.
Applicants seeking to enter the Integrated Program should so signify in the space designated on the application for admission, and return the Application Form for Law before November 1st and the Application Form for the M.B.A. before May 1st. Such students should also make simultaneous application to the Odette School of Business Administration.

### 9.3.3 J.D./LL.B. PROGRAM

The J.D./LL.B. Program is a demanding program of study designed to: educate students to understand the legal doctrines and cultures of both Canada and the United States; help students successfully pass the bar examinations in either country; enable its graduates to practise law in a manner consonant with the highest standards of competence, professional ethics, and concerns for justice as exemplified by the traditions of the legal profession in both countries.
The program requires a student to successfully complete 60 credit hours of course work at the University of Detroit Mercy and 44 credit hours of course work at the University of Windsor. Most mandatory courses require
the student to study both U.S. and Canadian law relevant to the subject area.
This program is designed to enable a student to obtain an American Bar Associationapproved Doctor of Jurisprudence (J.D.) Degree from the University of Detroit Mercy and the nationally recognized Bachelor of Laws (LL.B.) Degree from the University of Windsor within three calendar years.

### 9.3.4 INTELLECTUAL PROPERTY LAW PROGRAM

The Intellectual Property Law Institute (I.P.L.I.) was created in 1987 through the efforts of the State Bar of Michigan and the law faculties of The University of Detroit Mercy, Wayne State University, and the University of Windsor.
Intellectual property is one of the most innovative, exciting, challenging, and rewarding areas of the law. The I.P.L.I. is dedicated to providing basic and advanced legal education and furthering knowiedge, scholarship, and research in the law governing the richly diverse fields of intellectual property: patents, copyrights, trademarks, trade secrets and know-how, computers and related technology, communications and media entertainment, technology transfer, trade regulation, and the arts.
The primary purpose of the I.P.L.I. is to offer an exceptional and rich curriculum for students and lawyers in the field of intellectual property. I.P.L.I. courses have the advantage of sharing the resources of three law schools, as well as the experience and expertise of practising members of the Michigan Bar Association. In particular, each course deals with appropriate American and Canadian jurisprudence.

### 9.4 Law Awards and Financial Aid

Numerous awards are available to students entering the Faculty of Law and in-course. The Faculty of Law awards program is administered by the Office of Student Awards
under the guidance of the Senate Committee on Student Awards.
For complete details regarding procedures and regulations, as well as descriptions of individual awards, see "Awards and Financial Aid," section 7 below.

### 9.5 Special Lectures

## The Access to Justice Lecture Series

Each year a leading scholar is invited to deliver an original lecture on the theme of "Access to Justice". The lecturer then reworks his or her paper for the purpose of publication in the Windsor Yearbook of Access to Justice.

## The George M. Duck Lecture Series

A trust fund was established by a donation in memory of George M. Duck in order to institute an annual series of public lectures on the theme "Law in a Changing Society". Annually an eminent scholar will be invited to present the Lecture.

## Bernard Cohn Memorial Lecture in Criminal Law

A trust has been established by the friends and family of Bemard Cohn, Q.C. to institute an annual series of public lectures on the theme of Criminal Law and Procedure. Each year an eminent judge, practitioner or scholar will be invited to present the lectures.

## Windsor/Wayne Law Forum

The Faculties of Law from the University of Windsor and Wayne State University in Michigan hold an annual lecture series known as the Windsor/Wayne Law Forum. Two professors, one from each institution, examine a given topic from a Canadian and an American perspective. The public is invited to attend these forums. Some of the topics in the series have been "The Role of the Judiciary in a Democratic Society," "Unions, Employees and the Concept of Fair Representation", and "An Introduction to and a Few Perspectives on the Canadian Charter of Rights and Freedoms".

## Paul Martin Professorship in International Law

The Paul Martin Endowed Professorship was named for the Hon. Paul Martin, who represented the Windsor area for over thirtythree years, earning distinction in international affairs. The professorship was funded by corporate, private, and govemment contributions to a campaign launched at the University of Windsor in 1982. The inaugural professor was Secretary-General of the Commonwealth, Sir Shridath Ramphal, follwed by Professor Edward McWhinney, then of Simon Fraser University. The 1990 holder was The Hon. Gough Whitlam, former Prime Minister of Australia. In July, 1993, the Hon. Howard Pawley, P.C., Q.C., LL.D., former Premier of Manitoba, began a five-year term as holder of the Chair. Dr. Alice Erh-Soon Tay, Challis Professor of Jurisprudence at the University of Sydney, Australia, and President, Human Rights and Equal Opportunity Commission, was the Paul Martin Professor in 1999.

### 9.6 Law Service Courses

The Law Faculty offers a number of courses which are available for credit toward university degrees and diplomas other than the full-time LL.B. degree. These courses cannot presently be counted as credit for the LL.B. degree because of Law Society Regulations governing qualification for call to the Ontario Bar.

## 99-110. Introduction to Law 1-Legal Process in Canada

An introduction to the legal system in Canada including the sources of Canadian law, the general concepts of constitutional and administrative law, the court structure in Canada, and the place of the law and the courts in the community.

## 99-200. Law and Social Issues

A process-oriented course dealing with a number of current issues such as abortion, obscenity, civil disobedience, hate propaganda, and the protection of privacy.

## 99-210. Administrative Law

A study of delegated legislation, the administrative process, and the methods by which courts control the exercise of discretion by administrative agencies.

## 99-211. Labour Law

A study of the system of collective bargaining in Ontario including the establishment of the collective bargaining relationship, negotiating and enforcing the terms of a collective agreement, arbitration, resort to economic pressure, and special legislation dealing with police, teachers, and government employees.

## 99-212. Municipal Law

The course is designed for students of local government and public officials and others who wish to deepen their knowledge of the legal powers of municipal govemment and its local boards and commissions. The lectures and discussions with panels of guests will set out the legal and procedural principles of municipal law and attempt to illustrate their application in the everyday life of municipal government.

## 99-213. Land Use Planning Law

An introduction to the legal principles and rules goveming the planning process in On tario; the course will examine the Planning Actand other related statutes and their interpretation by the courts and will focus on substantive and procedural aspects of the law governing the operation of planning boards, committees of adjustment, land division committees, and municipal councils in the exercise of their planning powers and the function of the respective ministers and the Ontario Municipal Board in the planning process.

## 99-214. Consumer Law

The consumer has a variety of rights which arise from the contracts made with traders, repairers, travel agents, hotels, etc., and a study of these rights will form the core of the course. In addition, we shall examine what the consumer can do about misleading advertising, referral sales, and door-to-door sales. Finally the course will cover the various court and other procedures which the consumer may have to use to resolve com-
plaints about defective goods or incompetent services.

## 99-215. Administration of Crimine Justice

This course seeks to provide the student with a basic understanding of some of the fundamental principles of Canadian criminal law and of selected features of the administration of criminal justice in Canada. Topics such as the history and background of the criminal law, the basis of criminal liability, the criminal courts, discretion in the criminal process, and penal policy will be discussed.

## 99-216. Labour Arbitration

This seminar will focus upon the process of dispute settlement under collective agreements via grievance and arbitration procedures. The nature and scope of the collective bargaining agreement will be examined and consideration will be given to the respective roles of the arbitrator and the court in the development of a problem-solving jurisprudence for disputes arising out of the interpretation and application of collective agreements. Pre-arbitration procedures, resources for arbitral decision-making, arbitration procedure, judidal review of arbitration awards, post-arbitration procedures, and selected issues in grievance determination, such as discipline, discharge, seniority, work assignment, job evaluation, sub-contracting, and technological change, will be among topics studied.

## 99-217. Criminology

The course will focus upon "penology" or "corrections", rather than the etiology of crime. It will consist of a series of seminars prepared and presented by students working either individually or in teams. Topics will include: principles of sentencing; punishment as a deterrent; prevention detention; prisons and jails; parole, probation, and "half-way houses"; special facilities for female offenders, young offenders, and oflenders requiring psychiatric treatment.

## 10 FACULTY OF NuRSiNG

## (Ext. 2258.97d 2259)

Dean
Sheila Dresen; B.A. (Manitoba), B.S.N. (Toronto), M.S., M.Sc.N. (Wisconsin), Ph.D. (Illinois), Reg.N.

## OFFICERS OF INSTRUCTION

## Professors Emeritae

Gupta, Anna; B.Sc.N., M.Sc.N. (Wayne State), Reg.N.-1968.

Purushotham, Devamma; B.N.Sc. (Queen's), M.Sc. (McGill), Ed.D. (Wayne State), Reg.N.-1974.
Rosenbaum, Janet N.; B.Sc.N., M.Sc.N., Ph.D., (Wayne State), Reg.N.-1975.

## University Professor

Cameron, W. Sheila; R.S.C.N. (Scotland), B.A. (McMaster), M.A. Nurs. Educ. (Detroit), Ed.D. (Wayne State), F.A.A.M.R., Reg.N.1976.

## Professors

Thomas, Barbara Campbell; Dip.P.H.N., B.N.Sc. (Queen's), M.Ed. (Windsor), Ed.D. (Wayne State), Reg.N.-1969.
Carty, Laurie; B.Sc.N., B.A., M.Ed. (Windsor), Ph.D. (Wayne State), Reg.N.-1980.

## Associate Professors

Temple, Anna; B.Sc.N. (Windsor), M.Sc.N., Ph.D. (Wayne State), Reg.N.-1971.
Abraham, Puthenvilla Y; B.Sc.N. (Alberta), B. Com. (Windsor), M.P.H., Specialist In Aging Cert., M.S. (Com. Hith. Nsg.) Ph.D. (Michigan), Reg.N.-1971.
Foley, Donna M.; Dip. N. Educ., B.Sc.N., B.A., M.A. (Windsor), Ph.D. (Ottawa), Reg.N.-1972.
Fawdry, Mary Kaye; B.Sc.N. (Windsor), B.A., M.Ed., Ed.D. (Wayne State), Reg.N.1973.

McMahon, Sharon; B.Sc.N., B.A., M.Ed. (Windsor), Ed.D. (Wayne State), Reg.N.1973.

Matuk, Lucia, B.Sc. (Toronto),
B. A.,(Windsor), M.Sc.N. (W

Reg.N.-1987.
Rajacich, Dale; B.Sc.N. (Wink
(Western Ontario), Reg. N. -19:
Snowdon, Anne; B.Sc.N. (Westem Ontariu), M.Sc. (McGill), Ph.D. (Michigan), Reg.N.1988.

Kane, Deborah; B.Sc.N. (Windsor), M.Sc.N. (Western Ontario), Reg.N.-1989.
Stamler, Lynnette Leeseberg; B.S.N. (St. Olaf College), M.Ed. (Manitoba), Ph.D. (Cincinnati), Reg.N.-1994.
Hernandez, Cheri; B.Sc.N., B.A., M.Ed. (Windsor), Ph.D. (Toronto), Ph.D. (Case Western Reserve), Reg.N.-1997.
Dresen, Sheila; B.A. (Manitoba), B.S.N. (Toronto), M.S., M.Sc.N. (Wisconsin), Ph.D. (Illinois), Reg.N.-2000. (Dean of the Faculty of Nursing)

## Assistant Professors

Fox, Susan M.; B.N. (Memorial), M.Sc.N. (Western Ontario), Reg.N.-1999.
Leipert, Beverly; B.A., B.Sc.N., M.Sc.N. (Saskatchewan), Reg.N.-2001.
Patrick, Linda; B.Sc.N., M.A. (Central Michigan), M.Sc. (Windsor), Reg.N.-2001.
Thrasher, Christine; B.Sc.N., B.A. (Windsor), M.Sc.N. (D' Youville), Primary Care Nurse Practitioner Certificate (Ryerson), Reg.N.-2001.
Williamson, Karen; B.Sc.N (Toronto), Management of Health Care Professionals Diploma (O.H.A.), Acute Coronary Care Diploma (Humber), M.S.N (Toronto), Reg.N.-2001.

## Adjunct Professors

Horsburgh, M. Elizabeth; B.Sc.N., B.A., M.Ed. (Windsor), M.Sc.N., Ph.D. (Wayne State), Reg.N.-1984.
Simpson, Mary Anne; B.Sc.N, M.Sc. (Windsor).

## Adjunct Associate Professors

Drake, Mary Louise; Dip. P.H.N., B.Sc.N., B.A. (Windsor), Dip. in Midwifery (Great Britain), M.A. Nurs. Educ. (Detroit), Ed. D. (Wayne State), Reg.N.-1975.

## 2 "unct Assistant Professors

7. E. Merilyn; D.P.H.N. (Western 0), B.A., B.SC.N. (Windsor), N (Western Ontario), Reg.N.69.

Davies, Shirley; B.Sc.N., M.Sc.N. (Toronto), Reg.N.-1989.
Groh, Eleanor; B.Sc.N. (Windsor), M.Sc.A. Public Admin.(Central Michigan), Reg.N.
Pickard, Jane; B.A., M.Ed. (Western Ontario), M.N. (Alberta), Reg.N.-1990.
Wiseman, Lee Ann; B.Sc.N. (Toronto), M.Sc.N. (Wayne), Reg.N.-1990.

Freeman, Michelle; B.A., B.Sc.N. (Windsor), M. S.N., Graduate Certificate, Gerontology (Wayne State), Reg.N.-1995.
Edmunds, Kathryn A.; B.A. (Windsor), BN (Manitoba), M.Sc.N. (Wayne State), Reg.N. 1996.

Haugh, Elizabeth B.; B.A., B.Sc.N. (Windsor), M.Sc.N. (Western Ontario), Reg.N. 1996.

Morency, Susan; B.Sc.N., (Windsor), M.Sc.N. (Wayne State), Reg.N.-1996

Warkentin, Tammy; B.Sc.N., M.Sc.N. (Western Ontario), Reg.N.-1996.
Zack, Elizabeth J.; B.Sc.N. (Windsor), M.S.N., Graduate Certificate, Gerontology, N.P. (Wayne State), Reg.N.-1996.

Choudhry, Ushi; B.Sc.N. (Delhi), M.Sc.N. (Western Ontario), M.Ed. (Queen's), Ph.D. (Toronto), Reg.N.-1998.
Kozell, Kathryn M.; B.A. (Western Ontario), B.Sc.N. (Windsor), M.Sc.N. (Western Ontario), N.P. (Toronto), Certificate in Enterstomal Therapy, Reg.N.-1999.

## Sessional Lecturers

M. Chick, B.Sc.N., M.Sc., Reg.N
M. Cole, D.P.H.N., B.A., B.Sc.N., M.Sc.N., Reg.N.
D. Dayus, B.Sc.N., B.A., M.Sc., Reg.N.
M. Foster, B.Sc.N., Reg.N.
K. Foley, B.Sc.N., M.Sc., Reg.N.
D. Hreceniuk, B.Sc.N., C.P.M.H.N.(C.), Reg.N.
P. McKay, B.Sc.N., M.Sc., Reg.N.

## Major Clinical Resources

(Include but are not limited to) Canadian Mental Health Association Cencourse Project Inc. Chatham-Kent Health Unit Chateau Park Nursing Home Childrens' Hospital of Michigan and Ambulatory Care Center, Detroit Medical Centre
Community Care Access Centre Centres for Seniors Windsor Greater Essex County District School Board
Heart and Stroke Foundation of Ontario, Windsor-Essex County Henry Ford Hospital System Hospice of Windsor Hotel-Dieu Grace Hospital House of Shalom Youth Centre Huron Lodge (Home for Seniors) Hutzel Hospital, Detroit, Michigan Leamington Mennonite Home Maryvale Adolescent and Family Services Ontario Breast Screening Program Saint John Hospital, Detroit, Michigan The Salvation Army Windsor Community Rehabilitation Centre Sandwich Community Health Centre Inc. Teen Health Centre - Windsor Victorian Order of Nurses, Windsor-Essex County Branch Windsor-Essex County Health Unit Windsor Regional Hospital
Windsor Women Working with Immigrant Women

### 10.1 Foreword

## Mission Statement

The mission of the University of Windsor baccalaureate nursing programs, in collaboration with its partners, St. Clair College and Lambton College, is to prepare graduates who will practice in partnership with clients, lamilies, communities, groups, and service providers to facilitate the promotion, achievement, and maintenance of optimal levels of health.

The scope of the program includes teaching scientifically-based nursing practice using theory, clinical skills, and research findings in the care of individuals, families, groups, and communities. In recognition of the evolving nature of the global community and changing health care systems, critical thinking and creative problem solving are emphasized through the use of professional skills such as: communication, caring, problem solving, decision making, teaching,leaming, management, and change.
Students have opportunities to provide leadership within nursing while practising in a variety of Canadian and international health care facilities and community settings, both traditional and non-traditional. The School fosters personal and professional development and ethical accountability, preparing nurses for changing and expanding roles.

## Philosophy

The philosophy of the Faculty of Nursing at the University of Windsor is outlined in the following statements about our beliefs relative to health, individuals, nursing, leaming, teaching, and environments:

## HEALTH

Health is a dynamic process whereby the individual, family, or group is able to realize aspirations, satisfy needs, and change or cope with the environment. Health is a resource for everyday life. It is a positive concept emphasizing social and personal resources as well as physical capacity. Health is the goal of all nursing behaviours.

## INDIVIDUALS

Individuals are unique holistic persons with inherent dignity and are worthy of respect and care. Individuals have freedom of choice and are accountable for these choices. Individuals are capable of entering reciprocal caring relationships which foster health, growth, and self-actualization.

## NURSING

Nursing is a humanistic, caring process, the goal of which is to help individuals, families, groups, and communities achieve and maintain an optimal level of health consistent with their abilities and desires. Nurses, in collabo-
ration with members of the health team and other service providers build on strengths and address health variations to facilitate client maturation and adaptation.

## LEARNING/TEACHING

Learning is an individualized activity and involves learners' personal goals, perceptions and unique learning style. Learning is goal oriented and an active life-long process of change and development. Teaching is a facilitative process through which leamers are guided and supported. It involves communication, clearly defined goals, appropriate learning activities and a climate conducive to growth. The curriculum is multi-disciplinary and aims to provide the learners with opportunities for intellectual and professional development.

## ENVIRONMENTS

Environments are milieus within which individuals, families, groups, and communities strive to achieve optimal health. As human beings attempt to mature and adapt within their environments, there are dynamic interactions which can serve as a source of growth. Environments encompass psychosocial, cultural, religious, political, economic, and physical contexts which impact upon the efforts of all.

## Program Goals

The Faculty of Nursing seeks to prepare graduates who will be able to:

1. Accept responsibility for self development, both personal and professional.
2. Use nursing and multi-disciplinary knowledge as the basis for nursing practice.
3. Effectively use the nursing process to promote, maintain, and restore the health of individuals, families, groups, and communities.
4. Establish collaborative partnerships with clients and their families, communities, and members of the health team for the promotion, achievement, and restoration of optimal health.
5. Lead nurses and others in the delivery of health care.
6. Promote the health of individuals, families, groups, and communities through the use of the teaching/learning process.
7. Use research findings in clinical practice, education, and management.
8. Practice within the ethical, legal, professional, and regulatory parameters of nursing.
9. Arrive at clinical judgements that are based on critical inquiry and analytical reasoning.

### 10.2 Admission

Requirements

### 10.2.1 GENERAL REGULATIONS AND PROCEDURES

The considerations listed below would apply to admission to all Nursing programs.

## Degrees in Other Disciplines

Special consideration may be given to applicants holding degrees in other disciplines.

## Admission by Transfer

A student who wishes to transfer from another university's Faculty of Nursing is required to submit an official transcript of records, descriptions of courses taken and a statement of reason for transfer. This statement of reason is subject to verification.
A minimum grade of C - must have been obtained in each course for it to be considered. Official transcripts and course descriptions should be submitted no later than two weeks prior to the first day of classes.

## Prior Nursing Courses

University nursing courses taken within seven years prior to admission or readmission to the Post Diploma B.Sc.N. program may be considered for credit.

## Selection for Admission

Preference will be given to applicants with the best qualifications. Selection of candidates for admission to the various programs will be based on criteria determined by the Faculty of Nursing Admissions Committee.

## Advanced Standing Examinations

Registered Nurse students who wish to write advanced standing examinations in Psychology 46-115, Sociology 48-101, and Nursing 63-230, must petition the academic unit concemed for permission to write any or all of the above examinations within the first woterms of the program. The application for $63-230$ must be submitted by June 30 .
Registered Nurse students may also be permitted to write advanced standing examinations in 63-331, 63-334, 63-333, and $63-433$. These examinations are available only to those registered nurses who can demonstrate via a portfolio prior knowledge of the course content. Portfolios for 63-433 must be submitted by June 30 for evaluation. Portílios for 63-331, 63-333, and 63-334 must be submitted by November 15 for evaluation. A fee will be applied for each portfolio evaluated.
Advanced standing examinations for 63-230 and $63-433$ will be offered within two weeks after the beginning of Fall classes. Advanced standing exams for 63-331, 63-333, and $63-334$ will be offered within two weeks atter the beginning of Winter classes. Students who pass these examinations will have the notation "Advanced Standing by Examination" entered on their transcripts. The normal charge for advanced standing examinations will be applied. Students who are unsuccessful are not permitted a second challenge attempt and must take the course. Post-Diploma students who have Canadian Nurses Association (C.N.A.) Specialty Cerfification may use it in lieu of the Nursing elective.

## Health Requirements

Students in the first year of all nursing programs must submit to the Director of the Faculty of Nursing during the first week of casses a Faculty of Nursing Student Health Record. This record which includes a physical examination, immunization for health care workers, and tuberculosis screening, must be certified by a nurse practitioner or a physician. In subsequent years, all students, prior to each clinical experience, must submit documentation of tuberculosis status
and update of immunizations, as appropriate.

## Other Requirements

1) Students must submit a birth certificate to the Director of the Faculty of Nursing during the first week of class. This does not apply to Registered Nurse students.
2) Students are responsible for their own travel and living expenses incurred in clinical nursing experiences, including the consolidation experiences. Additional costs may be required by some clinical agencies.
3) Students are responsible for supplying their own uniforms and accessories. Details pertaining to uniforms and accessories will be sent to those admitted to the program.
4) Students are required to possess a currently valid certificate in Standard First Aid from St. John Ambulance or Red Cross by the beginning of Year II of the four-year B.Sc.N. program.
5) Students are required to possess a currently valid certificate in C.P.R. at the Basic Rescuer Level by the beginning of Year II of the four-year B.Sc.N. program and prior to Year I of the post-diploma B.Sc.N. program Nursing courses. Students must provide evidence of recertification in each subsequent year.

### 10.2.2 COLLABORATIVE HONOURS B.Sc.N. PROGRAM

1) Six OAC credits including English I, Chemistry, and Biology are required. One Mathematics is recommended.
2) An interview with the Faculty of Nursing Admissions Committee may be required.

### 10.2.3 SECOND CAREER HONOURS B.Sc.N PROGRAM

To be considered eligible for admission the student must have successfully completed the following university level courses with an overall average of B - and a minimum C - average in the science courses :
(a) two courses in human physiology (55-204 and 55-205 or equivalent).
(b) one course in anatomy (55-202 or equivalent).
(c) one course in microbiology (55351 or 55-241 or equivalent)
(d) one course in biochemistry (59191 or equivalent).
(e) one course in statistics.
(f) one course in Arts.
(g) three Social Science courses (if the statistics course taken was in a social science department, then the applicant must take 3 additional Social Science courses).
(h) Applicants are required to have a current certificate in CPR and First Aid and demonstrate faility with English.
(f) Two letters of reference are also required

### 10.2.4 POST-DIPLOMA B.Sc.N. PROGRAM

1) Graduation from an approved basic Diploma program.
2) Nurse registration in Canada for the current year, pending Ontario registration.
3) University entrance-level English, Mathematics, Biology and Chemistry are recommended.
4) A currently valid certificate in C.P.R. at the Basic Rescuer level.
5) A letter of reference from current or most recent employer.
6) An interview with the Faculty of Nursing Admissions Committee may be required.

### 10.2.5 INTEGRATED, POST-DIPLOMA B.Sc.N./PRIMARY HEALTH CARE NURSE PRACTITIONER CERTIFICATE

1) The following, individual university admission requirements must be met:
(a) Graduation from an approved Diploma program is required.
(b) Applicants must hold or be eligible for a current certificate of registration as a registered nurse with the College of Nurses of Ontario.
(c) University entrance-level English, Mathematics, Biology and Chemistry are recommended.
(d) A currently valid certificate in C.P.R. at the Basic Rescuer level is required.
(e) An interview with the Faculty of Nursing Admissions Committee may be required.
(f) A letter of reference from current or most recent employer is required.
2) Preference will be given to Ontario residents whose work experience in nursing has been continuous and who have clinical experience in one or more of the following areas: primary health care, ambulatory care, public health, community health, long-term care, emergency care, or outpost nursing.
3) Applicants must have the equivalent of two years of full-time nursing practice within the past five years.
Note: This is a limited enrolment program. Therefore, possession of minimum published requirements does not guarantee admission.

### 10.2.6 TWELVE-MONTH, PRIMARY HEALTH CARE NURSE PRACTITIONER CERTIFICATE PROGRAM FOR DEGREE-PREPARED NURSES

1) The applicant must have a Bachelor of Science in Nursing which includes physical assessment, statistics, and a research methods course. An interview with the Faculty of Nursing Admissions Committee may be required. A letter of reference from current or most recent employer is required.
2) Applicants must hold or be eligible for a current certificate of registration as a registered nurse with the College of Nurses of Ontario.
3) Preference will be given to Ontario residents whose work experience in nursing has
been continuous and who have clinical experience in one or more of the foll ving areas: primary health care, ambulatory care, public health, community health, long-term care, emergency care, or outpost nursing.
4) Applicants must have the equivalent of two years full-time nursing practice within the past five years.
Note: This is a limited enrolment program. Therefore, possession of minimum published requirements does not guarantee admisson.

### 10.3 Program Requirements

Students are directed to become familiar and to comply with the general regulations of the University as described in 2.4 which apply to all students. Additionally, students must comply with the regulations particular to Nursing programs.

1) For promotion and graduation the following are required: A minimum grade of a C - in each nursing theory course; a pass in each dinical experience; a pass in each laboraloy component of each clinical experience; an overall 5.0 average.
2) A minimum grade of $B$-is required in each Primary Care Nurse Practitioner course. Furthermore, not more than one course may be repeated once.
3) The program of studies for the fouryear basic degree or the program for Registered Nurses must be completed within seven years from the first Nursing course (63-).
4) Students must attend all clinical nursing experiences and laboratories unless they have permission from the professor and/or a medical certificate to account for absence.
5) Student evaluations in clinical courses in Years 1 through 3 inclusive will be based on three components: lab quizzes, skill testing, and field practice. Each student must be successful in each component of the clinical experience in order to be successful in the
clinical course. The student must achieve a minimum average of sixty percent in the lab quizzes, a minimum average of sixty perce in the skill testing, and a Pass in the fieid practice.
6) The consolidation experience for Years 1 , 2 and 3 will commence on the first day of $\ln$ tersession. Clinical Nursing experiences may be arranged during day or evening shifts as well as weekends, and consolidated as necessary. Nights may be arranged at senior level and/or consolidation where deemed educationally appropriate and necessary by the Faculty of Nursing.
7) While taking 63-178, 63-188, 63-278, 63-$288,63-378$, and 63-388, students may not take any other course.
8) No more than sixteen courses may be taken at the 100 level.
9) Students who are required to upgrade or who wish to maintain their clinical skills must repeat the appropriate clinical course for credit, effective September 1999.
10) Students who are required to repeat a nursing course must notify the Undergraduate Program Co-ordinator, in writing, of their desire to return, by June 30. If a student fails to do so, a clinical placement cannot be guaranteed.
11) Students failing a clinical course may be required to complete make-up prior to retaking the course.
12) No student may repeat more than one Nursing course.
13) Students who intend to register for 63432 must notify the Undergraduate Program Co-ordinator by June 30 so that clinical placements can be arranged for the Fall term.
14) The Faculty of Nursing reserves the right to remove a nursing student from the clinical area at any time, in instances where the instructor has reason to believe that the student is rendering unsafe and/or unethical nursing care. Post-Diploma students must be in good standing with the College of Nurses of Ontario in order to remain in the program.
15) Students of the Faculty of Nursing are required to demonstrate behaviours consislent with the Professional Standards for fiegistered Nurses and Registered Practical Nurses; the Standards for the Therapeutic Nurse-Client Relationship; the Ethical Framework for Nurses in Ontario; and the Explanation of Professional Misconduct of the College of Nurses of Ontario; and of the academic policies of the University of Windsor.
Failure of any Nursing student to conform to the principles of these documentsmay result in dismissal from any of the Faculty of Nursing programs.
Note:The College of Nurses of Ontario requires that in order to obtain permission to write Nurse Registration Examinations and/or apply for Nurse Registration in Ontario, a person must provide a declaration of one's status regarding:
(a) any conviction of a criminal offense under the Narcotic Control Act and the Food and Drugs Act;
(b) being a subject of proceedings with respect to professional misconduct, incompetence, or incapacity in Ontario in another health profession or in another jurisdiction in nursing or in another health profession;
(c) any mental or physical disorder which makes it desirable in the public interest that the person not practice.

Some clinical practice/employment agencies also require a police records check prior to placement. This is the financial responsibility of the student.

## Further Information

Applicants wishing to discuss the program or visit the Faculty of Nursing should contact the School (519-253-3000, Ext. 2258). Information may also be obtained from the Intemet: http://www.uwindsor.ca/nursing.

### 10.4 Programs of Study

### 10.4.1 COLLABORATIVE FOUR-YEAR B.Sc.N PROGRAM

## FOR STUDENTS ENTERING NURSINGIN SEPTEMBER 2001

This program is four years in length and is designed for individuals who are seeking to prepare for a career in nursing at the baccalaureate level.
The curriculum is designed on the premise that professional nursing is multidisciplinary in nature, applying nursing, biological and social sciences, as well as the arts, to the care of individuals, families and communities. As inquiring, caring, competent pracitioners, nurses serve the needs of society through health promotion, health maintenance, prevention of disease and care of the sick and dying.
The Faculty of Nursing was granted National Accreditation in 1998 by the Board of Accreditation of the Canadian Association of University Schools of Nursing. It is also approved by the Accreditation Committee of the Ontario Region, Canadian Association of University Schools of Nursing.
Upon successful completion of the program, students are eligible to write nurse registration examinations and pursue graduate studies.
Total courses: forty-eight.
Major requirements: thirty-six courses including 6 double weighted courses, three of which are taken in Intersession: 63-170,63171, 63-172, 63-173, 63-174, 63-178, $63-$ 271, 63-272, 63-273, 63-274, 63-275, 63-277, 63-278, 63-321, 63-371, 63-372, 63-373, 63-374, 63-375, 63-377, 63-378, 63-379, 63-391, 63-471, 63-472, 63-473, 63-474, 63-475, 63-476, 63-477.
Other requirements: 9 courses including: 02-250 or 65-205, 46-115, 55-202, 55-204, $55-205,55-237$ or $55-206,55-351$ or 55 241, 59-191, 59-291.

## COURSE SEQUENCE

## YEAR ONE

Fall
63-171. Introduction to Nursing I
63-172. Clinical Nursing Experience
46-115. Introduction to Psychology as a Behavioural Science
55-202. Human Anatomy
55-204. Human Physiology I

## Winter

63-173. Introduction to Nursingll
63-174. Clinical Nursing Experience
63-170. Health Assessment
55-205. Human Physiology II
59-191. Organic and Biological Chemistry for Health Sciences

## Summer

63-178. Clinical Nursing Experience (4 weeks) (160 hours)

## YEAR TWO

## Fall

63-271. Family Health
63-272. Clinical Nursing Experience
63-273. Nursing Care of Clients with Episodic and Long-Term Health Needs
55-237. Introductory Microbiology or
55-206. Introduction to Microbiology
59-291. Pharmacology for Health Sciences

## Winter

63-274. Clinical Nursing Experience
63-275. Family Health: Child Bearing and Child Rearing Families
$63-277$. Nursing Care of Children and Youth with Episodic and Long-Term Health Needs
55-351. Medical Microbiology or
55-241. Infectious Diseases
$02-250$. Basic Quantitative Methods in Social Science or
65-205. Statistics for the Sciences Open option

## Summer

63-278. Clinical Nursing Experience (4 weeks) (160 hours)

Note: Three of the four open options must be sequenced and taken from one subject area. Only sixteen 100 -level courses are permitted.

## YEAR THREE

## Fall

63-371. Families Experiencing Crises
63-372. Clinical Nursing Experience
63-373. Nursing Care of Clients with Complex Health Problems I
63-377. Nursing Research
63-391. Basic Human Nutrition

## Winter

63-321. Conceptual Models for Practice
63-374. Clinical Nursing Experience
63-375. Nursing Care of Clients with Complex Health Problems II
63-379. Teaching, Leaming and Information Technology
Arts option
Open option(see Note above)

## Summer

63-378. Clinical Nursing Experience (4 weeks) (160 hours)

## YEAR FOUR

## Fall

Nursing Elective or open option
63-471. Community as a Client
63-472. Clinical Nursing Experience (6.0
Credit Hours) *
63-473. Concepts of Leadership in Nursing Practice
63-475. Health Issues and Professional Accountability

## Winter

63-474. Clinical Nursing Experience (6.0 Credit Hours) *
63-476. Clinical Nursing Experience (6.0 Credit Hours) *
63-477. Directed Study

## 10 FACULTY OF NURSING

### 10.4.2 SECOND CAREER FOUR-YEAR B.Sc.N PROGRAM

This program is designed for those individuals who have a completed or partially completed degree in another discipline. It is equivalent to the collaborative Honours B.SC.N. degree except that it is compressed into twenty-eight months of full-time study and, except for a course in phamacology, consists only of Nursing courses.
Due to the rigour of the program, it is highly recommended that students not be employed during the academic sessions
The academic goal of the program is to prepare (in a compressed time frame) baccalaureate level graduates who will be able to serve the needs of society in the $21^{\text {st }}$ Century through health promotion, health maintenance, prevention of disease and care of the sick and dying.
The Faculty of Nursing was granted National Accreditation in 1998 by the Board of Accreditation of the Canadian Association of University Schools of Nursing. It is also approved by the Accreditation Committee of the Ontario Region, Canadian Association of University Schools of Nursing.
Upon successful completion of the program, students are eligible to write nurse registration examinations and pursue graduate studies.

Total courses: thirty-six courses, 1360 clinical hours.
Major requirements: thirty-five courses including 7 double weighted* courses: 63-181, 63-182, 63-183, 63-184, 63-188*, 63-221, 63-281, 63-282, 63-283, 63-284, 63-285, 63-287, 63-291, 63-381, 63-382*, 63-383, 63-384*, 63-385, 63-387, 63-482*, 63-483, 63-484*, 63-485, 63-487, 63-489, 63-493, 63-497*, 63-498*.

Other requirements: 9 courses including: 02-250 or 65-205, 46-115, 55-202, 55-204, $55-205,55-237$ or $55-206,55-351$ or $55-$ 241, 59-191, 59-291.

## COURSE SEQUENCE

YEAR ONE

## Intersession

63-181. Introduction to Nursing I
63-182. Clinical Nursing Experience(6 weeks) (48 hours)

## Summer Session

63-183. Introduction to Nursingll
63-184. Clinical Nursing Experience
63-188. Clinical Nursing Experience (2 weeks) (80 hours)

## Fall

63-281. Family Health
63-282. Clinical Nursing Experience
63-283. Nursing Care of Clients with Episodic and Long-Term Health Needs
59-291. Pha rmacology for Health Sciences 63-291 Basic Human Nutrition

## Winter

63-381. Adult Health III
63-382. Clinical Nursing Experience
63-387. Teaching/Learning
63-221. Conceptual Models for Practice
$63-285$. Parent Child Nursing II

## YEAR TWO

## Intersession

63-284. Clinical Nursing Experience (6 weeks) (144 hours)
$63-287$. Adult Health II

## Summer Session

63-384. Clinical Nursing Experience(6 weeks) ( 96 hours)
63-385. Adult Health IV
63-383. Family and Community Health Nursing I

## Fall

63-483. Family and Community Nursing II
63-485. Concepts of Leadership in Nursing Practice
63-482. Hospital Clinical Practice OR
63-484. Community Clinical Practice

## Winter <br> 63-482. Hospital Clinical Practice $O R$ <br> 63-484. Community Clinical Practice <br> 63-487. Issues <br> 63-489. Research in Nursing <br> 63-493. Directed Study

## Intersession

63-497. Precepted Clinical Experience (5 weeks) ( 160 hours)

## Summer <br> 63-498. <br> Precepted Clinical Experience (5 weeks) (160 hours) <br> 10.4.3 POST-DIPLOMA B.Sc.N. PROGRAM

This program involves two years of full-time study and is designed for graduates of diploma nursing programs at colleges of applied arts and technology or of hospital-based or regional schools of nursing. It is offered to registered nurses whose goal is to add to their knowledge and skills in nursing, and to advance to baccalaureate preparation.
The curriculum is designed on the premise that professional nursing is multidisciplinary in nature, applying nursing, biological, and social sciences as well as the arts, to the care of individuals, families and communifes. As inquiring, caring, competent practitioners, nurses serve the needs of society through health promotion, health maintenance, prevention of disease, and care of the sick and dying.
Upon successful completion of the program, students are eligible to pursue graduate studies.

## Program for Community College Nursing Graduates

## YEAR ONE

## Fall

63-230. Health Assessment
63-231. Current Professional Nursing Roles
63-232. Clinical Nursing Experience
63-233. Conceptual Frameworks for Nursing Practice
55-237. Introductory Microbiology or 55-206. Introduction to Microbiology One course in Political Science

## Winter

$63-331$. Family Nursing
63-333. Nurse as Counsellor and Educator
63-334. Clinical Nursing Experience
55-351. Medical Microbiology or
55-241. Infectious Diseases
One open option

## yEAR TWO

## Fall

$63-431$. Community Nursing
63-432. Clinical Nursing Experience
63-433. Leadership and Management in Nursing
one of:

## 02-250. Basic Quantitative Methods in the Social Sciences

65-205. Statistics for the Sciences
and one of:
63-241. Health Issues and Care of Diverse Populations
63-243. Issues in Women's Health
63-245. Health Issues in Gerontology
63-247. Transcultural Health
63-249. Clinical Ethics for Health Professionals
63-351. The Human Meaning of Death

## Winter

63-443. Nursing Research
63-445. Personal and Professional Empowerment
63-447. Directed Study
One Arts option
One open option

## Program for Pre-1974 Graduates of Hospital-Based or Regional Schools

Registered Nurses in the Post Diploma B.Sc.N. program who graduated prior to 1974, in addition to the courses outlined for community college graduates, must successfully demonstrate knowledge and comprehension of physiology, sociology, and psychology. These requirements may be met by enrolling in 55-204 and 55-205. The requiments for Psychology may be met by enrolling in $46-115$ and $48-101$, or by earning credit by advanced standing examination in those courses.
Note: At least ten of the courses for the Post Diploma B.Sc.N. must be taken at the University of Windsor. In the event that the applicant has completed equivalent courses elsewhere, other courses may be substituted with the consent of the Director of the Faculty of Nursing.

### 10.4.4 PRIMARY HEALTH CARE NURSE PRACTITIONER PROGRAMS

These programs prepare an advance practice nurse capable of diagnosing and managing common health problems that occur throughout life. The nurse practitioner emphasizes holistic care, health promotion, and disease prevention through the application of advanced knowledge and skills. Graduates will be critical thinkers, self-directed leamers, and reflective, collaborative practitioners who function independently and interdependently within an interdisciplinary team. They are responsible and accountable for their own practice.
REGULATIONS
A minimum grade of $B$ - is required in each primary health care nurse practitioner course. A candidate for either Primary Health Care Nurse Practitioner program
who does not obtain credit in any course may repeat the course once only; furthermore, not more than one course may be repeated. There may be no more than a 3 -year lapse between Nurse Practitioner courses, Application review will begin March $1^{\text {st }}$, applications should be made through the $\mathrm{On}_{\mathrm{n}}$ tario Universities' Application Centre (OUAC).
CERTIFICATE PROGRAM
This is a twelve-month program designed for nurses who already have a baccalaureate degree in nursing.
Fall
63-450. Pathophysiology for the Nurse Practitioner (3 credit hours, 2 terms)
63-452. Roles and Responsibilities of the Nurse Practitioner in Primary
Health Care. (3 credit hours, 2 terms)
63-454. Advanced Health Assessment and Diagnosis (9 credit hours, 2 terms)
63-460. Therapeutics in Primary Health Care ( 9.0 credit hours, 2 terms)

## Winter

63-450. Pathophysiology for the Nurse Practitioner (3 credit hours, 2 terms)
63-452. Roles of the Nurse Practitioner in Primary Health Care
63-454. Advanced Health Assessment and Diagnosis ( 9.0 credit hours, 2 terms)
63-460. Therapeutics in Primary Health Care ( 9.0 credit hours, 2 terms)

## Summer

63-495. Integrative Practicum (12 credit hours)

INTEGRATED, POST-DIPLOMA B.Sc.N. AND PRIMARY HEALTH CARE NURSE
PRACTITIONER CERTIFICATE PROGRAM
This is a twenty-four month program designed for graduates of diploma nursing programs at colleges of applied arts and technology, or of hospital-based schools of
nursing. It combines the degree program for registered nurses with the certificate program for the Primary Health Care Nurse Practitioner.
Students registered in this program will be required to consult with the Co-ordinator of the Primary Health Care Nurse Practitioner Program for course scheduling.
In addition to the above courses, the Intergrated Program includes:
$63-231$. Current Professional Nursing Roles
63-232. Clinical Nursing Experience
63-233. Conceptual Frameworks for Nursing Practice
63-331. Family Nursing
63-333. Nurse as Counsellor and Educator
63-334. Clinical Nursing Experience
63-431. Community Nursing
63-433. Leadership and Management in Nursing
63-443. Nursing Research
55-237. Introductory Microbiology or
55-206. Introduction to Microbiology
55-351. Medical Microbiology or
55-241. Infectious Diseases
$02 \cdot 250$. Basic Quantitative Methods in the Social Sciences or
65-205. Statistics for the Sciences
pus:
one Political Science course one Arts option
one open option

### 10.5 Course Descriptions

Note: Only 63-241, 63-243, 63-245, 63247, 63-249, 63-291, and 63-351 are open bnon-Nursing students. These courses will not necessarily be offered each year.

## 63-170. Health Assessment

Students, through lectures, readings, and simulation in the laboratory, learn and praclice performing a holistic health history and the techniques of inspection, percussion, palpation and ausculation for systematic health assessment of individuals across the life span. The course focuses on normal varations encountered in practice. (Prereq-
uisites: 63-171, 63-172, 55-202, and 55204.) (Corequisite: $55-205$ ) ( 2 lecture hours and 2 tutorial hours a week.)

## 63-171. Introduction to Nursing

Professional nursing, its organization, structure, dimensions and responsibilities are explored with an emphasis on the role of the nurse and nursing competencies that facilitate maturation and adaptation of clients. Using critical thinking, students are introduced to the concepts of health, clinical de-cision-making, problem-solving including the nursing process, communication, caring teaching/learning, and management/planned change. Students learn to identify the health needs of individuals. (3 lecture hours a week.)
63-172. Clinical Nursing Experience
A clinical course designed to provide students with the opportunity to learn and practice patient care and care planning skills in simulated and clinical settings. To be taken concurrently with 63-171 in related clinical areas. (Offered on a Pass/Non-Pass basis.) ( 8 hours a week.)

## 63-173. Introduction to Nursing II

Using critical thinking, students learn the nurse's role in health promotion and illness/injury prevention through the use of problem solving, the nursing process, communication, caring, and teaching/learning processes. Students will examine health promotion and illness/injury prevention strategies relative to healthy lifestyle. (Prerequisites: 63-171, 63-172, 55-202, and 55204.) (3 lecture hours a week.)

## 63-174. Clinical Nursing Experience

This course provides students with the opportunity to learn and practice health assessment, intervention and evaluation skills for health promotion and disease prevention. Taken concurrently with 63-173 in the related clinical areas. (Prerequisites: 63171, 63-172, 55-202 and 55-204.) (Offered on a Pass/Non-Pass basis.) ( 8 hours a week.)

## 63-178. Clinical Nursing Experience

Taken in intersession/summer session, or as determined by the Faculty of Nursing, provides the student with a consolidated expe-
rience of clinical practice. At the end of the course, students will be able to formulate and implement a plan of care with clients relative to their health promotion and illness/injury prevention goals as well as evaluate the plan's effectiveness. (Prerequisites: 63-170, 63-173, 63-174, 55-202, 55204.) (Offered on a Pass/Non-Pass basis.) ( 4 weeks, 40 hours a week.)

## 63-181. Introduction to Nursing Concepts I

Concepts of health and illness, the role of the nurse and nursing behaviours which promote health are studied. Growth and development, problem solving and communication theories and the helping relationship are examined. The nursing process is introduced. Students learn to identify health needs of the individual, family, and the community. (3 lecture hours a week.)

## 63-182. Clinical Nursing Experience

To be taken concurrently with 63-181 in the related clinical and community areas. (Offered on a Pass/Non-Pass basis.) ( 5 hours a week.)

## 63-183. Introduction to Nursing Concepts II

The nurse's role in preventing illness and promoting health is explored. Principles of stress adaptation, learning, and planned change are introduced. Health assessment with emphasis on history taking and interviewing is introduced to enable students to as sess client needs in various settings. (Prerequisites: 63-181,63-182, 55-202, and 55204.) (3 lecture hours a week.)

## 63-184. Clinical Nursing Experience

Taken concurrently with 63-183 in the related clinical and community areas. (Prerequisites: 63-181, 63-182, 55-202 and 55-204.) (Offered on a Pass/Non-Pass basis.) (5 hours a week.)

## 63-188. Clinical Nursing Experience

Period of continuous practice taken in intersession or as determined by the Faculty of Nursing. (Prerequisites: 63-183 and 63184.) (Offered on a Pass/Non-Pass basis.) (2 weeks, 40 hours a week.)

## 63-221. Conceptual Models for Nursing Practice

An examination of conceptual models of nursing as the basis for practice. Selected models and their philosophical foundations will be discussed. (Prerequisite: 63-188.) (3 lecture hours a week.)

## 63-230. Health Assessment

A self-directed course for registered nurses. Through specific readings, videotapes, and laboratory practice, students prepare to demonstrate competence in performing a systematic physical assessment and healih history. (Must be completed prior to Year 2) (3 lecture hours a week equivalent.)

## 63-231. Current Professional Nursing Roles

An introduction to the theories and role behaviours that will facilitate the transition to baccalaureate nursing practice. Health, communication, caring, and problem-solving will be emphasized. (To be taken concurrently with 63-232.) (3 lecture hours a week)

## 63-232. Clinical Nursing Experience

A guided clinical experience related to the optimal health of individuals. Focus will be on the application of theoretical knowledge and development of nursing practice. (To be taken concurrently with 63-231.) (Offered on a Pass/Non-Pass basis.) ( 8 hours a week.)

## 63-233. Conceptual Frameworks for Nursing Practice

An examination of selected nursing concep tual models and their application in practice. (3 lecture hours a week.)

## 63-241. Health Issues and Care of Diverse Populations

The examination of the relationship between marginalization and vulnerability in the health care of diverse populations. (Open to non-Nursing students and may be taken as an open option by B.Sc.N. students.) (3lecture hours a week.)

## 63-243. Issues in Women's Health

An exploration of issues relevant to women as consumers and providers of heallh care. Pertinent topics to be discussed will include reproductive health, family health, mental health, abuse, and occupational health. (Open to non-Nursing students and may be
taken as an open option by B.Sc.N. students.) (3 lecture hours a week.)

## 63-245. Health Issues in Gerontology

 This course is designed to focus on health issues resulting from age-related changes in human functioning. It will include a study of the aging process, epidemiology of aging as well as health and social policies relevant to the aging population. Disease processes particularly prevalent in elderly persons and related therapeutic measures will also be discussed. (Open to non-Nursing students and may be taken as an open option by B.Sc.N. students.) (3 lecture hours a week.)
## $63-247$. Transcultural Health

Exploration of theory and research related to health and illiness beliefs and practices across the life cycle of diverse cultural populations in Canada. Topics will include transcultural concepts in mental health, famiy health, aspects of pain, and care of the elderly. (Open to non-Nursing students and may be taken as an open option by B.Sc.N. students.) (3 lecture hours a week.)

## 63-249. Clinical Ethics for Health Professionals

An exploration of moral issues and quesfions confronting health care professionals and consumers within the context of the health care system. Professional codes and guidelines form the framework for clinical case presentations. (Open to non-Nursing students and may be taken as an open opfon by B.Sc.N. students.) (3 lecture hours a week.)

## $63-281$. Parent-Child Health Nursing I

Theories of human development, stress adaptation, communication, and caring are studied as they relate to the childbearing tamily. Students will develop ability to use a varety of physiological, psychosocial, and other concepts pertaining to the family in the perinatal period. (Prerequisites: 63-188, 59191, and 55-205; corequisites: 63-283 and 59-291.) (3 lecture hours a week.)

## 63-282. Clinical Nursing Experience

 To be taken concurrently with 59-291, 63281, and 63-283 in the related clinical and community areas.) (Prerequisite: 63-188.)(Offered on a Pass/Non-Pass basis.) (10 hours a week.)

## 63-283. Adult Health Nursing I

Concepts of maturation, stress adaptation, and caring will be explored in relation to individuals with alterations in health status and their families. (Prerequisites: 63-188, 55205, and 59-191; corequisites: 63-281 and 59-291.) (3 lecture hours a week.)

## 63-284. Clinical Nursing Experience

(To be taken concurrently with 63-285 and 63-287 in the related clinical and community areas.) (Prerequisites: 63-281, 63-282, 63283, and 59-291.) (Offered on a Pass/NonPass basis.) ( 10 hours a week.)

## 63-285. Parent-Child Health Nursing II

 Expansion of the theories studied in ParentChild Health Nursing I, with a focus on the developing child and the childbearing family in health and illness in various settings. (Prerequisites: 63-281, 63-282, 63-283, and 59291; corequisites: 63-221 and 63-287.) (3 lecture hours a week.)
## 63-287. Adult Health Nursing II

Expansion of theories and concepts studied in Adult Health Nursing I, with a focus on individuals experiencing more complex alterations in health status and their families. Health assessment with emphasis on physical assessment is included. (Prerequisites: 63-281, 63-282, 63-283, and 59-291; corequisites: 63-221 and 63-285.) (3 lecture hours per week.)

## 63-288. Clinical Nursing Experience

Period of continuous practice taken in Intersession or as determined by the Faculty of Nursing. (Prerequisites: 63-221, 63-284, 63-285, and 63-287.) (Offered on a Pass/Non-Pass basis.) ( 4 weeks, 40 hours a week.)

## 63-291. Basic Human Nutrition

A study of the basic principles of nutrition and their relationship to good health. Emphasis is placed on the digestion, absorption, and metabolism of the various nutrients. (Open to non-Nursing students.) (Prerequisites: 59-191 and one of 55-141, 55-204, or 55205.) (3 lecture hours a week.)

## 63-331. Family Nursing

An introduction to family theories, models, and assessment tools that will assist the student to provide family-centred nursing care. (Prerequisites: 63-231, 63-232 and 63233.) (3 lecture hours a week.)

## 63-333. Nurse as Counsellor and Educator

Concepts, theories, and research in counselling, teaching, and learning as they relate to the nursing roles of counsellor and educator. (Prerequisites: 63-231 and 63-232.) (3 lecture hours a week.)

## 63-334. Clinical Nursing Experience

Guided clinical experience in which students apply the theoretical bases of family nursing, education, and counselling in the practice of family-centred nursing. (Prerequisites 63231, 63-232, 63-233; Prerequisites or corequisites: 63-331 and 63-333.) (Offered on a Pass/Non-Pass basis.) (8 hours a week.)
63-351. The Human Meaning of Death An examination of the human experience of death and dying, the meaning of human life, ethical and cultural aspects, euthanasia, and advanced directives. Lectures, readings, films, and discussions will explore a variety of significant thinkers and concepts concerning death. Through various exercises and shared experiences, students will be encouraged to examine their own feelings and attitudes toward death. (Open to non-Nursing students and may be taken as an Arts option by B.Sc.N. students.) (3 lecture hours a week.)

## 63-381. Adult Health Nursing III

Theories and concepts of caring, stress adaptation, human development, and communication counselling are studied as they relate to the mental health of individuals, families, and small groups. (Prerequisites: 63-288, 55-206, and 55-241 (or 55-237 and 55-351); corequisites: 63-291 and 63-383.) (3 lecture hours a week.)

## 63-382. Clinical Nursing Experience

(To be taken concurrently with 63-381 and 63-383 in the related clinical and community areas.) Focus in Laboratory component is on counselling skills and health assessment
skills. (Prerequisite: 63-288.) (Offered on a Pass/Non-Pass basis.) (10 hours a week.)

## 63-383. Family and Community Health Nursing I

Theories and concepts of family and community are examined in relation to the health of families, groups, and communities. Factors contributing to health and disease, behavioural perspectives on normal development, and the family as a support system are considered. (Prerequisites: 63 288, 55-206, and 55-241; corequisites: $63-$ 291 and 63-381.) (3 lecture hours a week.)

## 63-384. Clinical Nursing Experience

(To be taken concurrently with 63-385 and 63-387 in the related clinical and community areas.) Focus in laboratory component is on health assessment skills. (Prerequisites: 63 381, 63-382, and 63-383.) (Offered on a Pass/Non-Pass basis.) (10 hours a week.)

## 63-385. Adult Health Nursing IV

Synthesis of theories and concepts studied in Adult Health Nursing II and III, with a focus on decision making and nursing management of individuals and families experiencing complex health problems. (Prerequisites: 63-381, 63-382, and 63383.) (3 lecture hours a week.)

## 63-387. The Process of Teaching and Learning in Nursing

The philosophical and theoretical aspects of the teaching/learning process are examined. Concepts of health promotion, patient education, and health related education activities for individuals, families, and groups are included. (Prerequisite: 63-288.) (3 lecture hours a week.)

## 63-388. Clinical Nursing Experience

Period of continuous practice to be taken in Intersession or as determined by the Faculty of Nursing. (Prerequisites: 63-384, 63-385, and 63-387.) (Offered on a Pass/Non-Pass basis.) ( 4 weeks, 40 hours a week.)

## 63-431. Community Nursing

Theory related to nursing care of communities, with emphasis on heath promotion. An examination of the factors influencing the health of communities will be included. (Prerequisites: 63-231, 63-232, and 63-233.) (3 lecture hours a week.)

## 63-432. Clinical Nursing Experience

 Guided clinical experience in which students apply theories of leadership, management, and community organization and assessment in the provision of care to client groups. (Offered on a Pass/Non-Pass basis.) (Prerequisites 63-231, 63-232, and 63-233; Prerequisites or corequisites: 63-431 and W-433.) (8 hours a week.)63-433. Leadership and Management in Nursing
Leadership, management, planned change, andorganizational theories are examined as they relate to the role of nurse as leader/manager. (Prerequisites: 63-231, 63232 and 63-233.) (3 lecture hours a week.)

## $63-443$. Nursing Research

An introduction to the research process in nursing. The focus of the course is on enabling the student to critique and utilize research findings in practice. (Prerequisites: $63-231,63-232$ and 63-233 and one of 02250 or 65-205.) (3 lecture hours a week.)

## \&3-445. Personal and Professional Empowerment

Aseminar course focusing on empowering nurses. Current issues and trends that impact upon nursing and the Canadian health care system will be examined. (Prerequisites 63-231, 63-232, and 63-333.) (3 hours a week.)

## 63-447. Directed Study

This course provides the student with an opportunity for an indepth study of a health issue in management, education, or practice. Theory and practice are included. (Prerequisites: 63-231, 63-232, and 63-233) (3 lecture hours a week.)

## 63-450. Pathophysiology for the Nurse <br> Practitioner

Asystems approach will be used to examine concepts in pathophysiology as a basis for advanced nursing practice. Common themes that interface with pathophysiologiCalconcepts will be integrated into each system, such as changes throughout the llespan, stress, pain, and cellular proliferafon. A case study approach will be incorporated in order to provide a comprehensive overview of the etiology, pathogenesis, and
clinical manifestations of diseases in adults and children found in primary health care. (Prerequisites 55-206 and 55-241.) (3 lecture hours a week.)

## 63-452. Roles and Responsibilities of the Nurse Practitioner in Primary Health Care

Examination of the roles and responsibilities of the primary health care nurse practitioner in enhancing health and health services. Historical development, relationships with clients, legal and ethical considerations, scope of practice and relationships with other health providers, including functioning in interdisciplinary teams, primary health policy formation and political strategies, as well as role transformation, supports, and care of self are addressed. May be used by integrated B.Sc.N./N.P. students to meet the requirement of 63-445 in the postR.N./B.Sc.N. program. (3 lecture hours a week.)

## 63-454. Advanced Health Assessment and Diagnosis

The course will focus on helping students conduct a full range of health assessments towards the goal of providing comprehensive and holistic care to individuals, families, and communities. Emphasis will be placed on health promotion and maintenance and disease prevention within a primary health care setting. (A 9.0 credit hour course, two terms.) May be used by integrated B.Sc.N./N.P. students to meet the requirement of 63-230 in the post-R.N./B.Sc.N. program. (3 lecture, 3 laboratory hours a week.)

## $63-460$. Therapeutics in Primary Health Care

This course is designed to develop the knowledge, skill, and competencies required of a nurse practitioner in managing health and injury through a variety of clinical therapeutic strategies which include pharmacology, complimentary therapeutics, technical skills, and advanced therapeutic counselling. (Prerequisites or corequisites 63-450 and 63-454.) (A 9.0 credit hour course two terms.) May be used by integrated B.Sc.N./N.P. students to meet the requirement of one open option and one nursing elective in the post-R.N./B.Sc.N.
program. ( 3 lecture, 3 laboratory hours a week.)

## 63-482. Hospital Clinical Nursing Experience

Taken either in the Fall or the Winter term in the related clinical area. (Offered on a Pass/Non-Pass basis.) (Prerequisite: 63388.) (A 6.0 credit hour course.) ( 16 hours a week.)

## 63-483. Family and Community Health Nursing II

Synthesis of theories and concepts studied in 63-383, Family and Community Health I with an emphasis on community assessment. (Prerequisites: 63-388.) (3 lecture hours a week.)

## 63-484. Community Clinical Nursing Experience

Taken in either the Fall or the Winter term in the related community areas. (Offered on a Pass/Non-Pass basis.) (Prerequisite: 63388; pre- or corequisite: 63-431.) (A 6.0 credit hour course.) ( 16 hours a week.)

## 63-485. Concepts of Leadership in Nursing Practice

Organizational, management, leadership, and change theories will be examined as they affect delivery of health care by nursing professionals. The nurse's role as co-ordinator, collaborator, and planner will be explored. (Prerequisite: 63-388.) (3 lecture hours a week.)

## 63-487. Current Issues in Nursing

Examination of the issues and trends that affect nursing and health care in Canada. Exploration of strategies nurses may use to empower themselves and their profession. (Prerequisite: 63-288.) (3 lecture hours a week.)

## 63-489. Research Process in Nursing

The process of research in nursing is explored. The student will develop the ability to comprehend, participate in and evaluate research as an informed consumer. (Prerequisites: 63-288 and one of 02-250 or 65-205.) (3 lecture hours a week.)

## 63-493. Senior Directed Study

The purpose of this course is the enrichment of the students' overall program of study. Each student chooses a major health prob-
lem for an in-depth study in order to analyze nursing practice. (Prerequisite: 63-388.) (3 lecture hours a week.)

## 63-495. Integrative Practicum

This course will provide clinical experiences in which the student will integrate the knowedge and skills presented in previous courses into primary health care settings. This course includes seminars and clinical practicum to be done concurrently. (This is the final course in the Nurse Practitioner program, to be taken after all other course work has been successfully completed.) May be used by integrated B.Sc.N./N.P students to meet the requirement of 63-432 and the requirement of 63-447 in the postReg.N./B.Sc.N. program. (13 weeks, 40 hours a week.) (A 12.0 credit hour course.)

## 63-497. Precepted Clinical ExperienceInpatient

A precepted clinical experience which enables the student to synthesize theory, research and professional and te chnical skills in clinical practice. The focus is on the care of adults experiencing complex or multi-system health disruptions. The expected outcome is a beginning competency level identified by the College of Nurses of Ontario. ( 5 weeks, 32 hours a week) (A 6.0 credit course)

## 63-498. Precepted Clinical ExperienceOptional Site

A precepted clinical experience which enables the student to synthesize theory, research and professional and te chnical skills in clinical practice. The expected outcome is a beginning competency level identified by the College of Nurses of Ontario. The client population and/or the practice site is the student's choice. ( 5 weeks, 32 hours a week) ( $A$ 6.0 credit course)

## 11 FACULTY OF GRADUATE STUDIES AND RESEARCH

 Room 306, Chrysler Hall Tower-Ext. 2109The Faculty of Graduate Studies and Research integrates graduate programs in all disciplines at the University of Windsor. The graduate faculty members are professors in individual areas of study who are involved in graduate education and research; they are isted in the Graduate Calendar (separately, by subject area). The Faculty of Graduate Studies and Research administers the admissions and awards processes. Informalion about graduate programs and admissions is available from the Office of Applicant Services (Graduate Division), University of Windsor, Windsor, Ontario, Canada N9B 3P4 (gradadmit @ uwindsor.ca). Information about graduate awards is available from the Office of Graduate Studies and Research, Room 306, Chrysler Hall Tower.

### 11.1 Structure of the Faculty

## OFFICERS OF ADMINISTRATION

Dean, Faculty of Graduate Studies and Research
Cameron, W. Sheila; R.S.C.N. (Scotland), Reg.N., B.A. (McMaster), M.A. Nurs. Educ. (Detroit), Ed.D. (Wayne State), FA.A.M.R.-1976.

## Associate Dean

Barron, Ronald M.; B.A., M.Sc. (Windsor), M.S. (Stanford), Ph. D. (Carleton)-1975.

Research Institutes and Directors
FLUID DYNAMICS RESEARCH INSTITUTE

Interim Director: Dr. Gary W. Rankin

GREAT LAKES INSTITUTE FOR ENVIRONMENTAL RESEARCH
Interim Director: Dr. Brian Fryer
Founding Director: Dr. Marie Sanderson
HUMANITIES RESEARCH GROUP
Interim Director: Dr. Jacqueline Murray

### 11.2 Degrees Offered

The Faculty of Graduate Studies and Research offers programs leading to the following degrees:
Master of Arts in Economics, English Literature, English and Creative Writing, History, Philosophy, Political Science, Psychology, and Sociology;
Master of Science in Biological Sciences, Chemistry and Biochemistry, Computer Science, Geology, Mathematics, Nursing, Physics, and Statistics;
Master of Applied Science in Civil Engineering, Electrical Engineering, Engineering Materials, Environmental Engineering, Industrial Engineering, and Mechanical Engineering;
Master of Business Administration; Integrated M.B.A./LL.B.;
Master of Education;
Master of Fine Arts in Visual Arts;
Master of Human Kinetics in Kinesiology;
Doctor of Philosophy (Ph.D.) in Biological Sciences, Chemistry and Biochemistry, Civil Engineering, Educational Studies (Joint Program); Electrical Engineering, Engineering Materials, Environmental Engineering, Manufacturing Systems Engineering, Mathematics, Mechanical Engineering, Physics, Psychology, Sociology (Social Justice), and Statistics.
Postdoctoral Certificate in Adult Clinical Psychology.

### 11.3 Application Procedures

An application for admission may be obtained from the Office of Applicant Services (Graduate Studies Division), University of Windsor, Windsor, Ontario, Canada N9B 3P3 (gradadmit @uwindsor.ca).
Applicants are advised to check subject area listings for deadlines. If an earlier deadline is not specified, applications, official transcripts, confidential reports, and a $\$ 55$ (Canadian) fee should be submitted no later than July 1 for September admission; November 1 for January admission; and March 1 for May admission. However, applicants are advised that offers of admission will be made prior to these dates to qualified applicants, and that all available positions may be filled before the deadlines. Early applications are advised.
Intemational applicants are required to obtain a student visa. This is the sole responsibility of the applicant. Applicants are advised that Canadian government processing of visa applications may take several weeks, or even months.
All documents received become the property of the University and will not be returned.
Admission to the Faculty of Graduate Studies and Research is by letter of offer from the Dean of Graduate Studies and Research.
A decision to admit or not admit is made by the Dean on the basis of a recommendation received from an academic unit, together with the documents required for admission.
A decision may be reconsidered upon the request of either the applicant or the academic unit if further information is offered.
Applicants who have not been admitted to the Faculty of Graduate Studies and Research may upgrade their qualifications and reapply. A subsequent decision would be made on the basis of a further recommendation from the academic unit and the upgraded file.

Action will be taken on an application for admission when all the documents listed below have been réceived:

1) The form "Application for Admission to the Faculty of Graduate Studies and Research" properly filled out.
2) Two official transcripts of all undergraduate and graduate work from all colleges or universities attended.
3) Two completed "Confidential Report" forms as indicated on the application form; three report forms are required for applicants to Psychology.
4) Graduate Record Examination (GRE): Applicants whose academic credentials are difficult to assess may be required to wite the Graduate Record Examination administered by the Educational Testing Service, Princeton, New Jersey, U.S.A. 08540 . Information on the GRE may be obtained from the Office of Applicant Services.
5) Graduate Management Admission Test (GMAT): M.B.A. applicants are required to take the Graduate Management Admission Test prior to admission. Information on the GMAT may be obtained from the Office of Applicant Services.
6) For all applicants whose native language is not English, a satisfactory score on an English proficiency test administered by one of the following institutions:
(a) The Educational Testing Service, Test of English as a Foreign Language (TOEFL): For information on arranging for this test the applicant should write to Educational Testing Service, Princeton, New Jersey, U.S.A. 08540.
(b) The English Language Institute of the University of Michigan, Michigan English Language Assessment Battery (MELAB): The applicant is expected to make arrangements for taking this test in his or her own locale by contacting the regional centre or by writing to the English Language Institute of the University of Michigan, Testing and Certification, North University

Building, Ann Arbor, Michigan, U.S.A. 48109.
(c) Carleton Assessment of English (CAEL): Contact The Centre for Applied Language Studies, Room 215 Paterson Hall, Carleton University, Ottawa, Ontario, Canada K1S 5B6.

An applicant who is unable to take one of these tests must present satisfactory alternative evidence of English proficiency. Consideration of alternative evidence may be requested by writing to the Dean of Graduale Studies and Research and by presenting supporting documentation of English proficency.
7) Offers of admission are made for a specific term, and acceptance normally may be deferred for one term only. Students wishing 10 be reconsidered for admission at a later date will normally be required to fill in a new application and to resubmit their documents.
8) Postgraduate Awards: While there is no guarantee of financial support for individual students, the University of Windsor is committed to supporting and encouraging graduate studies. We are proud of our record of funding for graduate study and, with the active effort of current and potential graduate students, we aim to sustain and enhance that record. Your host area of study and the Faculty of Graduate Studies and Research will be happy to assist you in the preparation of strong and complete applicafions for external awards.
All eligible students whose applications are complete by February 1 will be considered within their area of study for intemal awards administered by the Faculty of Graduate Studies and Research.
The five main sources of funding for graduate students at the University of Windsor are:
(a) National (Canadian) and provincial (Ontario) scholarships;
(b) Internal scholarships and bursaries;
(c) Internal graduate teaching assistantships and research assistantships;
(d) Loans through OSAP (Ontario Student Assistance Program);
(e) Discipline-specific or designated awards (awarded by departments or external donors).

Intemational students ("visa students") may also be eligible for scholarship and bursary support through programs based in or administered through the home country. We recommend that international students investigate potential sources of support prior to making an application to graduate school, noting that, in Ontario, tuition costs for international students are higher than those for Canadians and Canadian permanent residents (landed immigrants). International students should note that if they hold certain specific forms of visa status, they may not be required to pay the higher "International Student" tuition, but instead may be eligible to pay at the same rate as Canadians and Canadian permanent residents. Details of these exceptions to the International Student rate are available on an information sheet from the Office of Graduate Studies and Research. For further information regarding graduate scholarships, bursaries and other awards, please see the Graduate Calendar.
Undergraduate students who are interested in exploring graduate research should contact their area of study to determine if summer research positions are available. Such positions are usually supported by research grants awarded to individual faculty.

### 11.4 Programs of Study

### 11.4.1 THE DEGREE OF DOCTOR OF PHILOSOPHY

## ADMISSION REQUIREMENTS

Graduates of recognized colleges or universities may apply for admission. In general, admission to graduate study is granted only to those students who have good academic
records and who are adequately prepared to undertake graduate work in their field of specialization. An applicant for admission to a graduate program leading to the degree of Doctor of Philosophy must have either a Master's degree or a four-year Bachelor's degree or the equivalent; his or her academic standing should be unquestionably superior.
Possession of the minimum requirements does not ensure acceptance.
Applications will be received from students in their final undergraduate or Master's year, but acceptance will be conditional until a satisfactorily completed undergraduate record is submitted and added to the student's file.
Candidacy: Admission to graduate study does not imply admission to candidacy for a degree. Admission to candidacy for the degree of Doctor of Philosophy is granted by the Dean of Graduate Studies and Research, upon recommendation of the area of study concemed, when a student has satisfied the requirements for candidacy of the Faculty of Graduate Studies and Research and of the area of study, as these may be specified in subject area listings in the Graduate Calendar. Admission to candidacy is normally to be regarded as recognition that a student has given adequate evidence of superior capability and achievement in graduate study. A student may not be admitted to candidacy for the degree of Doctor of Philosophy before passing a comprehensive examination in the field of specialization.

## PROGRAM REQUIREMENTS

Residence: Residence requirements are intended to provide for each student an adequate contact with the University, with the faculty in the field of specialization, and with the library, laboratories, and other facilities for graduate study and research. Every student in a program leading to the degree of Doctor of Philosophy must be registered in a full-time program of study for a minimum of three (normally consecutive) calendar years. Credit for one of these years may be given for time spent in a Master's degree program.

Credit for no more than one-half of the required courses for a program taken at another university may be given at the discretion of the Faculty of Graduate Studies and Research, upon recommendation of the program co-ordinator.
A full-time residence year indicates that a student is engaged in full-time study under the direction of a faculty member of the University of Windsor. Persons who lecture more than three hours a week or who demonstrate in laboratories to such an extent that the total time spent in preparation, demonstration and working exceeds ten hours a week cannot qualify for residence credit.
Time Limit: A student admitted to a Ph.D. program requiring full-time attendance for three years must complete all requirements for the Ph.D. within seven consecutive years.
A student admitted with one year's advanced standing (e.g., holders of Master's degrees) must complete all requirements within six consecutive years.
A student who has reached the time limit must address a petition to the Dean of Graduate Studies and Research in order to continue, giving reasons for the request and plans for the completion of the work. A recommendation will be requested from the student's advisor. A student who exceeds the time limit may be required to take additional qualifying examinations or additional course work, or both.
Course of Study: Course requirements are specified in the subject area listings given in the Graduate Calendar. Planning and direction of the student's course of study are the responsibility of a designated advisor. Aspecific program of study should be worked out at the time of the student's first registration, in consultation with a designated advisor.
Since in several subject areas only a few of the courses listed will be offered each year, students are advised to inquire from a designated academic advisor as to which courses will be offered in any given year. Students are directed to obtain the approval of the program co-ordinator or desig-
nated advisor for changes in the program of study.

### 11.4.2 THE MASTER'S DEGREE

## ADMISSION REQUIREMENTS

Graduates of recognized colleges or universities may be admitted to programs leading the Master's degree. Astudent with a fouryear Bachelor's degree or its equivalent, with standing in at least the $B$ range overall in both the final year and in the major subfect, may be admitted to a one-year Master's program (II Master's Candidate). A student with a general Bachelor's degree, with standing in at least the $B$ range in the final two years and in the major subject, may be admitted to a two-year Master's program (I Master's Qualifying, followed by II Master's Candidate). A student with a four-year Bachelor's degree in a related (but different) subject may sometimes be admitted to a two-year Master's program at candidate level (two-year II Master's Candidate), provided the student has sufficient related credits and meets all other requirements for admission.
Applicants are urged to apply as early as possible to enable the area of study and the Faculty of Graduate Studies and Research D evaluate the student's qualifications, and lor the area of study to work out a program. Possession of the minimum requirements does not ensure acceptance.
Candidacy: A student in a one-year or twoyear II Master's Candidate program is also a candidate for the Master's degree. Students who have been admitted to a I Maser's Qualifying program are not admitted to candidacy until they have satisfactorily compleled the I Master's program. A positive recommendation from the area of study and approval of that recommendation are required for a student to proceed to the II Master's Candidate program.

## PROGRAM REQUIREMENTS

Residence: Residence requirements are inlended to provide for each student an adequate contact with the University, with the faculty in the field of specialization, and with
the library, laboratories, and other facilities for graduate study and research. It is expected, therefore, that every student in a program leading to the Master's degree will undertake a full program of study for a minimum of one calendar year or its equivalent. Application and interpretation of the residence requirement is the responsibility of, the Dean of Graduate Studies and Research. If a student does not expect to fulfill the residence requirement in the normal way, reasons for requesting a departure from the norm should be submitted in writing to the Dean and approval secured for the plan before beginning the graduate program. See also the section on "Duration of Study" below.
This requirement is not intended to apply to students admitted to graduate programs on a part-time basis.
Duration of Study: The normal minimum duration of study for the Master's degree is one calendar year beyond the four-year Bachelor's degree, or its equivalent. Credit for no more than one-half of the required courses for the program, taken at another university, may be given, at the discretion of the Faculty of Graduate Studies and Research, upon the recommendation of the program co-ordinator.
Time Limit: Work on a Master's degree must be completed within three consecutive calendar years after the student's first registration, except for certain Master's programs available on a part-time basis. In these latter programs, the time limit will depend on the nature of the program, but will not generally exceed five consecutive years. Please consult individual subject area regulations for information concerning the time limit of programs given on a part-time basis.
A student who has reached the time limit must address a petition to the Dean of Graduate Studies and Research in order to continue, giving reasons for the request and plans for the completion of the work. A recommendation will be requested from the student's area of study. A student who exceeds the time limit may be required to take additional qualifying examinations or additional course work or both.

Course of Study: Course requirements are specified in the subject area listings given in the Graduate Calendar. Planning and direction of the student's course of study are the responsibility of a designated advisor. Aspecific program of study should be worked out at the time of the student's first registration, in consultation with a designated advisor. Students are directed to obtain the approval of the program co-ordinator or designated advisor for changes in the program of study.

## 12 AWARDS AND FINANCIAL AID

Awards and other forms of aid available to undergraduate students are listed below and are organized as follows:
12.1 outlines various procedures and regulations as they pertain to awards administered by the University;
12.2 summarizes entrance and in-course awards;
12.3 describes in detail awards administered by the University;
12.4 describes in detail awards not administered by the University, but available to its students;
12.5 describes the Ontario Student Assistance Program;
12.6 lists loans and other forms of aid.

### 12.1 Procedures and Regulations

The undergraduate awards program of the University is administered by the Student Awards Office under the guidance of the Committee on Student Awards (Undergraduate).
The University directly administers only those awards whose terms are deemed to be in harmony with the interests of the University as an academic institution and compatible with the intent of the Ontario Human Rights Code and the Canadian Charter of Rights.

### 12.1.1 DEFINITIONS

The term "Award" is a general designation applied to any citation, medal, gift or grant of money presented to a student.
Entrance Awards are made to students entering the University directly from secondary school.
In-Course Awards are made to students who are registered in second year or beyond.

Scholarships are awards made in recognition of academic excellence and general proficiency. They may take the form of a monetary allowance or a proficiency medal or in some cases both.
Prizes are awards made in recognition of outstanding scholastic achievement or proficiency in a specific area.
Bursaries and Grants are monetary awards made on the basis of satisfactory standing and financial need.
Loans to assist with emergency financing are available to students with satisfactory scholastic standing who demonstrate financial need. Loans are repayable according to the terms of a definite agreement.

### 12.1.2 CRITERIA

In addition to satisfying the conditions of each award as specified in the individual descriptions, the following general criteria appy:
Academic: Applicants for entrance awards must have First-Class Honours standing or the equivalent as determined by the University. The student's secondary record will form the basis for determining awards.
Candidates for in-course bursaries must have completed at least one term of full-time study at this University, with a minimum cumulative average of 5.0.
Course Load and Continuous Study: Normally, recipients of entrance awards must enrol in the University for the academic year immediately following the conferring of the award.
Except in cases of scholarship medals and prizes, or unless otherwise specified in the description of the award, recipients of awards must be registered as full-time students during the academic session for which the award is intended.
Normally, the monetary benefits of the award are forfeited if the student withdraws from the University or fails to maintain fullfime registration before the end of the academic year for which the award is given.

Since the University operates on a threeterm system for some programs, an academic year will be defined as two terms; continuous study will be defined as a minimum of two terms out of three.

### 12.1.3 APPLICATION PROCEDURES

Open Entrance Scholarships: Other than application for admission to the University, no application for "Open Entrance Scholarships" is required. Students who wish to be considered must, where applicable, have met the specified deadline dates for auditions, portfolio evaluation, etc., and must have complete admissions applications on file in the Registrar's Office by March 1st for Fall entry.
For applications received after this date, awards will be offered only if funds are available.
For specific procedures pertaining to individual entrance Competition Awards administered by the University, see 12.3; for those not administered by the University, see 12.4.
In-Course Awards: For in-course and general awards assigned on the basis of academic proficiency, no application is necessary unless indicated in the description of the awards.
In-Course Bursaries: For in-course bursaries which involve consideration of financial status (as well as academic and/or other factors), a general "Application for Bursary Assistance" must be filed. Apply early. Funds are limited.

### 12.1.4 ASSIGNMENT PROCEDURES

Entrance awards are generally offered to candidates at the time of the offer of admission to the University.
The deadline for acceptance of entrance awards is June 1st.
Decisions on most in-course awards are made prior to November 30 of the year in which the award is applicable.
Awards administered by the University will be made by the Committee on Student

Awards to qualified candidates of merit and may be withheld if no candidates of merit present themselves.
The University reserves the right to substitute all or part of its award by an equivalent award or awards.
The University does not guarantee any award other than those created from the funds of the University. Those awards which are the gifts of outside donors are awarded only after the funds actually have been received.

### 12.1.5 PAYMENTS OF FUNDS

Unless otherwise indicated, all awards administered by the University will be credited to the recipient's tuition account at the University through the Office of the Director of Finance. Funds will be credited to the student's account one term at a time, provided that the recipient is continuing in courses to the satisfaction of the University. If satisfactory standing and/or a full course load are not maintained, payment may be withheld. Cheques for the remaining balance, if any, will be available from the Cashier after October 31 (Fall term), after February 28 (Winter term), or after July 23 (Summer term).

### 12.1.6 MULTIPLE AWARDS

The monetary benefits of awards administered by the University will be determined in relation to what is available to the student from other awards which the student accepts.
A student may be declared the winner of as many scholarships as he or she may win as a qualified candidate of merit, but in the case of awards involving a major financial amount, such student nomally will receive only the largest among these major amounts.

### 12.1.7 RENEWABLE AWARDS

Some scholarships may be renewed for a maximum of three additional continuous years providing that the student carries a full
academic load and maintains a cumulative average of at least 10.5 .
In the event that a recipient fails to meet these requirements, he/she will lose the scholarship for the ensuing year, but may regain it in a subsequent year.

### 12.2 Summary of Awards

### 12.2.1 ENTRANCE AWARDS

The entrance awards program at the University of Windsor was established to recognize academic achievement and to encourage superior applicants to pursue further study. The awards are financed by funds donated by Assumption University, the Alumni Association, the Faculty Association, and various other sponsors. There are three types of entrance awards: Open Scholarships, Competition Awards, and Other Awards.

## Open Scholarships

Criteria: Students entering Year 1 from $O n$ tario secondary schools with first-class standing (at least $80 \%$ on their best six OAC credits) are considered regardless of their choice of program. Permanent Residents and Canadian citizens from other provinces are also given this consideration.
Value: Awards range in value from $\$ 500$ to $\$ 12,000$, depending on the qualifications of the applicant. Major awards are renewabio for up to three additional years, providing first-class standing is maintained. Lesser awards are of one year's duration.
Application: For open entrance scholarships, no formal application other than for admission to the University through the Ontario Universities' Application Centre is required. Students who wish to be considered must have complete admissions applications on file in the Registrar's Office no later than March 1st for Fall entry. For applications received after this date, awards are offered only if funds are available.

Notification: Entrance awards are generally offered to candidates at the time of the offer ofadmission to the University.

## University of Windsor Residence Awards-Entrance

(For details, see 12.3.)
University of Windsor Community Scholars Awards
(For details, see 12.3.)

## Competition Awards

The following awards, each valued at $\$ 1,000$ (credited to Year 1 tuition) are available to all entering students who choose to participate in the competitions indicated. Candidates are generally required to have at least a B (70\%) standing in the subjects required for admission and must provide a transcript of their secondary school record. Candidates will normally be notified of committee decisions at the time of the offer of admission to the University.
For details of individual awards, please refer to section 12.3.

Thomas Adams Scholarship in Urban Studies and Planning
Entrance Scholarship in Chemistry and Biochemistry
Faculty of Human Kinetics Entrance
Award
Frances Hyland Entrance Award in
Dramatic Art
J. Francis Leddy Entrance Scholarship in Music
Marshall McLuhan Scholarship in Communication Studies
W. O. Mitchell Entrance Prize in English Composition
Faculty of Nursing Entrance Award La Bourse d'Entrée Pierre Potier, S. J., en Composition Française
Visual Arts Entrance Award in Studio Art and Art History
Adele Wiseman Poetry Award

## Other Awards

The following other entrance awards are administered by the University and involve special qualifications and/or assignments; see 12.3 for details:

Alumni Entrance Scholarship Joan Boase Entrance Award in Political Science
E. D. Briggs Entrance Award in Intemational Relations
CAP High School Physics Prize Examination Entrance Scholarship Michael Hung Hang Chiu Memorial Entrance Award
Norah Cleary Entrance Awards
Shaughnessy Cohen Memorial Scholarship
Deans of Social Science Entrance Awards Graybiel Entrance Scholarships
Patrick F. and Elsie J. Horwood Bursary Fund
Ron. W. Ianni Entrance Scholarship
Agnes M. Ireland Awards
The Jackman Scholarship Awards
Terence Keenleyside Entrance
Scholarship in International Relations
John B. Kennedy Memorial Entrance Awards
Robert Krause Entrance Scholarship in Political Science
Robert E. Krivoshein Entrance Bursary in Business Administration
Yves Landry Memorial Scholarship
Arthur W. Marsh Memorial Award
The Odette Family Entrance Awards in Business Administration
O.A.S.W. John Barnes Memorial Bursary

Ontario Professional Engineers Foundation for Education Entrance Scholarships
Ouellette/Yamaha Scholarship
Howard Pawley Entrance Award in Political Science
President's National Alumni Incentive Scholarships
President's Women in Science Scholarship
Trevor Price Entrance Scholarship in Public Administration
The Honourable Paul I.B. and Mrs. Tevis Staniszewski Bursaries

Ron Todgham Memorial Scholarship Fund Mary Turner Branch \#255 Royal

Canadian Legion Memorial Bursaries
University of Windsor Faculty and Staff
Scholarships-Faculty Association Scholarship Fund
Ronald Wagenberg Entrance Scholarship in Political Science
Windsor-Essex County Real Estate Board Bursary
Women's Studies Entrance Scholarship
The following other entrance awards are not administered by the University; see 12.4. for details:

## Brian Briggs Memorial Award

Bill Eansor Award
Essex Terminal Railway Company Award
Clancy Fisher Scholarship
Faculty of Human Kinetics Alumni Scholarship
Ed Lumley Entrance Award
Siro Martinello Memorial Bursary
Music Entrance Scholarships
Physics Faculty Entrance Scholarship
Ukrainian Women's Organization of
Canada (Windsor Branch) Award
Windsor and District Labour Council Bursaries
Windsor Roseland Rotary Club Scholarships

### 12.2.2 IN-COURSE AWARDS

University of Windsor Residence Awards-In-course
(For details, see 12.3.)
Many of the in-course awards described in detail in 12.3 are open to students in all courses of study. Others are restricted to certain disciplines; as a convenience, these restricted, in-course awards are indexed below:

## ARTS

Alumni English Honours Award
Ana Bèsné Prize in Classical and Modern
Languages, Literatures and Civilizations
Faculty of Arts Memorial Awards

La Bourse des Anciens du Département de Français
Edith Ellen Bowlby Scholarship in Canadian Literature
Edith Ellen Bowlby Scholarship in Creative Writing
Giovanni Cáboto Club Scholarship in Italian Studies
Canterbury College Guild Prize \#1
Dr. Marie Caron Memorial Scholarship
Helena M. Coyle B.A. Prize in English
Joseph T. Culliton Award in the Humanities
John N. Deck Memorial Prize in Philosophy
German Canadian Business and
Professional Association Prize
Rev. W.H. Godden Bursary
Hoffman Prize
Phyllis Shapiro Hurwitz Memorial Prize in Philosophy
Rev. Dr. F. T. Kingston Scholarship
Ken Long Memorial (OPUS) Award
Joe Mattson Memorial Award
Ernest and Angèle Renaud Memorial Award
Major H. P. Swan Prize in Philosophy
Paul Ernest Vandall Memorial Award
Edward and Marcia Winbaum Memorial Awards
Adele Wiseman Poetry Award
Rose Wunder Scholarship for Excellence in English

## BUSINESS ADMINISTRATION

## Algoma Steel Award

Arthur Andersen LLP BCU Award
Scott Arthurs, C.A. Memorial Award
Benson Financial Group, Clarica Life Award
Blonde and Little Insurance Ltd. Award
Faculty of Business Administration Gold Brick Fund
C.G.A. Association Award for Excellence
C.T. Residence Scholarship
J.R. Calcott Memorial Fund

Cambridge Shopping Centres
Scholarship in Marketing
The Centre for Learning in Retirement (a project of Uni-Com) Award
Commerce Class of '55 Alumni Awards

Commerce Class of '61 Alumni Awards commerce Class of '64 Bursaries Walter and Gail Crassweller Bursary William G. Danby Memorial Bursary Deloitte \& Touche Award Emst \& Young Scholarship Essex-Kent Chartered Accountants Association Award Aileen and Eli Goldin Memorial Awards Bill Harvie Endowment Fund Robert J. Humphrey Award H. J. G. Jackson Award in Salesmanship Japanese Student Scholarships
D. Ross Johnston Award

Ross Johnston Bursary
Milton M. Kovinsky Memorial Scholarship Yves Landry Scholarship in Business Administration Patricia Lauzon Award Ben Matthews Prize in Business Administration
David Moore Memorial Scholarship E.G. Odette Award in Business Administration
Mary Penfold Award
PricewaterhouseCoopers Award in Accounting
H. A. Scarff Memorial Prize

Society of Management Accountants Award
Nelson Soulliere Scholarship in Business
Administration
Ron Todgham Memorial Scholarship Fund

DRAMATIC ART
Dramatic Art Scholarships
Daniel Patrick Kelly Award in Dramatic Art Myrtle Kennedy Memorial Award Claire Kire Memorial Bursary Thomas R. McDonald Award Jessica Sue Rogers Pauzé Award Theatre Alive Scholarship University of Windsor Women's Auxiliary of Dramatic Art Fund

## EDUCATION

Alpha Chapter, Delta Kappa Gamma Scholarship Faculty of Education Awards

Faculty of Education Most Valuable Student Award
E. Nora and Helen Golden Residence Scholarship
Buz Manojlovich Bursary
Ontario English Catholic Teachers' Federation Award
Ontario Secondary School Teachers' Federation Award
Order of Alhambra Scholarships
Rotary Club of Windsor Award

## ENGINEERING

Tom Akeley Memorial Award
Frederick Atkins Scholarships
Guy Ballard Awards
C.T. Residence Scholarship

Canadian Society of Petroleum
Geologists Student-Industry Field Trip
Canadian Society of Petroleum Geologists Undergraduate Award
Michael Hung Hang Chiu Memorial Scholarships
Civil and Environmental Engineering Alumni Award
Civil and Environmental Engineering Alumni Scholarships
Consulting Engineers of Ontario- Essex Kent Chapter Award
Electrozad Foundation Scholarship
Engineering Scholarships-Meda Limited
Frank J. Ewasyshyn Electrical Engineering Award
Peter Fast Memorial Bursaries
Peter Fast Memorial Scholarships
Greater Windsor Home Builders Association Bursary
Tonnie Kovinsky Memorial Scholarship
Reverend E.C. LeBel Award
Carlo and Domenica Liburdi Memorial Award
LMI-Diffracto Award for North Scholars
Cameron Macinnis Undergraduate Award
Guru P. Mathur Memorial Fund
Teresa Merto Memorial Fund
C. William Morgan Scholarship

National Association of Corrosion Engineers Prize
Ontario Power Generation University Engineering Award

Ontario Professional Engineers
Foundation for Education Medal of Academic Achievement
Ontario Professional Engineers
Foundation for Education
Undergraduate Scholarships
Dr. J. Gordon Parr Award in Industrial Engineering
Mary Penfold Award
Charles H. Ramin Memorial Prize
Rockwell International Bursary in Civil and Environmental Engineering
Siemens Canada Limited Scholarship
Society of Chemical Industry Merit Awards
Tony Soda Memorial Scholarship
Tony Soda Memorial Prize
Student Engineering Society Award
AVM J.A. Sully and Branch 109 R.C.L. Lancaster Scholarship
Elizabeth Ellen Tilston Memorial Fund
Frank Veltri Award
Frank Veltri Scholarships
Windsor-Essex County Engineering Week Award
Xerox Canada Scholarships

## HUMAN KINETICS

Michael W. Ayris Memorial Award
Michael W. Ayris Millennium Scholarship
Faculty of Human Kinetics Alumni Scholarship
William Hunter Jr. Memorial Scholarships
Dr. Richard Moriarty Bursary
Mary O'Brien Memorial Scholarships
Kit-Man Siew Bursary
South West Area Recreation Guild Bursary Award

## LAW

Access to Justice Bursaries
Roland J. Baldassi Memorial Fund
Bartlet \& Richardes LLP Centennial Award for Academic Excellence
Bereskin and Parr Prize in Industrial and Intellectual Property
Blake, Cassels, and Graydon LLP
Entrance Scholarships
Blake, Cassels, and Graydon LLP. Award
Blake, Cassels, and Graydon LLP Prize

Borden, Ladner, Gervais LLP Advocacy Awards
Borden, Ladner, Gervais LLP Prize in Taxation
Raymond E. Brown Alumni Prize in the Law of Torts
CCH Prize for Legal Writing
Canada Law Book Limited Awards
Carswell Prize
Cassels, Brock \& Blackwell Centennial Prize in Constitutional Law
Cassels, Brock \& Blackwell Centennial Prize in Practical Skills
Charles J. Clark Memorial Award
Charles J. Clark Scholarship in Law
Class of 1997 Award
Philip J. Courey, Sr. Annual Bursaries
Delos Rogest Davis K.C. Memorial Award
R. Lawrence De Shield Memorial Award in Municipal Law Studies
Essex Law Association Centennial Scholarship
Fasken Martineau DuMoulin LLP Achievement in Contract Law Award
Fasken Martineau DuMoulin LLP Achievement in Law Award
Harold G. Fox Bursaries
Alvin D. From Bursary
Alvin D. From Memorial Scholarship in Civil Procedures
Gavel Award
Barbara Gesell-Ferreira Memorial Award
Alex Fraser and Eva Shumer Goldberg Scholarship in Law
Brad Hodgson Memorial Award
Ron W. Ianni Entrance Scholarship in Law
Ron. W. Ianni / University of Windsor Alumni Scholarship in Law
Igor Kaplan Memorial Award
Koskie Minsky Prize in Labour Arbitration
Law Alumni Annual Bursaries
Faculty of Law Community Service Award in Memory of Reinhart Lehman
Faculty of Law Prize in Professional Ethics and Conduct
Law Society of Upper Canada Education Equity Awards
Judge Bruce J.S. Macdonald Awards in Criminal Advocacy
Rae Marcus Scholarship
John McAuliffe Memorial Award
McCarthy, Tétrault Prizes

Brian E. Mcintyre, Q.C. Memorial Award in Criminal Justice
Judge Joseph P. McMahon Award in Administrative Law
McMillan Binch Award
McTague Law Firm LLP Awards
Teresa Merlo Memorial Fund
Joseph Micallef Memorial Award in Family Law
Miller, Thomson LLP Bursary Program Frank J. Montello, Q.C. Bursary Max N. Mousseau, Q.C. Memorial Award in Municipal Law
Ogilvy Renault Award
The Osgoode Society Legal History Book Prize
Osler, Hoskin \& Harcourt LLP Prize
Raphael Partners LLP Award in Insurance Law
John H. Rodd KC Awards in Conflicts
Newton Rowell Scholarships
Mary Anne Sanderson Award
Seymour Howard Schott Memorial Bursary
Scotiabank Awards
Smith, Lyons LLP Prize in Civil Trial Advocacy
Smith, Lyons LLP Prize in Securities Regulation
Michael Steinmetz Memorial Award Stikeman Elliott/Carswell National Tax Award
Stitt Feld Handy Houston Award in Legal
Process
Sutts, Strosberg LLP Awards in Labour Law
Honourable Walter S. Tarnopolsky Award
Torkin Manes Cohen and Arbus LLP
Award
J.S.D. Tory Writing Awards University of Windsor Law Entrance Awards
Dorothy Waddicor Award in ADR
Joel Wargon Memorial Award
Frank W. Wilson and Marion Claire
Wilson Memorial Scholarship in
Constitutional Law
Robert H. Wilson Memorial Awards
Windsor Review of Legal and Social Issues Prize
Ben Yuffy Award in Business
Organizations

Ben Yuify Memorial Award Zuber Moot Factum Awards
Thomas F. Zuber Mooting Trophy and Prizes

## MUSIC AND MUSIC THERAPY

Percy Beneteau Memorial Bursary
Edith Margaret Bowlby Scholarship in Music
Ellen Marion Valentine Bowlby
Scholarship in Music
Hellen Veldora Bowlby Scholarship in Music
H. Whorlow Bull Scholarship in Choral Conducting
Stanley J. Clench Bursary in Music
Nellie Anne Dagger Memorial
Scholarship in Music Theatre
Friends of Music Award
Hadassah-WZO of Windsor-Mina
Grossman-lanni-Woman of Distinction Scholarship
William M. Holmes Memorial Prize
Arlene Janzen Memorial Scholarship
Clyde Long/Windsor Community Choir Bursary
Alexander and Mary MacDonald Award
Music In-Course Scholarships
Ontario Provincial Chapter IODE Music Scholarship
Ouellette/Yamaha Scholarship
Barbara Parry Memorial Award
Rotary Club Scholarship in Memory of
Reginald H. Darke
Jacqueline Valentino Percussion Award
Windsor-Essex County Branch, Ontario
Registered Music Teachers Association
Award
Windsor and Essex County Municipal Chapter IODE Award in Brass
Windsor Federation of Musicians Scholarship
Xerox Canada Scholarships

## NURSING

Addison-Wesley Book Awards
Alumni Nursing Awards
Mary Clarke Berry Award
Canadian Nursing Students' Award

Gerontological Nursing Association Achievement Award
Jennifer Gignac Memorial Award
Alex Fraser and Eva Shumer Goldberg Memorial Award in Nursing
Anna Gupta Award
Harcourt Brace \& Co. Canada Health Science Scholarship
Johnson and Johnson Leadership Award
Ethel Knister Memorial Grant
Isidoro Marcocchio Memorial Bursary
Dr. N.A. McCormick Chapter I.O.D.E. Bursary
Glenda Ristimaki Memorial Bursary
Florence M. Roach Award
St. John Ambulance Association of Canada Bursaries
Elena K. Toulouse Memorial Award University of Windsor Women's Auxiliary Bursary in Nursing
Volunteer Association of Hotel-Dieu Grace Hospital Bursary
W. D. West Memorial Scholarship in Nursing
White Sister Apparel Inc. Jules Stuchen/RNAO Scholarship

## SCIENCE AND COMPUTER SCIENCE

Guy Ballard Awards
Andrew Douglas Bowlby Scholarship in Biology
Dr. Phyllis Bradshaw Award
Canadian Society for Chemistry Prize
Canadian Society of Petroleum Geologists Student-Industry Field Trip
Canadian Society of Petroleum Geologists Undergraduate Award
Chemistry and Biochemistry Memorial Prizes
Nicholas Copernicus Scholarships in Physics
Dr. Roy J. Coyle Memorial Prize in Biology
Dr. Roy J. Coyle Memorial Prize in Physics
P.A. Della Valle Senior Undergraduate Award in Economics
Rev. John R. Dougherty C.S.B. Award Father Faught Memorial Bursary Fund Geological Association of Canada Prize Conrad P. Gravenor Memorial Scholarship

Robert Kingsley Jull Memorial Scholarship in Geology
Dr. N.A. McCormick Chapter I.O.D.E. Bursary
Mineralogic Association of Canada Student Prize
National Sciences and Engineering Research Council Undergraduate Student Research Awards Ontario Petroleum Institute Award
Petro-Canada Education Awards for Native Students
Charles H. Ramin Memorial Prize
Society of Chemical Industry Merit Awards
Elizabeth Ellen Tilston Memorial Fund
Paul Ernest Vandall Memorial Award
Frank Veltri Award
Frank Veltri Scholarships
Edward and Marcia Winbaum Memorial Awards
Peter Wyzinski Sr. Memorial Award
Xerox Canada Scholarships
Elias Zakon Memorial Scholarship

## SOCIAL SCIENCES

## Guy Ballard Awards

David P. Botsford Memorial Scholarship Andrew Douglas Bowlby Scholarship in Geography
Bruce Burton International Relations Scholarship
Canterbury College Percy C. Graham Book Prize
Canterbury College Guild Prize No. 1
Douglas Davies Memorial Bursary
Professor Adolf Ehrentraut Award in Mesoamerican or Latin American Studies
Professor Adolf Ehrentraut Bursary-Exchange Program in Sociology
Zbigniew Fallenbuchl Memorial Intemational Relations Scholarship
Rudolf A. Helling Memorial Award
I.O.D.E. Windsor \& Essex County Municipal Chapter Centennial Award Japanese Student Scholarships
Akira Kubota Scholarship in Political Science
Joe Mattson Memorial Award

Dr. Margaret S. Mattson Memorial Scholarship Ralph Nelson Scholarship in Political Science
Oxford University Press Public
Administration Book Award
Philosophy Alumni Undergraduate Bursary
Public Administration Scholarships Richard Price Scholarship in Political Science
Rotary Club of Windsor Communication Studies Award
Dr. Ripu and Joan Singh Prize of Excellence
Walter C. Soderlund Award in Political Science
University of Windsor Social Science
Society Awards
Dr. Milorad Vuckovic Memorial
Scholarship Fund
David Wurfel Scholarship in Political Science
John Yanchula Memorial Scholarship
SOCIAL WORK
Valentin J. Cruz Memorial Bursary
Gerald D. Erickson Bursary
Christine Dawn Hemandez Memorial Bursary
Raechel Slobasky Kaplan Social Work Bursaries
Margaret Alsobrook McManus Prize
Stewart Moore Bursary
O.A.S.W. John Barnes Memorial Bursary Dean Ruth Scholarship in Social Work
Dale Swaisgood WGTP Book Prize
VISUAL ARTS

Hellen Veldora Bowlby Scholarship in Fine Ats
Mary DeMarco Scholarship in Visual Arts
Jill Dynan-Perry Memorial Bursary
Willam M. Holmes Memorial Prize
Marica Janisse Bursary
Dennis W. Knight Award of Excellence in
Visual Arts
John Kenneth Pufahl Memorial
Scholarship for Printmaking

Peter K. Ryan Scholarship
University of Windsor Women's Auxiliary Award in Visual Arts
Irving Wayne Memorial Award in Visual Arts
Windsor Printmakers' Forum Printmaking Bursary
Xerox Canada Scholarships

## PART-TIME STUDENTS

Industrial Management Clubs of Canada Awards
Ken Long Memorial (OPUS) Award
Organization of Part-Time University Students (OPUS) Academic Achievement Awards
Organization of Part-Time University Students (OPUS) Bursary Awards University of Windsor Bursaries for Part-Time Undergraduate Students

### 12.3 Details of Awards Administered by the University

(listed alphabetically by title of award)

## Access to Justice Bursaries

Twenty bursaries, valued at $\$ 400$ each, awarded annually on the basis of financial need and academic merit, to students registered in the first, second, and third years of law. An average of 6.5 or greater is a prerequisite for consideration of applications from second- and third-year students.
The bursaries have been established through the support of the Law Foundation of Ontario, and reflect its continuing commitment to support deserving and needy students in their efforts to obtain a legal education. Applications available in the Faculty of Law.

## Addison-Wesley Book Awards

Two awards, annually, to outstanding students enrolled in a degree program in Nursing. Automatic. No application required.

## Thomas Adams Scholarship in Planning

(See University of Windsor Entrance Awards.)

## Tom Akeley Memorial Award

Value: $\$ 1,000$. Awarded annually on the basis of character, scholastic potential, and demonstrated financial need to any student of Engineering selected by the Dean of Engineering. Established in 1986 in memory of Prof. T.C. Akeley of the Faculty of Arts, who took an interest in the academic development of Engineering students that extended far beyond the norm. Deadline: January 31.

## Algoma Steel Award

The interest eamed each year will be paid to the student team from either the 74-439 (Marketing Strategy) course or 74-639 (Advanced Marketing Strategy) course, judged to have completed the best Marketing Strategy Report for Algoma Steel. Automatic. No application required.
Allied Domecq Spirits \& Wine (Parent Company of Hiram Walker) Scholarships
Interest from this fund will provide annual awards to students with a minimum cumulative average of 10.0 in Year 2, 3, or 4 of any degree program. Automatic. No application required.

## Alpha Chapter, Delta Kappa Gamma Scholarship

An annual award to a female student, with a background in Visual Arts, Performing Arts, or Drama in Education, entering the Faculty of Education. Awarded on the basis of academic performance and financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: October 31.

## Alumni English Honours Award

An annual award of \$100, on the basis of academic merit, to a student entering Year 2 of an Honours B.A. program and majoring in English. Automatic. No application required.

## Alumni Entrance Scholarship

Value: $\$ 5,000$ ( $\$ 1,250$ a year, renewable for three additional years), to an outstanding student entering Year 1. Automatic. No application required.

## Alumni In-Course Bursaries

Value: up to $\$ 500$. One or more awards made annually to full-time students who have completed at least one term of fuil-time study at the University, with a cumulative average of at least 6.5 , and who demonstrate financial need. Deadline: October 31. (Use General Bursary application.)

## Alumni Nursing Awards

Two awards valued up to $\$ 500$ for outstanding students entering the second year of Plan I or Plan II programs. Recipients must demonstrate excellence in nursing theory and clinical nursing. Full and part-time students are eligible for these awards. Automatic. No application required.

## Alumni Scholarships

Five awards of $\$ 500$ each, assigned annually to students in any year of any program. Automatic. No application required.

## Fred H. Anderson Memorial Bursary

(See Assumption University Awards.)

## Faculty of Arts Memorial Awards

One or more awards for deserving students enrolled in any degree program in Arts, awarded on the basis of academic standing and/or financial need. Established in 1981 in memory of Rev. E.R. Malley, C.S.B., former Dean of the Faculty of Arts. Deadline: October 31. (Use General Bursary application.)

## Assumption University and Basiliai

 Fathers Awards
## PRIZES

## Dr. Roy J. Coyle Memorial Prize in Biology

Value: $\$ 200$. Awarded annually to the student obtaining the highest standing in Year 1 Biology courses. Endowed by the late Dr. Roy J. Coyle of Windsor. Automatic. No application required.

## Dr. Roy J. Coyle Memorial Prize in Physics

Value: $\$ 100$. Awarded annually to the first-year student in Biology, Biochemistry, or Science obtaining the highest standing in the required core Physics course for Science students.

Endowed by the late Dr. Roy J. Coyle of Windsor. Automatic. No application required.

## Helena M. Coyle B.A. Prize in English Value: $\$ 200$. Awarded annually to the student obtaining the highest standing in Year 1 English courses. Automatic. No application required. <br> John N. Deck Memorial Prize in Philosophy

Value: $\$ 150$. Awarded annually to an outstanding undergraduate in an Honours Philosophy program or majoring in Philosophy. Established in 1979 by Assumption University in conjunction with friends and associates of Dr. Deck in memory of him and in recognition of his contributions to Assumption University and the University of Windsor. Automatic. No application required.

## Major H. P. Swan Prize in Philosophy

Value: $\$ 100$. Awarded annually to the student obtaining the highest average in the Philosophy courses of Year 3 or 4 of the honours program or of Year 2 or 3 of the general program majoring in Philosophy. Endowed in 1966 by the late Major H.P. Swan. Automatic. No application required.

## SCHOLARSHIPS AND BURSARIES

Assumption University awards are available to all undergraduate students of the University of Windsor. Awards are made by Assumption University on the recommendation of the Committee on Student Awards (Undergraduate) of the University of Windsor. The candidate will receive notice of the award from the Director of Student Awards of the University of Windsor acting on behalf of Assumption University. A certificate confirming the award will be presented to the candidate by Assumption University.

## Fred H. Anderson Memorial Bursary

Value: $\$ 500$. Awarded annually. Established in 1956 through the generosity of Mr. Tom Anderson and Mr. James Barth in memory of Mr. Fred H.

Anderson. Automatic. No application required.

## Father Louis J. Bondy C.S.B. Bursary

Value: $\$ 1,000$. Awarded annually. Endowed by a gift of the late Professor Henry H. Tacon and his wife. Professor Tacon was a 1924 graduate of Assumption College. Automatic. No application required.

## Dr. Marie Caron Memorial Scholarship

Awarded annually to an outstanding student entering Year 4 Honours French Language and Literature. Established in 1989 in memory of Dr. Marie Caron, Professor of French, and member of the Department from 1964 to 1988. Automatic. No application required.

## Norah Cleary Entrance Awards

Value: $\$ 2,800$. Renewable for three additional years provided satisfactory standing (a cumulative average of 10.5 or better) is maintained. A maximum of seven awards may be active in any one year. Candidates must have been attending Windsor or Essex County secondary schools for at least two years (with preference to graduates of Kennedy Collegiate) and must satisfy entrance requirements as well as show need for financial assistance. Established in 1963 through the benefaction of the late Miss Norah Cleary to Assumption University. Automatic. No application required.

## Dorothy F. Coyle and Mary Ann Coyle Janci Bursary

Value: $\$ 750$. Awarded annually to a graduate of a Roman Catholic high school in Essex County. Endowed in 1990 through the benefaction of Dorothy F. Coyle. Apply to the President, Assumption University.

## Dr. Roy J. Coyle Memorial Bursary

Value: $\$ 900$. Awarded annually. Established in 1954 through the benefaction of the late Dr. Roy J. Coyle to Assumption University. Automatic. No application required.

## Ed Girardot Memorial Bursary

Value: $\$ 400$. Awarded annually to a graduate of a Roman Catholic high school in Essex County. Established in 1956 by Assumption University in memory of the Girardot Family. Automatic. No application required.

## John B. Kennedy Memorial Entrance Awards

Value: $\$ 600$ a year, with a total possible value of $\$ 2,400$. Two awards are made annually, one to a graduate of a Canadian and one to a graduate of a United States high school. Renewable annually, provided satisfactory standing (a cumulative average of 10.5 or better) is maintained. Established in 1963 through the benefaction of the late John Bright Kennedy to Assumption University. Automatic. No application required.

## Monsignor F. X. Laurendeau Memorial Bursary

Value: $\$ 300$. Awarded annually to a graduate of a Roman Catholic high school in Essex County. Endowed in 1944 by donations from Windsor citizens as a memorial to Monsignor F. X. Laurendeau, Dean of Essex. Automatic. No application required.

## Alexander and Mary MacDonald Award

An annual award to an outstanding student registered full-time in a Music program. Established in 1989 by Marie MacDonald Renaud in honour of her parents. Automatic. No application required.

## Rev. Eugene Malley C.S.B. Bursary

One or more bursaries of value up to $\$ 2,800$ awarded annually to graduates of Roman Catholic high schools and who have a financial need. Established in 1980 with donations from faculty and friends in memory of Father Malley, former Dean of Arts, University of Windsor. Apply to the President, Assumption University.

John C. McGuire Scholarship
Value: $\$ 900$. Awarded annually to a graduate of a Windsor high school. Established in 1950 by citizens of Windsor as a testimonial to John C. McGuire of Chrysler Corporation, Windsor. Automatic. No application required.

## Donald Stuart McIntyre Bursary

Value: $\$ 400$. Awarded annually to a graduate of a Roman Catholic high school in the Windsor-Detroit area. Established in 1955 through the benefaction of Donald Stuart Mcintyre to Assumption University. Automatic. No application required.

## Frank McIntyre Memorial Bursary

Value: $\$ 400$. Awarded annually to a graduate of a Roman Catholic high school in the Windsor-Detroit area. Established in 1956 through the benefaction of Alumnus Frank McIntyre. Automatic. No application required.
Ernest and Angèle Renaud Memorial Award

An annual award to a student majoring or honouring in French, entering Year 3 or 4. Recipient must have a major average of at least 10.0. Established in 1993 by the Renaud family. Automatic. No application required.

## Archbishop Sabbah Bursary

Established in 1993 from fundraising by the Basilian Fathers, Assumption University and an Eastern Rite (Palestinian) community in the Michigain area. Financial assistance is available for the education of a student from Palestine. Apply to the President, Assumption University.

## Monsignor F. T. Sullivan Bursary

One or more bursaries of value up to $\$ 2,400$ awarded annually to a graduate or graduates of a Roman Catholic high school, in Canada or United States, (preference to be given to graduates of Notre Dame High School. Chattagnooga, Tennessee). Established in 1946 through the benefaction of

Alumnus Monsignor F. T. Sullivan, of Chattanooga, Tennessee. Apply to the President, Assumption University.

## Arthur Andersen LLP BCU Award

Two awards valued at \$1000 each are available annually to a student studying full-time in Year 4 of the Business Administration program. Students must be enrolled in at least three CA accredited courses and have already fulfilled: 70-151 and 70-152 (or equivalent from other school); 70-351 and $70-352$ or 70-256; 72-171; a minimum of one other CA accredited course. Students must have at least a 10.5 cumulative average and strong leadership potential. Deadline: November 15.

## scott Arthurs, C.A. Memorial Award

An annual award of $\$ 350$ will be available to the Business Administration (Accounting) student who attains the highest academic slanding in Accounting courses in Year 3. Candidates must be a graduate of a Windsor//Essex County high school upon entering the B. Comm. program. This memorial award was established in 2000 by the family of Scott Arthurs, C.A. Automatic. No applicaion required.

## Frederick Atkins Scholarships

Two awards valued at $\$ 2,000$ each to Canadanstudents entering Years 2 and 4 respectively of Electrical Engineering. Recipients must have achieved an average of 10.5 or better in each term of the preceding year and may not concurrently hold another award of equal or greater value. Automatic. No application required.
Atkinson Charitable Foundation Bursary
The income of this fund will be used to support qualified second-, third-, and fourthyear students who demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Onlario. Deadline: October 31. (Use General Bursary application.)

## Michael W. Ayris Memorial Award

Value $\$ 700$. Awarded annually to a student enlering Year 4 Kinesiology and majoring in Movement Science, on the basis of academic standing (cumulative average of at
least 9.5) and participation in Department and/or Faculty activities. Financial need may also be considered. Established in 1987 by Mary E. Ayris in memory of her late son, Michael, an outstanding student who contributed so much to the Faculty. Automatic. No application required.

## Michael W. Ayris Millennium Scholarship

An annual award of $\$ 1,200$ for students in Year 3 or 4 of the Human Kinetics program. Students must demonstrate financial need and have extensive co-curricular involvement in Human Kinetics. Established in. 2000 by Mary E. Ayris in memory of her late son, Michael, an outstanding student, who contributed so much to the Faculty. Deadline: November 15.

## Roland J. Baldassi Memorial Fund

A fund has been established to provide support for the Roland J., Baldassi Corporate/Securities Moot Team in order to commemorate the life and work of Mr. Roland J. Baldassi, a distinguished and popular legal practitioner. Automatic. No application required.

## Guy Ballard Awards

In honour of Dr. Ballard, former President of the National Research Council, one or more scholarships of $\$ 150$ to $\$ 300$ are available to students in Mathematics, Science, Engineering, Experimental Psychology or Physical Geography. Automatic. No application required.

## Barkleys of Avonmore Bursary

Value: Annual interest on $\$ 5,000$. Awarded to a student from a Third World Country who has completed at least two terms of study at the University of Windsor, on the basis of academic standing and financial need. Established in 1979 by Fred Barkley. Automatic. No application required.

## Bartlet \& Richardes LLP Centennial Award for Academic Excellence

An annual award of $\$ 1,500$ has been provided by the partners of Bartlet \& Richardes, Barristers and Solicitors of Windsor, to the student who has achieved the highest cumulative academic average in the Bachelor of Law Program upon graduation. This rec-
ognition of excellence is in celebration of the Centennial year of the Bartlet \& Richardes law firm which was founded in 1887. Automatic. No application required.

## Percy Beneteau Memorial Bursary

An annual award of at least $\$ 2,000$ to a Year 2 or above Music major. Applicants must have a minimum cumulative G.P.A. of 8.0 and demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Preference will be given to students who demonstrate outstanding performance ability. Participation in volunteer community activities may also be a consideration. Established in 1996 by the Windsor Downtown Lions Club in memory of Mr. Beneteau. Deadline: October 31.

## Benson Financial Group, Clarica Life Award

Value: $\$ 1,000$. Awarded annually on the basis of academic standing (a minimum average of 8.5 ), and financial need, to a Year 2, 3 , or 4 Business student, majoring in Accounting, Marketing, or Finance. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1999 by Clarica Life in honour of Michael Benson, of the Benson Financial Group. Deadline: November 30.

## Bereskin \& Parr Prize in Industrial and Intellectual Property

A prize of $\$ 500$ awarded annually to the student attaining the highest standing in any industrial and intellectual property course taught at the University of Windsor. Automatic. No application required.

## Mary Clarke Berry Award

An annual award valued at $\$ 300$ to a fulltime, Post-Diploma B.Sc.N. student entering the second year of the program with the highest grade point average. Automatic. No application required.

## Ana Bèsné Prize in Classical and Modern Languages, Literatures, and Civilizations

To be awarded annually to a student majoring in Classical and Modem Languages, Literatures, and Civilizations, on the basis of a)
demonstrated academic achievement in courses at the 200 level and above, and b) service to the department. Preference will be given to students who have taken courses in more than a single area of the department. Automatic. No application required.

## Blake, Cassels, and Graydon LLP

 Entrance ScholarshipsTwo scholarships of $\$ 1,250$ each to be awarded to students entering First Year of the LL.B. program. Recipients are to be selected on the basis of academic performance; community service may also be considered. Automatic. No application required.

## Blake, Cassels, and Graydon LLP. Award

One award annually, valued at $\$ 5,000$, will be available to a student in Law II (may be renewable for Law III). Blake's Scholars will be in the top 10\% of their Law I class. Additional consideration may include student's involvement in community or extra-curricular university activities, financial need, membership in an historically disadvantaged group, and other family responsibilities. Application forms available in the Faculty of Law.

## Blake, Cassels, and Graydon LLP Prize

A prize of $\$ 500$ awarded to the graduating student in the Faculty of Law who has achieved the highest standing in those subjects falling within the corporate/commercial study of Law (Business Associations, Commercial Law, Corporate Topics, Commercial Topics, Taxation, Securities Regulation, Corporate Finance).

## B'Nai Brith Nathan Cheifetz Foundation Bursary

Value $\$ 250$. Awarded annually on the basis of financial need and academic merit to a resident of Essex County. Deadline: October 31. (Use General Bursary application.)

## Board of Governors Medals

Awarded annually to students graduating with the highest standing in each of several academic areas. Candidates must have cumulative and major averages of at least 10.5. Graduating recipients must have taken at least twenty courses at the University of

Windsor; students in course must have aken at least ten courses at the University of Windsor. Automatic. No application required.
Joan Boase Entrance Award in Political Science
Awarded annually to an outstanding female secondary school student entering Political Science. Automatic. No application required.

Father Louis J. Bondy C.S.B. Bursary (See Assumption University Awards.) Borden, Ladner, Gervais LLP Advocacy Awards

Two $\$ 500$ awards granted annually by the aw fim of Borden, Ladner, Gervais LLP to the two upper-year law students judged by the presiding panel to have demonstrated the highest advocacy skills in the championship round of the Zuber Moot Court CompeIfion. Automatic. No application required.
Borden, Ladner, Gervais LLP Taxation Prize
Aprize of $\$ 200$ to the student in the Faculty d Law achieving the highest grade in Taxafon I. Automatic. No application required.
David P. Botsford Memorial Scholarship
Value: $\$ 900$. Awarded to a student regislred in Year 4 Honours History who has a superior academic record and has demonstrated an interest in local area studies. The awardee will be expected to prepare an original research paper under the direction of the Department of History, and to present this paper publicly at the request of the David P. Botsford Memorial Committee. Established in 1979 in memory of David P. Botsford, C.M., in recognition of his lifelong service to area historical studies. Automatic. No application required.
La Bourse d'Entree Pierre Potier, S.J., en Composition Française
(See University of Windsor Entrance Awards.)

## La Bourse des Anciens du Département

 de FrançaisAnnual bursary of \$200 based on financial reed and academic performance, to a stu-
dent taking part in the Third Year Abroad program at the University of Nice. Apply to the French Department.

## Edith Margaret Bowlby Scholarship Fund

This fund, established by Miss E.M. Bowlby (Doctor of Music, honoris causa), musician and lifetime resident of the City of Windsor, provides eight awards as listed below. Recipients must be Canadian Citizens, enrolled in Year 2, 3, or 4 of an honours program in the respective area of study. Automatic. No application required.

Andrew Douglas Bowlby Scholarship in Biology*
Value: $\$ 500$. Designated for a student enrolled in Biological Sciences, for academic excellence in courses relating to ecology within the Canadian environment. Automatic. No application required.
Andrew Douglas Bowlby Scholarship in Geography*
Value: $\$ 500$. Designated for a student enrolled in Geography; awarded for academic excellence in courses relating to the Canadian environment and/or resource management. Automatic. No application required.
*Established by Miss Bowlby in memory of her father Douglas, a longtime resident of the City of Windsor and conservationist.

## Edith Ellen Bowlby Scholarship in Canadian Literature**

Value: $\$ 500$. Designated for a student enrolled in English; awarded for academic excellence in courses pertaining to Canadian literature. Automatic. No application required.

## Edith Ellen Bowlby Scholarship in Creative Writing**

Value: $\$ 500$. Designated for a student enrolled in English; awarded for outstanding creative writing ability. Automatic. No application required.
**Established by Miss Bowlby in memory of her mother Edith, a longtime resident
and patron of the arts in the City of Windsor.

## Edith Margaret Bowlby Scholarship in Music

Value: $\$ 1,000$. Designated for a student enrolled in Music who has selected the piano as his or her major instrument; awarded for academic excellence and/or performing ability. Automatic. No application required.

## Ellen Marion Valentine Bowlby Scholarship in Music

Value: $\$ 1,000$. Designated for a student enrolled in Music and awarded for academic excellence with special emphasis on composition and/or music history. Automatic. No application required.
Established by Miss Bowlby in memory of her sister Marion.

## Hellen Veldora Bowlby Scholarship in Fine Arts ${ }^{* * *}$

Value: $\$ 500$. Awarded to the most promising student in drawing and painting (with preference to works pertaining to landscape or nature) enrolled in Visual Arts. Automatic. No application required.

## Hellen Veldora Bowlby Scholarship in Music***

Value: $\$ 500$. Designated for a student enrolled in Music who has selected "voice" as his or her major instrument; awarded for academic excellence and/or performing ability. Automatic. No application required.
**Established by Miss Bowlby in memory of her Aunt Hellen, a longtime resident, music teacher, and performer in the City of Windsor.

## E. D. Briggs Entrance Award in International Relations

Awarded annually to an outstanding secondary school student entering the International Relations program. Automatic. No application required.

## Raymond E. Brown Alumni Prize in the Law of Torts

An annual prize in the amount of $\$ 250$ has been established by the Law Alumni to be awarded to the student in each year who achieves the highest grade in Torts. The prize is in recognition of the contribution made by Professor Raymond E. Brown to the Faculty and to the professional development of its students. Automatic. No application required.

## H. Whorlow Bull Scholarship in Choral Conducting

Value: $\$ 500$. Awarded to a student entering Year 3 or 4 of the Bachelor of Music or Bachelor of Music Therapy programs, who has selected choral conducting as an area of focus; awarded for academic excellence and conducting ability. Established by the family in memory of H . Whorlow Bull, noted choral conductor, music teacher, and longtime resident of Windsor. Automatic. No application required.

## Bursary in Japanese Studies

Value $\$ 1,000$. Awarded annually to a student who intends to pursue at a Japanese University, a course of studies integral to his/her degree program at the University of Windsor. Recipient must be a Canadian Citizen or Permanent Resident, must have satisfactory academic standing, must demonstrate financial need, and must have been accepted by a university in Japan. Deadline: March 15.

## Bruce Burton International Relations Scholarship

Value: $\$ 300$. Awarded annually to the outstanding student entering Year 3 of the International Relations program. Recipient must have a cumulative G.P.A. of at least 10.5 . Established in 1999 by Political Science. Automatic. No application required.

## Faculty of Business Administration Gold Brick Fund

Two or more awards valued up to $\$ 800$ for students registered in Year 2 or 3 of the Bachelor of Commerce program. Awarded on the basis of combined academic excellence and extracurricular achievement. Fur-
her information and application forms available from the Faculty. Deadline: September 30.

CAP High School Physics Prize Examination Entrance Scholarship
Value: $\$ 700$. Awarded annually to the student from a secondary school in Windsor, or inEssex, Kent or Lambton counties, who obtains the highest score in that year's High School Physics Prize Examination offered by the Canadian Association of Physicists, provided that the candidate also obtains an overall admission average of $85 \%$ in six OAC credits. Automatic. No application required.

## CCH Prize for Legal Writing

Value: $\$ 500$. Awarded annually by $\mathrm{CCH} \mathrm{Ca}-$ radian Limited to the student in the Faculty of Law achieving the highest grade in the lirst-year Legal Writing course. Automatic. No application required.

## C.G.A. Ontario Award for Excellence

Value $\$ 2,150$, consisting of a cash award of $\$ 150$ plus a credit of $\$ 2,000$ to be drawn as desired for fees related to courses in the C.G.A. study program, provided that the first draw-down occurs within eighteen months after notice to the successful candidate. Awarded annually by the Certified General Accountants Association of Ontario to a graduating undergraduate or M.B.A. student who has demonstrated academic excellence in accounting and intends to pursue he C.G.A. certificate. Automatic. No application required.

## J.R. Calcott Memorial Fund

Income from this Fund provides two $\$ 800$ awards annually; one to a student who has completed Year 3 of the Bachelor of Commerce program, entering Year 4, and one to a student who has completed Year I of the Master of Business Administration program, entering Year II. Recipients must have a cumulative average of at least 7.5 and must have demonstrated a strong interest in the area of entrepreneurship either by high school grades in related courses or by serious research. Submit letter of application
and resumé to Dean of appropriate Faculty by September 30 .

## Cambridge Shopping Centres Scholarship in Marketing

Value: $\$ 250$. Awarded annually to a student who has completed Year 3 of the Business Administration program, has an outstanding academic record and is interested in marketing as a career. Automatic. No application required.

## Campus Coolers Inc. Awards

Two $\$ 500$ awards, one to a male student and one to a female student. Applicants must be currently living in a campus residence and must have lived in residence for at least one previous year. Awarded on the basis of academic standing (at least 9.0 cumulative average) and contribution to residence life. (House council executive members and residence life staff not eligible.) Application forms available in the Office of Residence Services and the Student Awards Office. Deadline: October 15.

## Canada Law Book Limited Awards

Book awards of $\$ 150$ have been established by the Canada Law Book Company Limited for high standing in each of the three years of law. Automatic. No application required.

## Canadian Society for Chemistry Prize

Silver medal and a Certificate of Merit. Awarded to the student with the highest standing in the penultimate year of Honours Chemistry, Chemistry and Physics, or Biochemistry. Automatic. No application required.

## Canadian Society of Petroleum Geologists Student-Industry Field Trip

Made to the Year 3 student of greatest proven all-round ability in course work. The field trip provides an insight into both the geology of the Rocky Mountains and the day-to-day operations of petroleum companies. Automatic. No application required.

## Canadian Society of Petroleum Geologists Undergraduate Award

Made to the undergraduate considered to have performed outstandingly in Petroleum Geology or in closely related fields, such as

Sedimentary Petrology, Stratigraphy, Sedimentology, Paleontology, and Structural Geology, regardless of level of study. The award consists of a printed certificate, inscribed with the student's name, and a oneyear membership (active or associate) in the Canadian Society of Petroleum Geologists. Automatic. No application required.

## Carswell Prizes

Gift certificates valued at $\$ 250$ have been established by Carswell for highest standing in each of the first two years of Law, and a gift certificate valued at $\$ 500$ for highest standing in Third Year Law. Automatic. No application required.

## Cassels, Brock \& Blackwell Centennial Prize in Practice Skills

An annual prize of $\$ 500$ established by Cassels, Brock \& Blackwell, in recognition of the founding of the firm in 1888, to be awarded on the recommendation of the Dean, to the second or third year student in the LL.B. program who, through course work, clinical education or extra-curricular activities, exhibits exceptional ability in the understanding and pursuit of skills essential to a legal practitioner, such as drafting, legal writing, advocacy, research, interviewing, counselling, mediation, negotiation, legal ethics, and professional responsibility. Automatic. No application required.

## Cassels, Brock \& Blackwell Centennial Prize in Constitutional Law

An annual prize of $\$ 500$ established by Cassels, Brock \& Blackwell, in recognition of the founding of the firm in 1888, to be awarded to the second or third year student in the LL.B. program who has achieved the highest combined average in two courses, to be selected by the Dean, one course being in constitutional law, human rights or civil liberties, and the other course being in advocacy, trial advocacy, or constitutional litigation. Automatic. No application required.

## The Centre for Learning in Retirement (a Project of Uni-Com) Award

An annual award of $\$ 600$ will encourage improvement and excellence in a Business
student studying at Year 2, 3 or 4 with a cumulative average of at least 9.0 and demonstrated financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: January 31,

## Chemistry and Biochemistry Memorial Prizes

One or more book prizes awarded to outstanding students entering Year 2 of the honours or general programs in Chemistry and Biochemistry. This fund was established in 1981 by faculty, staff, and students of Chemistry and Biochemistry in memory of their deceased colleagues. Automatic. № application required.

## Captain Cletus Cheng Memorial Bursary

Investment income from this memorial fund will be used to support this annual award. Based on financial need and academic standing. Preference will be given to former military personnel or their dependents. Established in 1996 by the family and friends of Captain Cheng. Applications available through the Student Awards Office. Deadline: January 31.

## Michael Hung Hang Chiu Memorial Entrance Award

Value $\$ 750$. Awarded annually to a student entering Year 1 Engineering directly from secondary school on the basis of academic achievement and financial need. Established in 1987 through the Federation of Chinese Canadian Professionals (Ontario) Education Foundation, by the parents and family of Michael Chiu, who graduated from the University of Windsor in 1965 (Civil Engineering) and died in 1974. Application forms available from the Student Awards Office. Deadline: October 31.

## Michael Hung Hang Chiu Memorial Scholarships

Two awards, valued at \$250 each, to the Engineering students achieving the highest standing in the courses $87-314$ (Transportation and Traffic Engineering) and 87-414 (Highway Design and Construction). Established in 1987 through the Federation of Chinese Canadian Professionals (Ontario) Education Foundation, by the parents and
amily of Michael Chiu, who graduated from te University of Windsor in 1965 (Civil Engineering) and died in 1974. Automatic. No application required.

## Civil and Environmental Engineering

 Alumni AwardAvard of $\$ 500$ for an outstanding student entering Year 2 in the Civil or Environmental Engineering programs who combines scholashhip with extracurricular activities within teir University or the community at large. Supported by the continuing donations of graduates of Chemical, Civil, and Environmental Engineering. Deadline: October 31.
Civil and Environmental Engineering Alumni Scholarships
Awards of $\$ 500$ each for up to four outstanding students entering Year 2 in the Civil or Evvionmental Engineering programs. Supprted by the continuing donations of graduates of Chemical, Civil, and Environmental Engineering. Automatic. No application required.

## Charles J. Clark Memorial Award

Anannual award of $\$ 500$ made by McTague law Firm to honour the outstanding career alCharles J. Clark, Q.C., as a distinguished awyer and dedicated servant of the commuiny. The award is to be made to a Law student who has successfully completed First a Second Year, selected by the Dean and Associate Dean of Law on the basis of scholaship and personal qualities, including adherence to high personal and ethical sandards and a demonstrated commitment bserve the community. Automatic. No appication required.

## Charles J. Clark Scholarship in Law

Three annual awards to second- or thirdyear Law students who have maintained academic excellence and have demonstrated an involvement in community and volunteer activities.

## Class of 1997 Award

interest from this fund to provide an annual award to a Year 2 or 3 Law student. Award based on academic performance, financial need, and extra-curricular activities, plus contributions to the Faculty of Law. Students
must be Canadian Citizens or Permanent Residents, residing in Ontario. Applications available in the Faculty of Law.

## Norah Cleary Entrance Awards

(See Assumption University Awards.)

## Stanley J. Clench Bursary in Music

An annual award valued at $\$ 300$. Students in Year 3 or 4 of the Music program will be considered. A minimum cumulative average of 8.5 is required, and applicants must show evidence of financial need. Established in 1999 by Stanley J. Clench. Deadline: March 1.

## COGECO Cable 11 Bursary

Value: $\$ 500$. Renewable for two or three additional years, provided qualifying conditions are maintained. To a student registered in Year 2 or beyond who has a cumulative average of at least 10.5 and is an active member of a University of Windsor athletic team (preferably track and field). Recipients must display qualities of leadership, team loyalty, and fair play. Financial need may also be considered. Application forms available in the Student Awards Office. Deadline: November 15 .

## Shaughnessy Cohen Memorial Scholarship

One award valued at $\$ 4,800$ is available to a student who is a Canadian Citizen or Permanent Resident, residing in Ontario, entering a program in the Faculty of Arts and Social Sciences from their OAC year. Students must have a minimum admission average of $85 \%$ and demonstrate financial need. Candidates must submit a 250 -word essay which explains how their chosen program of study will benefit the public interest. This fund was established in 1999 by the Canadian Vehicle Manufacturers' Association and Canadian Automobile Dealers' Association to commemorate Shaughnessy Cohen's ardent support of the automotive industry and the community of Windsor.
Suitable candidates will be invited to apply.

## Commerce Class of 1964 Awards

Two awards valued at $\$ 600$ made annually to students registered in Year 2, 3 or 4 of the Bachelor of Commerce program, on the ba-
sis of financial need and participation in other campus and outside community activities. Minimum G.P.A. of 5.0 required. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: September 30.

## Consulting Engineers of Ontario- Essex Kent Chapter Award

An annual award to a year 2 or 3 Engineering student who demonstrates strong leadership qualities by participating in Engineering Society activities, Engineering design competitions, and who has an interest in environmental issues and building science. A minimum cumulative average of 5.0 is required. Deadline: October 31.

## Philip J. Courey Sr. Annual Bursaries

Two bursaries valued at $\$ 500$ each, awarded on the basis of financial need, to students registered in Second Year Law or beyond. Apply to the Office of the Dean of Law.
Dorothy F. Coyle and Mary Ann Coyle Janci Bursary
(See Assumption University Awards.)

## Dr. Roy J. Coyle Memorial Bursary

(See Assumption University Awards.)
Dr. Roy J. Coyle Memorial Prize in Biology
(See Assumption University Awards.)
Dr. Roy J. Coyle Memorial Prize in Physics
(See Assumption University Awards.)
Helena M. Coyle B.A. Prize in English
(See Assumption University Awards.)
Walter and Gail Crassweller Bursary
To a student in Year 1 of the Business Administration program, to be selected by the Dean of the Faculty. Automatic. No application required.

## Benny Crowley Memorial Award

One or more awards valued at $\$ 500$. Applicants must be varsity athletes with a minimum G.P.A. of 8.0. Established in 1995 by the Friends of the University of Windsor In-
vitational High School Basketball Tournament. Deadline: November 15.

Eleanor J. Cruickshank Memorial Fund Interest from this fund to provide one or more awards annually to deserving students. Established in 1979 through the benefaction of the late Miss Eleanor J. Cruickshank. Automatic. No application required.

## Valentin J. Cruz Memorial Bursary

An annual award to a student registered in Year 3 of the Bachelor of Social Work program, assigned on the basis of academic achievement and financial need. Established in 1988 in memory of Prof. Valentin J. Cruz, a distinguished faculty member in the School of Social Work (1971-1987). Deadline: October 31.

## Joseph T. Culliton Award in the Humanities

This award is in memory of Joseph T. Culliton, long-time faculty member and Dean of Arts, who belie ved in the importance of a liberal arts education and supported the Humanities Research Group. An award of approximately $\$ 2,000$ will be made annually to a full-time student in $2^{\text {nd }}, 3^{\text {rd }}$ or $4^{\text {th }}$ year who is pursuing a major or joint major in History, English, Philosophy, French, Classics or Modern Languages. Applications mustinclude an essay ( 1000 words) discussing the importance of the humanities and a liberal arts education in our changing world. Applicants should have a B+ average. Applications are available from the Humanities Research Group or the Student Awards Office. Deadline: November 15.

## Nellie Anne Dagger Memorial Scholarship in Music Theatre

One or more awards given annually to students in Years 2,3 or 4 of the Music Theatre Program, on the basis of talent and academic standing. Established in 1997. Aut0matic. No application required.

## William G. Danby Memorial Bursary

Award of $\$ 500$ to an outstanding Canadian student who is a resident of Essex County, is enrolled in Year 4 of the Business Administration program and shows a high aptitude for personnel administration and labour re-
alions work. Presented by the Human Resource Professionals Association of Windsor. (Application is made to the Education Chairman, Human Resource Professionals Association of Windsor, clo Odette School of Business Administration.)

## Douglas Davies Memorial Bursary

An annual award to a needy student regislered in a certificate or degree program in Criminology. Deadline: October 31. (Use General Bursary application.)
Deans of Social Science Entrance Award
The interest from this fund will support one or more annual awards to go to outstanding secondary school applicants entering a Social Science related discipline. Minimum $80 \%$ admission average is required. EstabIshed in 1997 to recognize the former Deans of the Faculty of Social Science: Dr. Walter White (1974-75), Dr. William G. Phillips (1975-81), Dr. Walter Romanow (1981-85), Dr. Zbigniew M. Fallenbuchl (1985-90) and Di. Kathleen E. McCrone (1990-97). Automatic. No application required.
John N. Deck Memorial Prize in Philosophy
(See Assumption University Awards.)

## P. A. Della Valle Senior Undergraduate Award in Economics

Value: $\$ 400$. Awarded annually to a student enrolled in Year 4 of an honours Economics program. The recipient must have demonstrated outstanding academic performance inthe junior years. Automatic. No application equired.

## Deloitte \& Touche Award

Value: $\$ 1,000$ credit toward Year 4 tuition. Awarded to a student registered in Year 3 Business Administration who anticipates a career in chartered accountancy, who has a superior academic record and whose personality, ability, and aptitude are, in the opinion of the University and of Deloitte \& Touche, those needed by a successful charbred accountant. Automatic. No application required.

## Mary DeMarco Scholarships in Visual Arts

Annual awards to outstanding BFA students. The recipients will be selected on the basis of the B.F.A. Portfolio Evaluations. Established in 1986 by the family and friends of Dr . F.A. DeMarco, the first vice-president of the University, in honour of Mrs. DeMarco, artist and supporter of the Arts. Automatic. No application required.

## R. Lawrence DeShield Memorial Award in Municipal Law Studies

An annual award in the amount of $\$ 300$ is made to the graduating law student who has achieved the highest cumulative average in notfewer than two of the Municipal Law cluster of courses, these including Municipal Law, Land Use Planning, Advanced Municipal/Planning/Environmental Law, and such others as may be designated from time to time by the Dean of Law. The award is established by Wira Hamiwka DeShield, the family, friends, and associates of R. Lawrence DeShield in his memory, and is designed to encourage interest and greater proficiency in Municipal Law. Automatic. No application required.

## William Dollar Memorial Bursary

The annual income of this fund will support one or more bursaries for qualified students registered in Year2, 3 or 4, who demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Consideration will also be given to academic performance and campus/community activities. Preference will be given to students who are part time employees of the Leddy Library. Established in 1996 by family and friends of William Dollar, University Librarian from 1960-1979. Deadline: October 31.

## Rev. John R. Dougherty C.S.B. Award

Value: $\$ 700$. Two awards presented annually to second-, third-, or fourth-year Biology majors who demonstrate scholastic ability (minimum 10.5 cumulative average), and financial need. Established in 1997 in memory of Rev. Dougherty for his dedication to the love of learning and of life. Applications
available from the Student Awards Office. Deadline: October 31.

## Dramatic Art Scholarships

Dramatic Art offers scholarships to deserving students registered full-time in a Dramatic Art program. Automatic. No application required.

## Jill Dynan-Perry Memorial Bursary

Awarded annually on the basis of a portfolio submission to an outstanding Year 3 B.F.A. Visual Arts student for continuation into Year 4. Established by John Perry and friends in memory of Jill Dynan-Perry, who graduated in 1969 as one of the of Visual Arts' first B.F.A. students. Automatic. No application required.

## Faculty of Education Awards

Three awards valued at $\$ 200$ each to the students standing highest in each of the Primary/Junior, Junior/Intermediate, and Intermediate/Senior Divisions. Automatic. No application required.

## Faculty of Education Most Valuable Student Award

Awarded to the pre-service student deemed most valuable in terms of his/her service (committees, social events, and volunteer situations) to both students and faculty. The winner will receive a plaque, and have his/her name engraved on the Education Faculty plaque. Automatic. No application required.

## Professor Adolf Ehrentraut Award in Mesoamerican or Latin American Studies

One award, valued at $\$ 500$, is awarded annually to a Year 4 Sociology student with an interest in Mesoamerican Studies or Latin American Studies. Candidates must have a minimum 10.0 cumulative G.P.A.. Established in 1998 by Margaret Ehrentraut in memory of her husband, Professor Adolf Ehrentraut. Automatic. No application required.

## Professor Adolf Ehrentraut <br> -Exchange Program in Sociology

One award, valued at $\$ 500$, is awarded annually to a Year 4 Sociology student partici-
pating in an exchange Program. Candidates must have a minimum 5.0 cumulative G.P.A. and demonstrate financial need. Established in 1998 by Margaret Ehrentraut in memory of her husband, Professor Adolf Ehrentraut. Deadline: February 15.

## Electrozad Foundation Scholarships

Five annual awards for Electrical Engineering students as follow: two \$1,500 awards to the top students entering Year 2; two $\$ 2,000$ awards to students entering Year 4, having achieved an average of at least 10.5 in Year 3 ; and one $\$ 2,000$ award to a female student entering Year 4 with a minimum average of 9.5 in each previous term. Students may hold only one of these awards at a time. Automatic. No application required.

## Engineering Scholarships-Meda Limited

Two \$1,000 scholarships awarded annually, one each to a female and a male student. Applicants must be enrolled in Year 2 of Mechanical or Industrial Engineering and will be considered on the basis of academic standing (a minimum average of 9.0 ) and interest in a career in the automotive field. Further information and application forms are available in the Student Awards Office. Deadine: October 31.

## Entrance Scholarship in Chemistry and Biochemistry

(See University of Windsor Entrance Awards.)

## Gerald D. Erickson Bursary

Value: $\$ 900$. Awarded annually to a desenving student registered full-time in Year 3 or 4 of the B.S.W. program. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Application forms available in the Student Awards Office. Deadline: October 31.

## Ernst \& Young Scholarship

Value: $\$ 750$. Awarded annually to a student interested in a career in public accounting who has completed Year 3 of Business Administration and has demonstrated academic excellence. Automatic. No application required.

## Essex Law Association Centennial Scholarship

An award of \$1,000 established by the Essex Law Association for the student standing first in First Year Law. Automatic. No application required.

## Essex-Kent Chartered Accountants Association Award

Value: $\$ 750$. Awarded annually to the student in the Odette School of Business Administration who has the highest average in he first two years of accounting and whose interest is in obtaining designation as a charlered accountant. Automatic. No application required.
Frank J. Ewasyshyn Engineering Award An annual award to an Electrical Engineering student studying at Year 2, 3 or 4 with a cumulative average of at least 8.5 and demonstrated financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 2000 by thends and colleagues, in honour of Frank J. Ewasyshyn. Deadline: January 31.
faculty Retirees' Scholarship
Two awards valued at \$1,000 each, assigned on the basis of academic achievement, as well as financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario.(Fund estabIshed by Faculty, Librarian, and Administralor Retirees' Association.) Deadline: October 31. (Use General Bursary applicafon.)
Zbigniew Fallenbuchl Memorial International Relations Scholarship
Value: $\$ 300$. Awarded annually to an outstanding student entering Year 4 of the International Relations program. Recipient must have a cumulative G.P.A. of at least 10.5 . Established in 1999 by the Department of Political Science. Automatic. No application required.

## Fasken Martineau DuMoulin LLP Achievement in Contract Law Award

Anannual award of $\$ 300$ is available to the student who has achieved the highest academic standing in Contract Law in the first par of Law. Established in 1999 by Fasken

Campbell Godfrey. Automatic. No application required.

## Fasken Martineau DuMoulin LLP Achievement in Law Award

An annual award of $\$ 300$ is available to a student who has achieved superior academic standing in the first year of Law and has demonstrated qualities of leadership and good citizenship through contribution to the community. Established in 1999 by Fasken Campbell Godfrey. Automatic. No application required.

## Peter Fast Memorial Bursaries

Six bursaries of $\$ 1,000$ each, two each to students registered in Years 2, 3, and 4 in the Department of Electrical Engineering. To be awarded on the basis of application and the recommendation of Electrical Engineering. Deadline: February 15.

## Peter Fast Memorial Scholarships

Two scholarships valued at $\$ 1,500$ each to students entering Years 3 and 4 respectively in Electrical Engineering, based on academic standing (at least 10.5 cumulative average). Recipients may not concurrently hold more than two other major awards. Automatic. No application required.

## Harold G. Fox Bursaries

Eight bursaries contributed by the Harold G. Fox Education Fund are awarded annually to the top four students in each of the first two years of the Law program who re-register in the suicceeding year. Automatic. No application required.

## Friends of Music Award

Awarded to the graduating candidate in the B. Mus. program who combines high scholastic achievement with significant contributions to Music, the University and the community. This award is in the form of a book prize (approximate value: $\$ 50$ ). Automatic. No application required.

## Alvin D. From Bursary

Value: $\$ 250$. Awarded annually, on the basis of academic standing and financial need to a Law student registered in the course Transfer of Land (Real Estate Transactions). Further information available in the Office of
the Dean of Law. Established in 1985 in memory of Alvin D. From, Q.C.
Apply to the Faculty of Law.

## Alvin D. From Memorial Scholarship in Civil Procedure

Value: $\$ 500$. Awarded annually to the Law student standing highest in Civil Procedure. Established in 1985 by friends and colleagues of Alvin D. From, first Master of the Supreme Court of Ontario at Windsor. Automatic. No application required.

## Gavel Award

A $\$ 100$ gift certificate donated by Carswell given to the student judge presiding over first-year moots who writes the best reasons in support of his or her judgment. The winner's name is engraved on a plaque donated by the County Court Judges, District No. 1. Automatic. No application required.

## Geological Association of Canada Prize

A year's membership in the GAC, including a subscription to the Canadian Journal of Earth Sciences is presented to the student having the best overall record in Year 3 Ge ology courses. Automatic. No application required.
German Canadian Business and Professional Association Prize
Value $\$ 500$. Awarded annually for excellent achievement in intermediate or advanced German language course. Recipient must have completed at least two courses at the 2 nd , 3rd, or 4th year. Automatic. No application required.

## Barbara Gesell-Ferreira Memorial Award

A $\$ 500$ annual award has been established in the memory of the accomplishment of Barbera Gesell-Ferreira who passed away during herfirst year. The award is to be made to a first year Law student who best exemplifies integrity, de dication, vitality, extra-curricular involvement and financial need. The award was established by Barbara's family and friends. Application forms available in the Student Awards Office. Deadline: January 31 .

## Jennifer Gignac Memorial Award

The interest from this endowed trust is to be awarded annually to a 4th year Nursing student who has made a significant contribution to campus and community life. Nominations for this award are to be made, by peers, to the Faculty of Nursing, Director's Office. Deadline: January 31.

## Ed Girardot Memorial Bursary

(See Assumption University Awards.)

## Rev. W.H. Godden Bursary

An annual award of $\$ 1,000$ to a student registered within the University of Windsor on the basis of academic merit (minimum 7.0 cumulative average) and financial need. Recipient must be a child or a grandchild of a member of the Royal Canadian Legion Zone A-1. Application forms available from the Student Awards Office. Deadline: October 31.

## Alex Fraser and Eva Shumer Goldberg Memorial Award in Nursing

Value: $\$ 400$. To an outstanding student entering the final year of a degree program in Nursing. Established by the family and friends of Mr. Goldberg to honour his memory. Automatic. No application required.

## Alex Fraser and Eva Shumer Goldberg Scholarship in Law

An award of $\$ 400$ to a student entering Third Year Law, on the basis of overall academic standing and contribution to the extracurricular, academic, and social life of the Faculty. Established by friends of Mr. Goldberg to honour his memory. Automatic. No application required.

## Aileen and Eli Goldin Memorial Awards

One or more annual awards to students preferably in the Odette School of Business, in Year 2 or beyond, who are residents of Windsor. Assigned on the basis of academic merit (minimum average of 6.5) and financial need. Established in 1990 by friends of Aileen and Eli Goldin to honour their memory. Deadline: October 31. (Use General Bursary application.)

## Governor-General's Silver Medal

Awarded annually to an outstanding gradualing student, primarily on the basis of academic performance. Contribution to various activities within the University also may be aken into consideration. Automatic. No application required.

## Conrad P. Gravenor Memorial Scholarship

An annual award to a student registered in Year 2 Science, for outstanding achievement in the Geology courses 61-140 and 61141, and for overall high performance in Year 1. Automatic. No application required.

## Graybiel Entrance Scholarships

Value: $\$ 1,000$. Awarded annually to six outstanding graduates of Windsor secondary schools. Preference given to applicants enkning English, History, French, Modern Languages, Social Sciences and Applied sciences. Established in 1995 by the Graybiel family. Automatic. No application required.

## Graybiel In-Course Scholarships

Six scholarships of \$1000 each awarded annually to second-, third-, or fourth-year students who are graduates of Windsor secondary schools. Preference given to students majoring in English, History, French, Modern Languages, Social Sciences and Applied Sciences. Established in 1997 by the Graybiel family. Automatic. No applicafon required.

## Anna Gupta Award

An annual award to an outstanding student entering Year 3 of a degree program in Nursing. Established in 1987 by alumni and friends of the Faculty of Nursing to honour Prof. Anna Gupta, former director of the Faculy of Nursing. Automatic. No application required.

Hadassah-WIZO of Windsor - Mina Grossman-lanni - Woman of Distinction Scholarship
Value: $\$ 1000$. To an outstanding female stutent registered full-time in Year 2,3 or 4 of a Music Program. The recipient must have a cumulative average of at least 10.5. Automatic. No application required.

## Eleanor Barteaux Haddow Scholarship

Value: $\$ 200$. Awarded annually on the basis of academic merit to a female undergraduate Canadian Citizen or Permanent Resident. Established in 1977 by the Windsor Club, Canadian Federation of University Women. Automatic. No application required.

## Harcourt Brace \& Company Canada Health Science Scholarship

A book award to an outstanding student entering the final year of a degree program in Nursing. Automatic. No application required.

## Bill Harvie Endowment Fund

An annual scholarship of $\$ 1,500$, to a student entering Year 2 of the Bachelor of Commerce program. Renewable for Years 3 and 4 , during which recipient must work closely with a Business Administration faculty member who will provide teaching or research support. Automatic. No application required.

## Rudolf A. Helling Memorial Award

Value: $\$ 600$. Awarded annually to an outstanding student entering Year 3 or 4 of an Honours program in Sociology, Anthropology, Political Science or Geography, who is pursuing studies in race, ethnic, or intergroup relations as they relate to Canada's heritage. Established in 1983 in memory of Dr. Rudolf Helling, founding Chairman of the Sociology Department and Professor of Sociology. Deadline: November 30.

## Christine Dawn Hernandez Memorial Bursary

Value: $\$ 300$. Awarded annually to a student enrolled in Year 3 of the Social Work program, on the basis of academic standing and financial need. Established in 1983 in memory of Christine Hemandez, B.S.W., in recognition of her dedication to the field of Social Work. Deadline: October 31.

## Brad Hodgson Memorial Award

Awarded to the student who participates extensively both in student government and other extra-curricular activities, demonstrating leadership, energy and commitment to the full range of law school opportunities. A minimum G.P.A. of 9.5 is required. Established in 1999 in memory of Brad Hodgson,
a former graduate of the University of Windsor.

## Dennis Hogan Memorial Award

Two awards valued at \$150 each, one for a female recipient and one for a male, renewable providing qualifying conditions are maintained. Recipients must be graduates of a Windsor or Essex County Secondary School; be registered in Year 2 or beyond with a cumulative average of at least 8.0 ; must have participated in the University of Windsor Lancer women's or men's hockey program; and must display qualities of leadership, team loyalty, and fair play. Award established in 2000 by the Club 240 and Mr. Eddie Hogan. Deadline: November 15.

## Jimmy Hogan Memorial Bursaries

Two awards valued at $\$ 500$ each to a male and a female hockey player. Renewable for an additional three years provided the qualifying conditions are met. Established in 1987 by friends of the late Jimmy Hogan. Deadline: November 15.

## Patrick F. and Elsie J. Horwood Bursary Fund

One or more bursaries valued up to $\$ 700$, awarded on the basis of academic standing (minimum average of $\mathrm{C}^{+}$) and financial need, to full-time students who are graduates of St. Anne's, L'Essor or Belle River Secondary Schools and who have resided in the Town of Tecumseh for at least twelve months. Application forms available in secondary school guidance offices and in the Student Awards Office. Deadline: October 31.

## John Hughes Memorial Scholarship

A trust fund has been established by friends and associates of the late John Hughes, retired Chief of Police for the City of Windsor and member of the Board of Govemors of the University of Windsor, to provide in his memory an award in the amount of $\$ 500$ to the full-time student achieving the highest average (at least 8.5), registered in second year or beyond, at least one of whose parents is currently serving as a police officer or civilian member of a police force stationed in Essex County. Application forms available at
the Student Awards Office. Deadline: September 30.

## Faculty of Human Kinetics Alumni Scholarship

Value $\$ 500$. Awarded annually to a student entering Year 1 Kinesiology who has registered in a minimum of five courses per term. Candidates must have an average of atleast $80 \%$ in the subjects required for admission and must submit the following to the Head of Kinesiology:
(1) a typewritten paper (not exceeding 500 words) on the reasons for pursuing studies in Kinesiology;
(2) a brief summary of personal interests, team and community activities; (3) two letters of reference from within the secondary school environment; and (4) a transcript of secondary school grades.
Deadline: May 6.

## Faculty of Human Kinetics Entrance Award

(See University of Windsor Entrance Awards.)

## Robert J. Humphrey Award

Value: $\$ 4,000$. An annual award designated for a third or fourth year undergraduate fulltime student enrolled in the Bachelor of Commerce program, who has a minimum of a 9.0 cumulative average and major average. Not only does this student excel academically but also has an outstanding record of leadership and community involvement, is active in promoting the University, participating in campus life, and has made a signifcant contribution to the University. Presented by the Toronto Chapter Golf Committee. Deadline: July 30.

## William Hunter Jr. Memorial Scholarships

Two awards available annually to students enrolled in Kinesiology who are recognized by the Academic Standing Committee of Kinesiology as being outstanding scholars and athletes. Established in 1979 in memory of William Hunter Jr. by the Members and Board of Directors of Essex Golf and Coun-
ty Club, Windsor, Ontario. Automatic. No application required.

## Phyllis Shapiro Hurwitz Memorial Prize in Philosophy

The interest from an endowment to be awarded to an outstanding female undergraduate majoring in Philosophy. Established in 1972 by friends of Phyllis Shapiro Hurwitz. Automatic. No application required.
Frances Hyland Entrance Award in Dramatic Art
(See University of Windsor Entrance Awards.)
I.O.D.E. Auxiliary to the Blind Scholarship
Value: $\$ 100$. Awarded to a student in Year 2 or beyond. Recipient must have a cumulaive average of at least 8.5 and must be registered with the Canadian National Institute for the Blind. Application forms available in the Student Awards Office. Deadline: October 31 .
I.O.D.E. Windsor and Essex County Municipal Chapter Centennial Award
Value: $\$ 150$. Awarded annually to two students of the University of Windsor who have completed Year I, are majoring in History, Commonwealth History, or in other fields, qualifications being equal. The student should have attended secondary schools in Windsor or Essex County. Automatic. No application required.
Ron W. Ianni / University of Windsor Alumni Scholarship in Law
This award is to be given annually to a student entering third year Law who has achieved at or near top standing in course 88-857 (Public International Law) and demonstrates financial need. Established in 1998 by the Toronto Chapter // University of Windsor Alumni. Application forms available the Faculty of Law.

## Ron W. lanni Entrance Scholarship

Three awards valued at $\$ 20,000$ ( $\$ 5,000$ per year for four years) are available to Canadan and Permanent Resident students, residing in Ontario, entering any
undergraduate program from their OAC year. Students must have a minimum admission average of $95 \%$, demonstrate financial need, and have developed strong leadership qualities through an ongoing commitment to school and community activities. Awards are renewable for subsequent terms on the condition that students 1) maintain a minimum 10.5 cumulative average, and 2) reconfirm financial need. Established in 1998 in honour of the late Dr. Ron. W. lanni, former President of the University of Windsor. Suitable candidates will be invited to apply.

## Ron W. Ianni Entrance Scholarship in Law

This award is to be given annually to a student entering Law who has demonstrated financial need as well as a record of strong academic performance. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1998 through the Ontario Student Opportunity Trust Fund by friends of Dr. lanni. Application forms available in the Faculty of Law.

## Ron W. Ianni Student Development and Support Award

One or more awards of $\$ 100$ per year for undergraduate students who work as volunteers in the area of Student Development and Support. This award is in recognition of those student volunteers whose demonstrated commitment to Student Development and Support enhances the quality of life at the University of Windsor. Volunteers who work in the Aboriginal Education Centre (Turtle Island), The Academic Writing Centre, Co-op Education and Career Services, Educational Development Centre, Intemational Students' Centre, Special Needs Program, Student Awards and Financial Aid, Student Counselling Centre, and Student information Resource Centre (SIRC) are eligible for this award. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: October 31.

## Industrial Management Clubs of Canada Awards

Value: the earnings of an investment of $\$ 2,000$ will be made available for one or
more awards each year. The awards will be given to deserving students enrolled in credit courses on a part- time basis who have successfully completed at least two courses on a part-time basis. Applicants must be Canadian residents, full-time employees in business, industry, government, or one of the professions, and must not be recipients of "tuition refund" aid. Application forms available in the Student Awards Office. Deadline: October 15.

## Agnes M. Ireland Awards

Three awards of $\$ 2,000$ each awarded annually to outstanding graduates of J.L. Forster Collegiate Institute in Windsor, who have demonstrated financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1998 through the benefaction of Agnes M. Ireland. Applications available from J.L. Forster Collegiate Institute. Deadline: February 15.

## Italian-Canadian Handicapable Association Bursary

Awarded on the basis of financial need and academic merit to a full-time undergraduate student registered beyond Year 1, who has a physical and/or emotional disability. Application forms available in the Student Awards Office. Deadline: October 31.

## The Jackman Scholarship Awards

Two awards valued at $\$ 15,000$ over four years $\left(\$ 5,0001^{\text {st }} \mathrm{yr}\right.$ r., $\$ 4,0002^{\text {nd }} \mathrm{yr}$., $\$ 3,000$ $3^{\text {rd }} \mathrm{yr}$., $\$ 3,0004^{\text {th }} \mathrm{yr}$.) are available to Canadian or Permanent Resident students, residing in Ontario, meeting OSAP Ontario residency requirements entering a program in the Faculty of Arts and Social Sciences from their OAC year. Students must have a minimum admission average of $90 \%$ and demonstrate financial need. Students must maintain a 10.5 in-course average in their program of study. Jackman Scholars must also apply for renewal of the award for second and subsequent years to reconfirm financial need. This fund was established in 1998 by the Jackman Foundation. Suitable candidates will be invited to apply.

## H. J. G. Jackson Award in Salesmanship

 Value: \$200. Awarded annually to the undergraduate student doing outstanding work in Sales, as determined by the Odette School of Business Administration. Automatic. No application required.
## Marica Janisse Bursary

Value: $\$ 500$. Awarded annually to a Visual Arts student in Year 2, 3, or 4. The student must have a cumulative average of at least 8.0 and demonstrate financial need. Established in 1998 by Marica Janisse. Deadline: November 30.

## Arlene Janzen Memorial Scholarship

An annual scholarship to a Bachelor of Music student majoring in strings/guitar. Awarded on the basis of academic standing (minimum cumulative average of 10.5) and high achievement in performance. Automatic. No application required.

## Ross Johnston Bursary

The interest from this fund will provide one or more annual awards to Ontario students who are entering the first year of the Bachelor of Commerce program, and can demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1997 by friends and colleagues of Prof. Johnston. Applications available from the Student Awards Office. Deadline: October 31.

## Robert Kingsley Jull Memorial Scholarship in Geology

Value: $\$ 1,200$. An annual award for academic excellence in a Year 2 honours Geoogy program. Not tenable with other major awards. Established by friends and family in memory of Dr. Robert K. Jull, Head of the Department of Geology, who died in an aircraft accident while doing geological fieldresearch in 1979. Automatic. No application required.

## Igor Kaplan Memorial Award

A silver prize awarded annually to a graduating Law student who has exemplified the traditions of the Law in scholarship, commitment, and integrity. Established in 1981 by Aird, Berlis, Barristers of Toronto, as a me-
monial to the late Igor Kaplan, Q.C. Automatc. No application required.

## Raechel Slobasky Kaplan Social Work Bursaries

Two bursaries of \$250 each awarded annually to students enrolled in Social Work. Deadline: October 31.
Terence Keenleyside Entrance Scholarship in International Relations
Awarded annually to an outstanding secondary school student entering the Internafional Relations program. Established in 1996 by the Department of Political Science. Automatic. No application required.
Daniel Patrick Kelly Award in Dramatic Art

An annual award to a student entering Year 4 fo program offered by Dramatic Art, who las maintained a standard of academic excelence and has made the most outstanding overall contribution to Dramatic Art. Automatic. No application required.

## Hyrtle Kennedy Memorial Award

An annual award presented to a second jear (or beyond) Dramatic Arts major, based unperformance ability and academic standing. Minimum G.P.A. 9.0. Community involvement may also be a consideration. Established in 1997 by Beta Sigma Phi of Windsor, in memory of Myrtle Kennedy. Avtomatic. No application required.

## Claire Kire Memorial Bursary

Valu: $\$ 100$. Awarded annually on the basis diacademic merit and financial need, to a second- or third-year student in Dramatic At. Applications available from the Student twards Office. Deadline: October 31.

## John B. Kennedy Memorial Entrance Awards

## (See Assumption University Awards.)

## Dennis W. Knight Award of Excellence in Visual Arts

Avarded annually for excellence in drawing andor painting based on a portfolio of work wibmitted to Visual Arts. Established by the tamily and friends in memory of Dennis W. Kight, an alumnus and faculty member of

Visual Arts. Automatic. No application required.

## Ethel Knister Memorial Grant

Value: $\$ 200$. Available to a student of Windsor or Essex County enrolled in any year beyond the first, in the University of Windsor Faculty of Nursing, on the basis of scholastic achievement and financial need. Application forms available in the Faculty of Nursing. Deadline: January 31.

## Koskie Minsky Prize in Labour Arbitration

An award of $\$ 200$ has been provided to the Law student achieving the highest grade in Labour Arbitration. Automatic. No application required.

## Milton M. Kovinsky Memorial Scholarship

Value: $\$ 700$. To an outstanding student incourse, registered in Business Administration. Automatic. No application required.
Tonnie Kovinsky Memorial Scholarship
Value: $\$ 750$. To an outstanding student incourse, registered in Engineering. Automatic. No application required.

## Robert Krause Entrance Scholarship in Political Science

Awarded annually to an outstanding secondary school student entering the Political Science program. Established in 1996 by the Department of Political Science. Automatic. No application required.

## Robert E. Krivoshein Entrance Bursary in Business Administration

Value: $\$ 2,400$ ( $\$ 600$ a year, renewable for three additional years). Awarded annually to a Canadian or Permanent Resident student, residing in Ontario, entering the Odette School of Business Administration, on the basis of scholastic merit (at least 7.5 average) and financial need. Established in 1983 by Robert E. Krivoshein, member of the Commerce Class of 1969. Awarded every. four years. Application forms available in the Student Awards Office. Deadline: January 31.

## Akira Kubota Scholarship in Political Science

Awarded annually to the most deserving intemational student in any year, enrolled in any Political Science program. Automatic. No application required.

## Grace Lamoureux - Howitt Pinfold Memorial Award

Awarded annually to an outstanding, fulltime studententering third or fourth year who is also a varsity athlete. Awarded altemately to a female and a male student. Established in 1994 by Helen-Sue Gorman and Thomas Pinfold in memory of their parents. Automatic. No application required.

## Yves Landry Memorial Scholarship

Up to eight awards valued at $\$ 5,000$ and $\$ 2,000$ will be available to students entering either Business Administration or Engineering programs. Candidates must have a minimum average of $85 \%$, demonstrate financial need, and have proven leadership potential through school and/or community involvement. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. The award may be renewable in subsequent years of study provided the student maintains a 10.5 cumulative average and can reaffirm financial need. This scholarship was established in 1998 in honour of the memory of Yves Landry, former executive head of Chrysler Canada. Suitable candidates will be invited to apply.
Yves Landry Scholarship in Business Administration
An annual award to a Year 2, 3, or 4 student in Business Administration. Applicants must have maintained academic excellence and have demonstrated an involvement in community and volunteer activities. Deadline: November 30.

## Monsignor F. X. Laurendeau Memorial Bursary

(See Assumption University Awards.)

## Law Alumni Annual Bursaries

Three bursaries valued at \$400 each, awarded annually on the basis of financial need, to students registered in the second and third years of Law. An average of 6.5 or
greater is a prerequisite for consideration. Established in 1988 from the generous contributions made annually by the Law alumni toward the development of the Faculty and its students. Applications available in the Faculty of Law.

## Faculty of Law Community Service

 Award in Memory of Reinhart LehmanThe interest earned on a trust fund in the amount of $\$ 10,000$ is awarded annually to a graduating student who has contributed significantly to the community at large while studying in the Faculty of Law. Established in 1981 by Mr. and Mrs. George Lehman.

## Faculty of Law Prize in Professional Ethics and Conduct

An annual prize of \$150-\$200 to the Law student who, in the eyes of his or her colleagues, best exemplifies characteristics of integrity, competence, and professional conduct in academic and extracurricular activities. The recipient will be chosen by a committee comprised of three student members of the Executive of the Student Law Society and the Associate Dean of Law; the primary criterion is interest in and commitment to the ideals of professionalism expected of lawyers in their obligations to the community, courts, clients, the profession, other lawyers, and themselves. Established in 1982 by a group of Queen's Counsels in the Essex County Law Association.

## Law Society of Upper Canada Education Equity Awards

An annual award of up to $\$ 1,666$ is available to a Year 2 or 3 Law student in good academic standing. Applicants must be a member of a visible minority group, an Aboriginat person, a gay or lesbian person, or a person with a disability. Applicants must also demonstrate financial need and a commitmento community and/or university service. Avallable through the generosity of Butterworths Canada Ltd. Application forms available in the Faculty of Law.

## J. Francis Leddy Entrance Scholarship in Music <br> (See University of Windsor Entrance Awards.)

## Reverend E. C. LeBel Award

Value: $\$ 200$. An annual award to a student who has completed Year 3 of any program in the Faculty of Engineering with a good academic record and who has shown outstanding ability in non- engineering courses. Established in 1963 by the Essex County Chapter of the Association of Professional Engineers of the Province of Ontario. Automatic. No application required.

## Carlo and Domenica Liburdi Memorial

 AwardAn annual award to an entering or secondyear Engineering student. Applicants must have a minimum cumulative average of at bast 75 percent or 9.0 G.P.A., and demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1997 by Joseph Liburdi. Deadline: October 31.

## LMI-Diffracto Award for North Scholars

Two awards of \$750 each, to one male and onefemale Mechanical Engineering student inhis or her second term of Year 3, with the lighest cumulative G.P.A. Candidates must be Canadian citizens or permanent residents and will be selected from Mechanical Engineering students having completed a regular full load. Established in 1999 in recugnition of the contributions of Prof. North to LMI-Diffracto Limited. Automatic. No application required.
Clyde Long/Windsor Community Choir Bursary
An annual award of $\$ 100$ for a Year 3 or 4 Voice/Music student who is a Canadian Citiran or Permanent Resident. A minimum cumulative average of 5.0 is required. Students must demonstrate financial need. Established in 1999 by the Windsor Community Choir to honour the memory of Clyde long. Deadline: October 31.

## Bernard M. Lyons Bursary

Awarded annually to a resident of the City of Windsor on the basis of financial need and sademic standing. Deadline: October 31. Use General Bursary application.)

## Judge Bruce J. S. Macdonald Awards in Criminal Advocacy

Two awards valued at $\$ 150$ each to Law students in Criminal Advocacy who exemplify the high ethical and scholarly standards required for effective Criminal Advocacy. In memory of Gordon L. Fraser, Q.C., an outstanding criminal lawyer. Automatic. No application required.

## Cameron MacInnis Undergraduate Award

The income from this fund will support an annual award to a qualified $2^{\text {nd }}, 3^{\text {rd }}$, or $4^{\text {th }}$ year Engineering student on the basis of academic potential (minimum 8.5 cumulative average required), community and/or faculty involvement, and demonstration of financial need. Established in 1998 to honour Dr. Cameron Macinnis, former Dean of the Faculty of Engineering. Deadline: January 31.
Rev. Eugene Malley C.S.B. Bursary
(See Assumption University Awards.)

## Buz Manojlovich Bursary

Awarded annually on the basis of scholastic standing (minimum G.P.A. of 8.0), and financial need to deserving female students in the Faculty of Education. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1999 by the children and friends of Buz Manojlovich, to commemorate her retirement. Deadline: October 31. (Use General Bursary application.)

## Isidoro Marcocchio Memorial Bursary

Awarded annually to a student registered in Year 2 or beyond of the Plan I Bachelor of Science in Nursing program on the basis of financial need and academic standing. Student must be a Canadian Citizen or Permanent Resident, residing in Ontario. Established in 1991 by the family and friends of Isidoro Marcocchio. Deadline: January 31.

## Rae Marcus Scholarship

An annual award to a mature student, preferably a female, entering Year I in the Faculty of Law. Assigned on the basis of academic standing and financial need. Ap-
plication forms available in the Faculty of Law.

## Arthur W. Marsh Memorial Award

Income from this fund provides one award annually (approximate value $\$ 300$ ) to a graduate of General Amherst High School, who is pursuing a program in History. Participation in extra-curricular and leadership activities will be a consideration. Automatic. No application required.

## 11 A.M. Masonic Coffee Club Bursary

Value $\$ 250$. Awarded annually to a deserving student experiencing financial hardship. Deadline: October 31. (Use General Bursary application.)

## Guru P. Mathur Memorial Fund

Value: up to $\$ 500$. Awarded to an outstanding student entering Year 2 Environmental Engineering. Established by family and friends in memory of Dr. Guru P. Mathur, Professor of Chemical Engineering, who died in an accident in 1980. Automatic. No apptication required.

## Ben Matthews Prize in Business Administration

Value: $\$ 400$. Awarded annually to the outstanding student in the graduating class of Honours Business Administration. Automatic. No application required.

## Joe Mattson Memorial Award

Value: $\$ 500$. Awarded annually to a student entering Year 2 or beyond in the Faculty of Arts or Social Sciences. Assigned on the basis of financial need and community involvement. Preference will be given to students involved with CJAM Radio. Established in 1994 by family and friends of Mr. Mattson to honour his memory. Applications are available from the Student Awards Office. Deadline: October 31.

## Dr. Margaret S. Mattson Memorial Scholarship

Interest from this fund to provide one award annually to an outstanding student majoring in Canadian Studies. Established in 1997 by friends of the late Dr. Mattson. Automatic. No application required.

## Rose Mayer Memorial Bursary

The investment income from the memorial fund will be used to support this annual award. Students must be Canadian Citizens or Permanent Residents, residing in Ontario to apply. Established in 1995 to recognize Rose Mayer's twenty-five year commitment to the University of Windsor, by her friends and colleagues at this institution. Deadline: October 31. (Use General Bursary application.)

## John McAuliffe Memorial Award

An annual award of at least $\$ 350$ for the student graduating with the highest cumulative average from the Faculty of Law. Students must have completed at least two full years of study at the University of Windsor. Established in 1999 by the Study Seminar for FFnancial Analysts, through Dr. Edward Rosenbaum, to honour the memory of John McAuliffe, former Vice-President and Professor of Law at the University of Windsor. Automatic. No application required.

## McCarthy Tétrault Prizes

Two prizes of $\$ 500$ to be awarded to students in the first and second years of study at the Law Faculty who, in the opinion of the teaching faculty, merit special recognition for academic achievement. Automatic. No application required.

## Thomas R. McDonald Award

Value: $\$ 500$. Awarded to a Drama major who has completed a minimum of four courses with at least a B average in the technical theatre/design area. Two of the courses must be at or above the 200 level. The student must show promise of pursuing technical theatre/design knowledge. Automatic. No application required.

## John C. McGuire Scholarship

## (See Assumption University Awards.)

## Marion R. and Terry P. McGuire Award

Value: $\$ 1,000$. Awarded annually on the basis of character, demonstrated financial need, and scholastic potential to any fulltime student in Year 2 or beyond who is a Windsor-area, on-line hourly employee of Chrysler (minimum five year's seniority) or his/her dependent child. Established in 1994
by friends and associates of Marion R. McGuire, retired secretary to the Vice-President Academic and her son, the late Terry P. McGuire, former Chrysler employee. Deadine: October 31.
Brian E. Mcintyre, Q.C. Memorial Award in Criminal Justice
Value: $\$ 600$. An annual award to a secondor third-year Law student who has demonstrated commitment to and general proficiency in criminal justice. In addition, linancial need and community, athletic, and/or cultural activities within the university or community at large will be considered. Selection will be made by the Dean and Associate Dean. Established in 1986 by friends and colleagues in memory of Brian E. Mcinyre, Q.C., Crown Attomey in Essex County 1977-85.
Application forms available in the Faculty of Law.

## Donald Stuart Mcintyre Bursary

(See Assumption University Awards.)
Frank McIntyre Memorial Bursary
(See Assumption University Awards.)
Marshall McLuhan Scholarship in Communication Studies
(See University of Windsor Entrance Awards.)
Elaine McMahon Memorial Bursary
One or more bursaries awarded annually to students based on academic performance and community involvement. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1995 by family and friends in memory of Mrs. McMahon. Deadline: February 15.
The Judge Joseph P. McMahon Award in Administrative Law
A fund has been established jointly by the Windsor Police Association and the Windsor Police Services Board to provide an annual award in the amount of \$200 to the student nFirst Year Law who achieves the highest pade in Administrative Law. The award is made in honour of a distinguished jurist who sarned the respect of the Windsor Police Force and Commiunity of Windsor during his
nine years of service as a member and chair of the Police Commission. Automatic. No application required.

## Margaret Alsobrook McManus Prize

Value: $\$ 100$. Awarded to the B.S.W. Year 3 full-time student who has the highest major average in all Year 1 and Year 2 courses offered by the University of Windsor in the Social Work program. Automatic. No application required.

## McMillan Binch Award

An annual award of $\$ 500$ to a student entering Second Year Law who has demonstrated a commitment to the life of the Faculty of Law through participation in extracurricular activities, and who has achieved academic excellence in First Year. Application forms available in the Faculty of Law.

## J. David McMurray Residence Award

Value: $\$ 100$. Awarded annually in late March, to a student who is currently living in a University of Windsor campus residence. To be awarded on the basis of contribution to residence and campus life and academic standing (at least 9.0 cumulative average) after the fall term. Deadline: February 15.

## McTague Law Firm LLP Awards

Two awards of $\$ 250$ have been established by the McTague Law Firm for the students standing first and second respectively in Second Year Law, provided they re-register in Third Year Law at the University. Automatic. No application required.

## Teresa Merlo Memorial Fund

A fund in the amount of $\$ 20,000$ has been established as a memorial to the late Teresa Merlo by her children. The interest earned by the fund in each year is to be divided equally between the students in such year who achieve the highest standing in Year 3 Engineering, entering Year 4, and in Second Year Law, entering Third Year. Automatic. No application required.

## Joseph Micallef Memorial Award in Family Law

An annual award to a second- or third-year Law student who is distinguished by conduct, interest in the area of Family Law and
academic standing in Family Law studies; from a memorial fund established in 1989 by the Mousseau, DeLuca Law Firm, classmates of Joseph Micallef, and his colleagues in the practice of Family Law.

## Miller, Thomson LLP Bursary Program

Two bursaries valued at $\$ 250$ each, for Law students entering second and third years respectively. Awarded on the basis of academic standing, financial need, and participation in extra-curricular activities of a scholastic nature. Application forms available in the Faculty of Law.

## Mineralogic Association of Canada Student Prize

A selection from the special publications of the MAC is presented to the student attaining the best record in second-year mineralogy courses. Automatic. No application required.

## W. O. Mitchell Entrance Prize in English Composition

(See University of Windsor Entrance Awards.)
Mitzvah Chapter, Jewish Women International Foundation of Canada
Awarded annually on the basis of scholastic ability and financial need to a student from Windsor or Essex County, in any year of any program. Deadline: October 31. (Use General Bursary application.)

## Frank J. Montello, Q.C. Bursary

Awarded annually to a Year 2 Law student, on the basis of financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1999 by the family and friends of Mr. Montello, to honour the occasion of his retirement. Applications available in the Faculty of Law.

## David Moore Memorial Scholarship

Value: $\$ 750$. Awarded to a fourth-year Bachelor of Commerce student who is planning to pursue a career in chartered accountancy. A minimum cumulative average of 9.0 is required, as well as active participation in extra-curricular and community activities. Established in 1995 through the

Essex-Kent Chartered Accountants Association by friends and colleagues of the late David Moore. Application forms are available through the Student Awards Office. Deadline: September 15.

## Stewart Moore Bursary

Interest from this fund to provide several awards annually on the basis of scholastic standing (minimum 8.0 G.P.A.), and financial need, to students in year three or four of the Social Work program. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1997 by Professor and Mrs. Stewart Moore. Prolessor Moore taught in the school of Social Work and received the OCUFA teaching award in 1992. Applications available from the Student Awards Office. Deadline: October 31 .

## C. William Morgan Scholarship

Awarded annually to a student registered in Year 2, 3 or 4 Engineering, on the basis of academic standing ( 10.5 cumulative average required) and involvement in campus activities. Deadline: January 31.

## Dr. Richard Moriarty Bursary

One bursary, valued at up to $\$ 600$ will be awarded annually on the basis of financial need, to a student registered in the third or fourth year of Kinesiology. A cumulative average of $9.0(B)$ or greater and contributions to campus life beyond the classroom are prerequisites to be considered for the award. Applicants must be Canadian Citizens or Permanent Residents, residing in Cittario. Established in 1998 in honour of Dr. Richard Moriarty and his years of contributions to the Faculty of Human Kinetics and supported annually by the Human Kinetics alumni. Deadline: February 15.

## Max N. Mousseau, Q.C. Memorial Award in Municipal Law

An annual award of $\$ 150$ to the student standing highest in Municipal Law. Established in 1988 by Armando F. DeLuca, Robert P. Hilbers, Richard A. Dinham, Douglas W. Phillips, and Thomas R. Porter, in memory of their partner, Max N. Mous-
seau, Q.C. automatic. No application required.

## Music Entrance Scholarships

one or more awards (to a total value of $\$ 500$ ) to be given to a student or students entering Year 1 of the B. Mus. or B.F.A. (Music Theatre) degree program who show outslanding leadership qualities, performing ability, and academic excellence. Candidates should apply to the Scholarship Committee of Music by April 30 and send two etters of recommendation.

## Illusic In-Course Scholarships

One or more awards (to a total value of $\$ 500$ ) to be given to a student or students entering Year 2, 3, or 4 of the B. Mus. or B.F.A. (Music Theatre) degree program who show outstanding leadership qualities, perbming ability, and academic excellence. Avtomatic. No application required.

## National Association of Corrosion

 Engineers PrizeValue: $\$ 100$. Provided by the Samia Bluevaler Section of the N.A.C.E., to the student completing Year 4 of the Mechanical Engineering (Materials Option) program whose thesis on the subject of corrosion science and engineering is considered to be of suitthe quality and the most satisfactory. Automatic. No application required.

## Ralph Nelson Scholarship in Political

 Sciencehwarded annually to the outstanding studententering Year 4 of Political Science. Resipient must have a cumulative G.P.A. of at kast 10.5. Established in 1992. Donated by the alumni of Political Science. Automatic. No application required.

## Nu-Options Club of Windsor Inc. Awards

Two awards valued at \$300 each, awarded anually to students who have a minimum average of 6.5 , demonstrate financial need, and have a disability. Deadline: October 31.

## facuity of Nursing Entrance Award

(See University of Windsor Entrance twards.)

## O.A.S.W. John Barnes Memorial Bursary

An annual award to the student entering Social Work at the University of Windsor with the highest average from a secondary school in Essex County. Automatic. No application required.

## Mary O'Brien Memorial Scholarships

Value: $\$ 500$. Awarded annually to a student entering Year 3 and to a student entering Year 4 in Kinesiology who are recognized by the Academic Standing Committee as being academically and athletically outstanding. Automatic. No application required.

## Odette Family Entrance Awards in Business Administration

Nine entrance scholarships valued at $\$ 4,000$ each will be awarded annually to students entering the Business Administration program with a minimum scholarship average of $80 \%$. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Applicants must demonstrate financial need. Recipients may not already hold another major scholarship. These awards have been established through donations from Louis L. Odette and Edmund Odette through the OSOTF initiative. Suitable candidates will be invited to apply.

## Ogilvy Renault Award

Established by the law firm of Ogilvy Renault and awarded on the basis of academic excellence to a student in their Third Year of Law, who has contributed to the academic life of the Faculty and demonstrated the ability to work well with others.

## Ontario English Catholic Teachers' Federation Award

Value: $\$ 200$, awarded annually to the outstanding student at the Faculty of Education, enrolled in the religious education studies course, who does his or her Practice Teaching in a Roman Catholic School, and who is a registered OECTF member. The recipient will also receive a pin and have his/her name engraved on a plaque on display at the Faculty. (This award is not restricted to Roman Catholic students.) Auotmatic. No application required.

## Ontario Power Generation University Engineering Award

Value: $\$ 2,400$. Awarded annually to a student of an employment equity designated group (woman, aboriginal, disabled, or visible minority) who is entering Year 2 of electrical, mechanical, chemical, or environmental engineeering. Applicants require strong communication skills and leadership skills, as well as a minimum G.P.A. of 9.0 (B average) and an involvement in extracurricular activities. This award is not tenable with more than one other award of equal or greater value. The applicant must be legally eligible to work in Canada upon graduation and will receive priority consideration for a developmental work term following second year. Automatic. No application required.

## Ontario Professional Engineers Foundation for Education Entrance Scholarships

Two scholarships, valued at \$1,200 each, awarded by the Ontario Professional Engineers Foundation for Education on the recommendation of the Faculty of Engineering to one male and one female student entering the Faculty of Engineering with the highest secondary school standing. Automatic. No application required.

## Ontario Professional Engineers Foundation for Education Medal of Academic Achievement

Value: medal plus $\$ 100$. Awarded to the top student graduating from an accredited program. Automatic. No application required.

## Ontario Professional Engineers

Foundationfor Education Undergraduate Scholarships
Two awards valued at $\$ 600$. One to the student who obtained the highest standing in the work of his or her respective year. One to a student who exhibited exceptional role model qualities through participation in nonacademic activities while maintaining above average marks. Deadline: January 31.

## Ontario Secondary School Teachers' Federation Award

Value: $\$ 350$. Awarded to a student in regular attendance in the Winter term at the Faculty of Education, Intermediate and Senior program who, in the opinion of the Faculty Council, has shown the most outstanding qualities of scholarship, teaching ability, and character. Automatic. No application required.

## The Os goode Society Legal History Book Prize

Established by the Osgoode Society to be awarded to a Law student who, in the opinion of the Faculty of Law, merits special recognition for work in legal history. Automatic. No application required.

## Osler, Hoskin \& Harcourt LLP Prize

An annual prize of $\$ 300$ has been provided by the firm of Osler, Hoskin \& Harcourt, Toronto, to be awarded to the student in Second or Third Year Law who submits the best paper in fulfilment of the written requirement for a seminar course or in the context of a supervised study course. A Committee composed of the Dean, the Editor of the Windsor Year Book of Access to Justice and the Chairperson of the Academic Programs Committee will be responsible for the evaluation of the papers. The papers must be of publishable quality. They will be judged on the basis of depth of research, organization, originality of thesis, and contribution to the development of legal knowledge. Automatic. No application required.

## Ouellette/Yamaha Scholarship

Value: full tuition for one year. Awarded to a full-time student registered in the Bachelor of Music program whose major instrumentis piano. Recipient will be chosen by competition held on the second Saturday in May. Apply to Music prior to April 30.

## Oxford University Press Public Administration Book Award

An annual award, from Oxford University Press, of books to the student with the highest cumulative average entering the $4^{\text {th }}$ year of the Public Administration (BPA) program.

Established in 1999. Automatic. No applicafion required.

## Dr. J. Gordon Parr Award in Industrial Engineering

Value: $\$ 50$. Awarded annually to a Year 4 student in Industrial Engineering for the best Industrial Liaison project. Funds made available by numerous firms involved with the Industrial Liaison Department, and the Essex-Kent Chapter of the American Institute of Industrial Engineers. Automatic. No application required.

## Barbara Parry Memorial Award

An annual award to a student entering Year 3 of the Music Therapy program. Established in 1992 by friends and family of Barbara Parry, graduate of Music. Automatic. No application required.

## Howard Pawley Entrance Award in Political Science

Awarded annually to a student who intends to major in Political Science. The award will be determined by academic merit and financial need and may be combined with other awards. Suitable applicants will be invited to apply.

## Mary Penfold Award

Value $\$ 600$. Awarded annually to a second, third or fourth year Business or Civil Engineering student who demonstrates academic excellence (minimum 8.0 G.P.A.), as well as participation in sports or extra curricular activities. Established in 1997 by Mr. and Mrs. Louis Scodeller in memory of their daughter. Deadline: January 31.

## Philosophy Alumni Undergraduate Bursary

Value: $\$ 250$ to be given to a deserving undergraduate student majoring or honouring in philosophy who can demonstrate financial need and academic potential. Deadline: November 30.

## President's Medal

Awarded to a graduating student who has made an outstanding contribution to campus activities, while maintaining a superior academic record. (This award will not neces-
sarily be assigned every year.) Automatic. No application required.

## President's National Alumni Incentive Scholarships

Fifty awards value d at $\$ 1,000$ each to female students who are accepted to first-year Engineering. Not tenable with other Major awards. Automatic. No application required.

## President's Roll of Scholars

Students who maintain a cumulative average of 11.5 or higher will be recognized by the University as University Scholars. Automatic. No application required.

## President's Women in Science Scholarship

An annual award of $\$ 1,000$ to a female student accepted to first year Science. Not tenable with other Major awards. Automatic. No application required.

## Richard Price Scholarship in Political Science

Awarded annually to the student having the highest average entering Year 2 Honours Political Science. Established in 1997 by Political Science. Automatic. No application required.

## Trevor Price Entrance Scholarship in Public Administration

Awarded annually to an outstanding secondary school student entering the Public Administration program. Established in 1996 by Political Science. Automatic. No application required.

## PriceWaterhouseCoopers Award in Accounting

Value: $\$ 500$. Awarded annually to a student who has completed Year 3 and is entering Year 4 of the Bachelor of Commerce program, who has an outstanding academic record, has demonstrated leadership on campus and/or in the community, and whose interest is in public accounting as a career. Automatic. No application required.

## Public Administration Scholarships

Two annual awards. One each to the outstanding students entering Year 3 and Year 4 of the Honours Bachelor of Public Administration program. Recipients must have a
cumulative average of at least 10.5. Year 4 award established in 1992, Year 3 award established in 1995. Donated by alumni of the Public Administration program. Automatic. No application required.
John Kenneth Pufahl Memorial Scholarship for Printmaking
Awarded annually on the basis of a portiolio of prints and satisfactory standing (minimum G.P.A. of 9.5 ), to an outstanding Year 3 printmaking student for continuation into Year 4 of the BFA Visual Arts program. Automatic. No application required.

## Quest Entrance Award

This award of $\$ 3,000$ will be made annually to the school represented by the winning team of the TV program "Quest". Individual scholarship recipients will be selected by their school, and must enroll on a full-time basis in a first year program at the University of Windsor. Automatic. No application required.

## The Rainbow Award

An annual award is available to a full-time undergraduate gay, lesbian or bisexual student. A minimum cumulative average of 9.0 is required. Consideration may also be given to contributions made to improving the community through volunteering. Deadline: December 15.

## Norman Ramm Scholarship

Two awards annually, valued at $\$ 600$ each, to students in Year 2, 3 or 4 of a program in the Faculties of Engineering and Science. Students must have a minimum cumulative average of 11.0. Automatic. No application required.

## Raphael Partners LLP Award in Insurance Law

An award of $\$ 150$ has been provided by Raphael Partners, Barristers and Solicitors, to the Law student achieving the highest grade in Insurance Law. Automatic. No application required.

## Glenda Ristimaki Memorial Bursary

Value: $\$ 300$. Awarded annually to a student registered in Year 2 of the Plan II Bachelor of Science in Nursing program on the basis
of financial need and academic standing. Application forms available in the Student Awards Office. Deadline: January 31.

## Florence M. Roach Award

One or more awards valued up to $\$ 500$ awarded at the completion of the final level to a student who has been enrolled full-time in a degree program in Nursing and who is recognize d by the Faculty of Nursing as having outstanding academic ability, professional competence, and leadership qualities. Established in 1984 by the Facully of Nursing Alumni, in honour of Florence $M$. Roach, Founder-Director of the Faculty. Automatic. No application required.

## Ruza Robote Memorial Aw ard

Awarded annually to the full-time undergraduate student who achieves the highest cumulative average by the end of the spring examinations. Established in 1980 by the Study Seminar for Financial Analysts. Automatic. No application required.

## Rockwell International Bursary in Civil

 and Environmental EngineeringTwo awards of $\$ 300$ each will be awarded to second-, third-, or fourth-year students on the basis financial need and academic performance. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Extracurricular activities will also be considered. Applicants must have a minimum G.P.A. of 8.0 and satisfy OSAP eligibility criteria. Deadline: January 31.

## John H. Rodd KC Awards in Conflicts

An amount of $\$ 150$ has been provided to be awarded to the students in Law achieving the highest grades in each section in Conflicts. Automatic. No application required.

## Jessica Sue Rogers Pauzé Award

$\$ 100$ awarded annually to a full-time Drama in Education student who has made outstanding curricular contributions to the field of developmental drama and who has at least a 9.5 cumulative average. Automatic. No application required.

Rose Masonic Lodge \#500 A.F. \& A.M. Bursary Fund
Value: $\$ 600$. An annual award to support a senior student who demonstrates financial need. Deadline: October 31. (Use General Bursary Application.)

## Rotary Club of Windsor Award

Value: $\$ 500$. Donated by the Rotary Club of Windsor to the Education student with the second-highest standing. Automatic. No application required.

## Rotary Club of Windsor Bursaries

Three bursaries of $\$ 500$ each, awarded on the basis of academic standing (at least 7.5 average) and evidence of need, to candidates enrolled in any Faculty in the University of Windsor, provided that the bursaries are not awarded in the same Faculty. Deadline: October 31. (Use General Bursary application.)

## Rotary Club of Windsor Communication Studies Award

Value: $\$ 300$. Awarded annually to a resident of Essex County, enrolled in Year 3 or 4 of the Communications Studies program with a concentration in journalism, on the basis of academic achievement and financial need. Established in 1991 by the Rotary Club of Windsor on behalf of President Fred Sorrell, and in memory of Angus Munro, a wellknown newspaper reporter and writer. Application forms available in the Student Awards Office. Deadline: October 31.

## Rotary Club Scholarship in Memory of Reginald H. Darke

An annual award to a full-time student entering Year 1 of the Music Therapy program. A minimum average of $80 \%$ and a favourable recommendation from a Music Therapist are required. May revert to a student in another Music program if necessary. Established in 1991 by the Rotary Clubs of Windsor, Wind-sor-St.Clair, and Windsor-Roseland. Automatic. No application required.

## Newton Rowell Scholarships

Three awards valued at \$2,500 each, awarded to students entering First Year Law, on the basis of academic excellence as well as a demonstrated interest in and commit-
ment to public service. Established in 1992 by the Honourable Henry N.R. Jackman, Lieutenant Govemor of Ontario, in honour of his grandfather, Newton Rowell, a public servant, lawyer and judge. Automatic. No application required.

## Dean Ruth Scholarship in Social Work

Awarded annually to an outstanding student entering Year 4 Social Work. Established in 1981 in honour of Rev. N.J. Ruth, C.S.B., former Dean of Arts and Science. Automatic. No application required.

## Peter K. Ryan Scholarship

An annual award of $\$ 400$ for a student in Year 3 or 4 of the Visual Arts program. Aminimum cumulative average of 9.5 and demonstrated financial need is required. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1998 in memory of Peter K. Ryan. Deadline: November 15.

## Archbishop Sabbah Bursary

(See Assumption University Awards.)

## Shane Ryan Spirit Award

This annual award of $\$ 100$ will recognize and encourage the achievement of the student with the top academic standing who was on Academic Probation in the previous school year. Established in 1999 in memory of Shane Ryan. Automatic. No application required.

## Mary Anne Sanderson Award

An annual award of $\$ 500$ to a Second or Third Year Law student in financial need who has shown outstanding ability in advocacy. The student must be a Canadian Citizen or Permanent Resident, residing in Ontario. The award was established by the law firm of Lerner \& Associates LLP to honour its partner, Mary Anne Sanderson, a graduate of the Faculty of Law, University of Windsor, on her appointment to the Bench of the Ontario Court (General Division). Application forms available in the Faculty of Law.

## H. A. Scarff Memorial Prize

A prize of $\$ 150$. Awarded annually to the student with the highest standing in Accounting 70-152. Established in 1957 by friends and
family of the late Mr. H.A. Scarff, former member of the Senate. Automatic. No application required.
Sceptre Investment Counsel Limited
Scholarship for Excellence
Income from this fund provides several awards annually to students in Years 2,3 or 4. The awards are based on academic excellence, community/leadership activities, and financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Applications are available through the Student Awards Office. Deadline: February 28.

## Scotiabank Awards

Two annual awards of $\$ 500$ each, available to second- or third-year Law students. One prize is awarded to the student achieving the highest standing in the course related to Trusts, and one prize is awarded to the student achieving the highest standing in the course related to Wills. Automatic. No application required.

## Seymour Howard Schott Memorial Bursary

Value $\$ 1000$. Awarded annually to a Law student, on the basis of financial need and good academic standing. Deadline: October 31. (Use General Bursary application.)

## Rosa Schreiber Award

Value: $\$ 500$. A competition award open to Arts or Social Sciences students in Year 2 or beyond. Applicants must submit a $1,500-$ 2,000 word essay on some aspect of moral courage. This competition will be held in alternate years. Established in 1995 to honour Rosa Schreiber, an Austrian freedom fighter who risked her life to help others during World War II. Submissions must be made to the Student Awards Office by March 1st.

## Siemens Canada Limited Scholarship

An annual award recognizing academic achievement for Engineering students entering Year 2 or 3 . A minimum average of 9.0 is required. Automatic. No application required.

## Kit-Man Siew Bursary

Value $\$ 250$. Awarded annually to a student in Human Kinetics who requires financial assistance. Established in 1995 for a minimum period of three years. Deadline: October 31. (Use General Bursary application.)

## Dr. Ripu and Joan Singh Prize of Excellence

This annual award will go to an outstanding fourth-year Anthropology student based on his/her academic performance in designated physical/biological anthropology courses. Minimum cumulative G.P.A. of 10.5 is required. Automatic. No application required.

## Jerry Slavik Athletics Award

Interest from this fund will be awarded to one male and one female student annually. The students must have completed one year at the University of Windsor, have a cumulative average of at least 8.0, demonstrate financial need, and be a current member of the Lancer Track and Field and/or Cross Country Team. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Recipients must display qualities of leadership, team loyalty, and fair play. Deadline: November 15.

## Jerry Slavik/Windsor Factory Supply Award

Two awards annually, valued at $\$ 750$ each (one for a female, one for a male), will be available to undergraduate students who have completed at least one year of full-time study in their program and have a cumulative average of at least 8.0 . Students must be current members of intercollegiate cross country and/or track and field teams. Automatic. No application required.

## Smith Family Bursary

An annual award is available to an undergraduate student with a minimum average of 7.0, who demonstrates fina ncial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Preference will be given to sole support parents. Established in 1999 by Frank Smith, former Registrar of the University of Wind-
sor. Deadline: October 31. (Use General Bursary Application.)

## Smith, Lyons LLP Prize in Civil Trial Advocacy

An annual prize of $\$ 300$ provided by the firm of Smith, Lyons, Torrance, Stevenson, and Mayer to the Law student achieving the highest standing in the course on Civil Trial Advocacy. Automatic. No application required.

## Smith, Lyons LLP Prize in Securities Regulation

An annual prize of $\$ 300$ provided by the firm of Smith, Lyons, Torrance, Stevenson and Mayer to the Law student achieving the highest standing in the course on Securities Regulation. Automatic. No application required.

## Society of Chemical Industry Merit Awards

A gold key and one year subscription to Chemistry and Industry awarded annually to the student standing highest in Year 4 of each of Honours Chemistry, Honours Biochemistry, and Environmental Engineering, provided a 7.5 average is attained and the program is completed in the normal number ofyears. Automatic. No application required.

## Society of Management Accountants

 AwardValue: $\$ 500$. Awarded annually to the studententering Year 4 of the Bachelor of Commerce program with the highest aggregate grades in specified courses and a cumulative average of at least 8.5 , who is interested in a career in management accounting. Automatic. No application required.

## Tony Soda Memorial Prize

Value $\$ 300$. To the Civil Engineering student standing highest in the course, 87-325 (Planning and Construction Management). Eslablished in memory of Tony Soda, M.A.Sc., graduate of the University, who introduced and taught the course at the University. Automatic. No application required.

## Walter C. Soderlund Award in Political Science

Awarded annually to an outstanding student in second, third or fourth year Political Science, who has maintained a cumulative G.P.A. of at least 10.5. Automatic. No application required.

## Nelson Soulliere Scholarship in Business Administration

Minimum value: $\$ 500$. Awarded annually to an outstanding student in either Year 3 or Year 4 of the Bachelor of Commerce program. Applicants must have a minimum cumulative average of 9.5 . Consideration will also be given to an applicant's overall University and/or community involvement. Established in 1995 by Merchant's Paper Company, Windsor, Ltd., in recognition of Mr. Nelson Soulliere's retirement after fiftythree years of service to the Company and his community. Application forms are available in the Student Awards Office. Deadline: January 31.

## Special Needs and Accessibility Committee Bursary

Value: $\$ 500$. Awarded annually to a Special Needs student. Based on financial need and academic standing. Established in 1996 by the Special Needs and Accessibility Committee of the University of Windsor Student Alliance. Applications available from the Student Awards Office. Deadline: November 30.

The Honourable Paul I.B. and Mrs. Tevis Staniszewski Bursaries
Value: Three awards valued at \$1,000 each. Awarded annually to qualified students entering first year from Windsor-Essex County secondary schools. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1998 by Retired Justice Paul I.B. and Mrs. Tevis Staniszewski. Deadline: November 15.

The Honourable Paul I. B. Staniszewski Bursaries

Three awards valued at $\$ 500$ each, given to students who demonstrate financial need. Established in 1995 by retired Ontario Jus-
tice Paul I. B. Staniszewski. Deadline: October 31. (Use General Bursary application.)

## Della May Stark Bursaries

A number of bursaries allocated annually to deserving second- and third-year students. Deadline: October 31. (Use General Bursary application.)

## Michael Steinmetz Memorial Award

An annual award made to the graduating student who has exemplified the Access to Justice traditions of the Faculty of Law by overcoming personal disadvantage in the achievement of a legal education.

## Stikeman Elliot//Carswell National Tax Award

Value: $\$ 1,000$. Awarded annually to the graduating Law student with the highest grades in Taxation courses. Automatic. No application required.

## Stitt Feld Handy Houston Award in Legal Process

An annual award presented to a student in the Legal Process course, who demonstrates financial need. Student must be a Canadian Citizen or Permanent Resident, residing in Ontario. Apply to the Faculty of Law.

## Student Exchange Bursary

Awards of up to \$1,500 are available to students who take a full course load through a University of Windsor Exchange Program. Students must be Canadian Citizens or Permanent Residents (Landed Immigrants) and residents of Ontario, have completed at least three courses at the University of Windsor with a cumulative average of at least 5.0 and demonstrate financial need. Applications should be submitted as early as possible, but no later than: October 31 for fall or fall/winter study periods; February 15 for winter term only.

## Monsignor F. T. Sullivan Bursary

(See Assumption University Awards.)
Stuart H. Surlin Bursary for Aboriginal Students
In recognition of Dr. Surlin's interests in Aboriginal culture and values, a bursary fund has been established in his name to assist stu-
dents of Aboriginal ancestry in completing their studies at the University of Windsor. Bursary awards in varying amounts will be awarded to Aboriginal students according to financial need. Applications are available at the Student Awards Office and Turtle Island Aboriginal Education Centre. Deadline: Oc tober 31.

## Sutts, Strosberg LLP Awards in Labour Law

Awards of $\$ 150$ each have been provided by Sutts, Strosberg LLP, Barristers and Solicitors, to each of the two top Law students achieving the highest grades in the Labour Law class. Automatic. No application required.

## Dale Swaisgood WGTP Book Prize

A book prize, valued at $\$ 30-\$ 50$, to a Year 4 Social Work student, who is doing group therapy with children or working with troubled children. Automatic. No application required.

## Major H. P. Swan Prize in Philosophy

(See Assumption University Awards.)

## Honourable Walter S. Tarnopolsky Award

A cash award together with a plaque as a memento, to a student entering either Law II or Law III who has demonstrated those qualities for which Justice Walter S. Tarnopolsky, sometime Dean of the Law, was known and esteemed, namely respect for and commitment to equality and human rights, service to the community, civility and generosity of spirit. Automatic. No application required.

## Nathan and Rose Tepperman Bursary

Value: $\$ 1,000$. Awarded annually on the basis of scholastic ability or character or financial need or any combination of the foregoing, according to the best judgment of the University to a deserving student in any level of any program. Established in 1956 by employees of Mr. Nathan Tepperman of Windsor, Ontario. Deadline: October 31. (Use General Bursary application.)
Theatre Alive Scholarship
Value: $\$ 1,000$. Awarded annually to a student in Year 2, 3, or 4 of the B.F.A. Acting or
B.F.A. Music Theatre program, who is a graduate of a Windsor high school. The student must have a minimum cumulative average of 9.5 and must also demonstrate a commitment to theatrical pursuits in the form of stage performance. Established in 1998 by Theatre Alive. Applications available in the Student Awards Office. Deadline: Januany 15.

## Dr. Alfred E. Thomas, Sr., Memorial Fund

 Interest from this fund to provide one or more awards annually on the basis of scholastic standing and financial need to deserving students in any year of any degree program. Established in 1962 by the late Dr. Alfred E. Thomas, Jr., in memory of his father. Deadline: October 31. (Use General Bursary application.)
## Bill Thomas Memorial Award

Value: $\$ 500$. Awarded annually to the top academic student in second-, third-, or fourth-year History. Established in 1997 by Shoppers Drug Mart Limited in memory of the late Mr. Thomas. Automatic. No applicafion required.

## Fred Thomas Memorial Award

One or more annual awards to members of the Men's Lancer Basketball team who demonstrate financial need. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Applications available from the Student Awards Office. Deadline: November 15.

## Elizabeth Ellen Tilston Memorial Fund

Interest from this fund to provide one or more awards in amounts up to $\$ 500$ for study in the fields of Science, Mathematics or Engineering. Established by Colonel Frederick Albert Tilston, V.C. in memory of his wife. Automatic. No application required.

## Ron Todgham Memorial Scholarship Fund

Ascholarship fund established from a gift resulting from the generosity of Chrysler Canada dealers and of the Todgham family, and other contributions. One or more scholarships of up to $\$ 2,000$ each are available at the University of Windsor in the Odette School of Business Administration each
year to the children of Chrysler Canada Ltd. dealers, dealer employees and their children, and to employees of Chrysler Canada and their children. Based on academic performance and financial need. Applications can be made through the Chrysler Canada Scholarship Program (applications available from the Personnel Office and also through the Awards Office of the University of Windsor). Deadline: July 15.

## Charles M. Tolmie Memorial Awards

One or more awards to members of the Lancer Men's Basketball Team who demonstrate academic proficiency and financial need. Minimum G.P.A. of 8.0 is required. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: November 15.

## Torkin Manes Cohen and Arbus LLP Award

Value: $\$ 500$. Awarded annually to the Sec-ond- or Third-Year Law student who has distinguished himself or herself by combining academic achievement and service to the community. The names of recipients are to be placed upon a permanent plaque to commemorate the achievement.

## J.S.D. Tory Writing Awards

Two prizes in the amount of $\$ 500$ each are awarded annually to the Law students who have contributed the best articles for publication in the Windsor Review of Legal and Social Issues. Automatic. No application required.

## Elena K. Toulouse Memorial Award

Awarded annually to a student demonstrating excellence in child health nursing. Established in 1991 to honour the memory of Elena K. Toulouse, a former graduate and faculty member in the Faculty of Nursing, in recognition of her many contributions to children's health care. Automatic. No application required.

## Mary Turner Branch \#255 Royal Canadian Legion Memorial Bursaries

One or more awards valued up to $\$ 700$ each, to members of Branch 255 or their sons or daughters, who are graduates of a separate or public secondary school within
the city limits of Windsor. Further information and application forms available in the Guidance Offices of these secondary schools and in the Student Awards Office of the University. Deadline: October 31.

## U.W.S.A. Bursaries

Annual awards of $\$ 500$ and $\$ 1,000$. Applicants must demonstrate financial need and preference will be given to students involved in campus/community activities. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Established in 1997 by U.W.S.A. through the Ontario Student Opportunity Trust Fund. Deadline: November 15.

## University of Windsor Community Scholars Awards

Up to 275 Community Scholars Awards are available each year. These $\$ 1,000$ awards are applied to first-year tuition. A minimum admission average of $75 \%$, along with significant contributions to school and community life are required. Application forms will be sent to students applying for admission and must be returned by March 21st.

## University of Windsor Entrance Awards-Open Awards

Awards in the amounts of $\$ 500$ up to $\$ 12,000$ are available to students entering any program in the University. Some of these awards may be designated as renewable, and will be continued on the basis of the regulations outlined in Section 12.1.7. The actual amount of each award is determined on the basis of scholastic standing. Automatic. No application required.

## University of Windsor Entrance Awards-Competition Awards

The following awards, each valued at $\$ 1,000$ (credited to Year 1 tuition) are open to students entering the competitions indicated. Candidates generally must have a minimum of $B$ standing in the subjects required for admission, and must provide a transcript of their secondary school record. Further details may be obtained from Ontario secondary schools or from the Student Awards Office. Apply directly to department.

## Thomas Adams Scholarship in Urban Planning

Open to students entering Year 1 of the Honours Geography in Urban Planning program. Candidates must submit a paper (not exceeding 1,000 words) setting out their opinions on the desirability and/or necessity for urban planning in Canadian cities. Candidates should have an average of $\mathrm{B}^{+}$in the subjects required for admission. Apply directly to department.
La Bourse d'Entree Pierre Potier, S.J., en Composition Française
Le concours est ouvert aux étudiant(e)s qui entrent en première année d'un programme spécialisé en français. Les candidat(e)s doivent soumettre une composition en française de 1000 mots ayant trait à la vie et la culture franco-ontarienne. Renvoyer votre demande à l'adresse suivante: Le départment d'études français. Apply directly to department.

## Entrance Scholarship in Chemistry and Biochemistry

Open to students entering Year 1 of a program offered by Chemistry and Biochemistry. Each candidate must submit for adjudication one piece of written work (not exceeding 1,000 words) on any topic related to Chemistry or Biochemistry. Candidates must participate in the Chemical Institute of Canada secondary school competition and have the ranked score submitted to the Director, Chemistry and Biochemistry. Apply directly to department.

## Faculty of Human Kinetics Entrance Award

Value $\$ 1,000$. Awarded to a student entering Year 1 Kinesiology. Each candidate must submit a typewritten paper, not exceeding 1,000 words, on some aspect of the study of Kinesiology. Candidates should have a minimum average of $75 \%$ in the subjects required for admission. Apply directly to department.

## Frances Hyland Entrance Award in Dramatic Art

Open to students auditioning for entry into Year 1 of the Bachelor of Fine Arts in Acting program. Candidates must successfully complete the B.F.A. Acting audition. Apply directly to department.

## J. Francis Leddy Entrance Scholarship in Music

Awarded to the candidate entering Year 1 of the Bachelor of Music program, judged by audition to have the most outstanding potential as a performer. Awarded on the basis of a performance audition, for which candidates must prepare, from memory, three pieces of contrasting styles. Apply directly to department.

## Marshall McLuhan Scholarship in

 Communication StudiesOpen to students entering Year 1 of any Communication Studies general, honours, or joint honours program. Candidates must submit a media production to which they have made a significant, original contribution, or an academic research paper dealing with some aspect of mass communication. Further information is available from Communication Studies. Apply directly to department.

## W. O. Mitchell Entrance Prize in English Composition

Open to students entering Year 1 of any English Major or joint honours program. Candidates must submit one written work (fiction, non-fiction, poetry or drama) for adjudication. Apply directly to department.

## Faculty of Nursing Entrance Award

Open to students entering Year 1 Nursing directly from secondary school. Each candidate must submit a typewritten paper, not exceeding 1,000 words in length, setting out his or her perspective on a health issue related to the Canadian lifestyle. Candidates should have $\mathrm{B}^{+}$standing in the subjects
required for admission to Nursing. Apply directly to department.

## Visual Arts Entrance Award in Studio Art and Art History

Open to students entering Year 1 of the Bachelor of Fine Arts (Visual Arts) or the Bachelor of Arts (Honours Art History) programs in Visual Arts. Each honours B.A. candidate must submit a paper (not to exceed 1,000 words) on some aspect of art or art history. Each B.F.A. Visual Arts (Studio) candidate must submit a portfolio of ten to fifteen original art works in any media. Apply directly to department.

## University of Windsor Entrance Bursaries

Need-based assistance available to entering students who are residents of Ontario and Canadian citizens or Permanent Residents. Application forms will be sent to students applying for admission and must be returned by March 10 th.

## University of Windsor Faculty and Staff Scholarships-Faculty Association Scholarship Fund

Twelve \$1,000 entrance scholarships, one for each undergraduate Faculty, and four at large, for residents of Essex, Kent, and Lambton Counties, who have not received a concurrent award greater than $\$ 500$. Candidates entering Year 1 at the University must have an average of at least $80 \%$; candidates entering the Faculties of Law and Education must have an A average. Automatic. No application required.

## University of Windsor Family Bursary

Value: $\$ 300$. Available to students in first, second, third, or fourth year who have other immediate family members in attendance at the University of Windsor and who are Canadian citizens or Permanent Residents, taking at least $60 \%$ of a full-course load (3 courses per term for most programs) A minimurn G.P.A. of 5.0 is required. Deadline: October 31 (Fall Term), February 15 (Winter Term), and June 15 (Summer Term).

## University of Windsor In-Course Bursaries

Need-based assistance available to students in-course who are Canadian Citizens or Permanent Residents, taking at least $60 \%$ of a full course load ( 3 courses per term for most programs). A minimum cumulative average of 5.0 is required. Applications are available in the Student Awards Office. Apply early. Funds are limited.
University of Windsor In-Course Community Scholars Awards
These \$1,000 awards recognize the efforts of students who have demonstrated a commitment to participating in campus clubs, societies, athletics, student government, and other volunteer programs on campus and in the community. Students must be registered full-time, with a minimum 7.5 cumulative average and demonstrate financial need. Deadline: November 30.

## University of Windsor In-Course Residence Awards

Residence Awards valued at $\$ 1,000$ are available to current University of Windsor students on the basis of academic achievement (i.e., a cumulative G.P.A. of 9.0 or better). Students must have lived in a University-owned residence for at least two previous full-time terms. Automatic. No application is required.

## University of Windsor In-Course Scholarships

A number of awards made annually to returning students who achieved outstanding academic grades in the previous year. Automatic. No application required.

## University of Windsor Law Entrance Awards

One or more awards valued up to full tuition are available to Law students entering First Year with superior admissions qualifications. Automatic. No application required.

## University of Windsor Residence Awards-Entrance

Secondary school applicants with admission averages of $75 \%$ or higher, who indicate an interest in residence on their OUAC application form will automatically be offered a
$\$ 1,000$ residence award. This award is applicable only toward residence fees at a University of Windsor-owned residence. № application is required: simply check the residence box on the OUAC form.

## University of Windsor Turtle Island Bursary

Students of Aboriginal ancestry (Non-status, Métis, Bill C-31, Status, Innu, Inuit) who can demonstrate financial need may apply for this bursary. Value $\$ 500-\$ 1,000$ per term. Deadlines: October 31 (Fall Term), February 15 (Winter Term), and June 15 (Summer Term).

## University of Windsor Bursaries for Part-Time Undergraduate Students

Need-based assistance available to parttime students taking less than $60 \%$ of a full course load ( 1 or 2 courses for most programs), who are Canadian Citizens or Permanent Residents. A minimum cumulative G.P.A. of 5.0 is required. Deadline: October 31 (Fall Term), February 15 (Winter Term) and June 15 (Summer Term). Apply 3 months in advance of the term starting date to know status of application before the term begins.

## University of Windsor Women's Auxiliary Award in Visual Arts

Awarded to the full-time student in a Visual Arts honours program who has the highest cumulative average in Visual Arts upon the completion of Year 3. Automatic. No application required.

## University of Windsor Women's Auxiliary Bursary

Awarded annually on the basis of financial need and scholastic ability, to a woman student. Deadline: October 31. (Use General Bursary application)

## University of Windsor Women's Auxiliary Bursary in Nursing

Awarded annually to a student in Year 2 Nursing or beyond, on the basis of scholastic standing and financial need. Deadline: January 31.

## University of Windsor Women's Auxiliary of Dramatic Art Fund

An annual award to be granted to a full-time student in Dramatic Art who demonstrates outstanding talent in performance or production. Automatic. No application required.

## Jacqueline Valentino Percussion Award

Value: $\$ 100$. Awarded to a student enrolled nMusic who has selected percussion as his or her Major instrument; awarded for academic excellence and/or performing ability. Automatic. No application required.
Frank Veltri Award
Value: $\$ 600$. An annual award given to a buth-year student in either Mechanical Engineering, Chemistry, or Mathematics. Applicants must have a minimum cumulative G.P.A. of 8.5 . Participation in community and/or University activities will be considered. Preference will be given to varsity athetes. Established in 1995 by Mr. and Mrs. Tony Veltri. Applications available from the Student Awards Office. Deadline: January

## Frank Veltri Scholarships

Value: $\$ 1,000$. Two awards given annually to second- or third-year students in either Mechanical Engineering, Chemistry, or Mathematics. Applicants must have a minimum cumulative G.P.A. of 10.5. Consideration will also be given to extra-curricular community and/or University activities. Applications available from the Student Awards Office. Established in 1995 by Mr. and Mrs. Tony Veltri. Deadline: October 31.

## Visual Arts Entrance Award in Studio Art and Art History

(See University of Windsor Entrance Awards.)
Volunteer Association of Hotel-Dieu Grace Hospital Bursary
Value: $\$ 300$. Awarded annually on the basis of academic merit and financial need, to a student registered in Year 2,3 or 4 of a Nursing program. Established in 1982 by the Women's Auxiliary of Hotel Dieu Hospital. Deadine: January 31.

## Dorothy Waddicor Award in ADR

An annual award presented to a student in the course Alternative Dispute Resolution (ADR), who demonstrates financial need. The student must be a Canadian Citizen or Permanent Resident, residing in Ontario. Apply to the Faculty of Law main office.

## Ronald Wagenberg Entrance Scholarship in Political Science

Awarded annually to an outstanding secondary school student, entering the Political Science program. Established in 1996 by Political Science. Automatic. No application required.

## Joel Wargon Memorial Award

An annual prize of $\$ 350$ is awarded to a Law student who achieves the highest grade in Immigration Law and Procedure. Established in 1997 by family and friends of Joel Wargon, Class of '97. Automatic. No application required.

## Irving Wayne Memorial Award in Visual Arts

Value: $\$ 150$. Awarded annually on the basis of work done in Studio Fundamentals I and II, to an outstanding B.F.A. Visual Arts student for continuation into second year. Established in 1993 by the family and friends in memory of Mr. Irving Wayne, who was a strong believer and supporter of young artists in the community. Automatic. No application required.

## Arthur B. Weingarden Bursary

Value: $\$ 150$. Awarded annually to a married student requiring financial assistance. Preference shall be given to a student in the Faculty of Law. Deadline: October 31. (Use General Bursary application.)

## W. D. West Memorial Scholarship in Nursing

A scholarship in the amount of $\$ 500$ to be awarded annually to a full-time student entering Year 2 of a Nursing program. The award is to be made on the basis of academic merit. Candidates must have achieved an average of 10.5 in their Nursing studies of the preceding year and at least a 9.5 cumulative average. In awarding this scholarship, preference will be given to stu-
dents who, upon completing their studies, are most likely to enter the practice of nursing in Canada. Automatic. No application required.

## Frank W. Wilson and Marion Claire Wilson Memorial Scholarship in Constitutional Law

An annual award in the amount of $\$ 300$ awarded to a Second- or Third-Year Law student achieving the highest standing in those subjects falling in the constitutional law area (e.g. Constitutional Law, Canadian Federalism, Civil Liberties). In order to be eligible a student must have completed at least one senior level constitutional law course; preference will be given to students who have enrolled in the largest number of senior level courses. Established in 1988 in the memory of Frank W. Wilson and Marion Claire Wilson. Automatic. No application required.

## Robert H. Wilson Memorial Awards

Awards of $\$ 300$ and $\$ 200$ are provided by Wilson, Walker, Hochberg, Slopen LLP, Barristers and Solicitors, to the students standing first and second respectively in Third Year Law. Automatic. No application required.

## Edward and Marcia Winbaum Memorial Awards

Two awards given annually: one to a student taking dance courses, and one to a student registered in the bio-medical sciences. Recipients must maintain a minimum cumulative G.P.A. of 8.5. Financial need will be a consideration. Automatic. No application required.

## Windsor Aquatic Club Bursary

Value $\$ 500$. Awarded annually to an undergraduate student who has completed one year at the University of Windsor, has a year average of at least 8.0 , and is a current or former member of the Windsor Aquatic Club. Recipients must display qualities of leadership, team loyalty, and fair play. Application forms available in the Student Awards Office. Deadline: November 15.

## Windsor Choristers Athletic Club Bursaries

Two awards valued at $\$ 500$ each, renewable for an additional two or three years, provided qualifying conditions are maintained. Recipients must be graduates of a Windsor or Essex County secondary school, must be registered in Year 2 or beyond, with a cumulative G.P.A. of at least 8.0 over the past year, must have participated in the University's athletic program ( Lancer football) and displayed qualities of leadership, team loyalty, and fair play. Application forms available at Student Awards Office. Established in 1987 by the Windsor Choristers Athletic Club. Deadline: November 15.

## Windsor Club Canadian Federation of University Women Scholarship

Value: $\$ 500$. Awarded annually for scholastic excellence to a female student in an honours program who has completed at least one year and is not enjoying a continuing scholarship. Recipient must be a Canadian Citizen or Permanent Resident. Automatic. No application required.

## Windsor Club 240 Awards

Four awards valued at $\$ 300$ each, renewable for an additional two or three years, provided qualifying conditions are maintained. Recipients must be graduates of a Windsor or Essex County secondary school, must be registered in Year 2 or beyond, with a cumulative G.P.A. of at least 8.0 over the past year, must have participated in the University's athletic program (men's or women's basketball), and displayed qualities of leadership, team loyalty, and fair play. Financial need may also be considered. Two awards each year will be designated for female applicants and two for male applicants. Established in 1989 by Windsor Club 240. Application forms are available at the Student Awards Office. Deadline: November 15.

## Windsor-Essex County Branch, Ontario Registered Music Teachers Association Award

Awarded to a full-time student registered in Music on the basis of academic standing
and financial need. Automatic. No applicaion required.

## Windsor-Essex County Engineering Week Award

An annual award valued at $\$ 500$ for a student in Year 3 Engineering. Students must have at least a 5.0 cumulative average, show commitment to their studies, and demonstrate leadership skills through community service and involvement with other students. Deadline: January 31.

## Windsor and Essex County Municipal Chapter IODE Award in Brass

Value: $\$ 200$. Designated for a student in good standing entering Year 2,3 or 4 of the Bachelor of Music program, whose major instrument is brass. Awarded to the student achieving the highest mark in the Winter jury exam. Automatic. No application required.

Windsor-Essex County Real Estate Board Bursary
Value $\$ 1,500$. Awarded annually to a fullime student who is an active or associate nember of the Windsor-Essex County Real Estate Board, or the daughter or son of an active or associate member. Candidates must have achieved a cumulative average of at least 6.5 in the last year of attendance at school and must demonstrate financial need. Application forms available in the Offie of the Windsor-Essex County Real EsBle Board. Deadline: August 15.

## Windsor-Essex County Real Estate

 Board ScholarshipValue $\$ 1,500$. Awarded annually to a fullime student who is an active or associate member of the Windsor-Essex County Real Estate Board, or the daughter or son of an active or associate member, Candidates must excel academically (average of at least 10.5 in the last year of attendance at school). Application forms available in the Office of the Windsor-Essex County Real Estate Board. Deadline: August 15.

## Windsor Federation of Musicians Scholarship

An annual award which recognizes excelence, for a full-time student enrolled in the Music program. Established in 1997 by the

Windsor Federation of Musicians. Automatic. No application required.

## Windsor-St. Clair Rotary Bursary

Value: $\$ 200$. Awarded annually to a resident of Essex County, on the basis of academic merit and financial need. Deadline: October 31. (Use General Bursary application.)

## Adele Wiseman Poetry Award

Open to students in creative writing workshops (any level). A winning poem will be chosen from work submitted in August as a requirement for permission to register. Value: $\$ 100$, and publication in the University of Windsor Review.

## Women's Studies Entrance Scholarship

An annual scholarship of $\$ 1,000$ is available to a student entering the first year of Women's Studies with a minimum average of $75 \%$. Involvement in the community in a role that benefits women may also be a determining factor in the selection process. Suitable candidates will be invited to apply.

## Worid University Service Seminar Award

The student who represents the University at the W.U.S. Summer Seminar may apply for a waiver of tuition fees for the academic year immediately following the Seminar.

## Rose Wunder Scholarship For Excellence in English

Value $\$ 600$. Awarded annually to the top student entering Year 3 of a general or honours program in English. Automatic. No application required.

## David Wurfel Scholarship in Political Science

Awarded annually to the outstanding student entering Year 3 of Political Science. Recipient must have a cumulative G.P.A. of at least 10.5. Established in 1995. Donated by the alumni of Political Science. Automatic. No application required.

## Peter Wyzinski Sr. Memorial Award

Value: annual interest on endowment fund. Given to a full-time student, based on excellence in any Chemistry course. Automatic. No application required.

## Xerox Canada Scholarships

Two annual awards valued at \$1,800 each, altemating yearly between students in Music or Visual Arts, and Engineering or Computer Science. Based on academic performance (minimum G.P.A. of 9.0), financial need, and demonstrated advancement and understanding in "Information Technology Literacy" (hardware, software, and other technology). Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Deadline: January 31.

## John Yanchula Memorial Scholarship

Value \$200. Awarded to a student registered in Year 3 Honours History. Preference to a Windsor-area student. Bequeathed by James and Catherine Yanchula, from the estate of their father. Automatic. No application required.
Ben Yuffy Award in Business Organizations

An award of $\$ 150$ to one of the top ten Law students in Business Organizations, on the basis of need and achievement. Automatic. No application required.

## Ben Yuffy Memorial Award

Value: $\$ 200$. Awarded annually to a secondor third-year Joint J.D./LL.B. student on the basis of financial need as well as demonstrated characteristics such as compassion, family values, a sense of humour, integrity, professional conduct, and a commitment to helping others. Established in 1994 by the partners of Yuffy, Roberts, Goldstein and DeBiase to honour the late Benjamin H. Yuffy. Application forms available in the Faculty of Law.

## Elias Zakon Memorial Scholarship

Value: up to $\$ 1,000$. Awarded annually to a student entering Year 3 Honours Mathematics and Statistics. Recipient must have completed all the required courses through the 200 level for the honours degree in Mathematics and Statistics and must have a Major average of at least 11.0 and cumulative average of at least 9.0. Established in 1991 in memory of Dr. Elias Zakon, longtime Professor of Mathematics. Automatic. No application required.

## Zuber Moot Factum Awards

One prize donated by C.C.H. Canada Limited (Canadian Family Law Guide) and one prize donated by Canada Law Book Limited (a $\$ 100$ book prize) to be awarded annually to the students submitting the best written factum in the Zuber Moot Court Competition.

## Thomas F. Zuber Mooting Trophy and Prizes

A trophy and prizes are presented annually to the four students achie ving the best performances in the Senior Mooting Competition. Automatic. No application required.

### 12.4 Details of Awards

Not Administered by the University

The following awards are not administered by the University of Windsor, but students of the University may apply for those for which they are eligible. Applications should be obtained from the agencies indicated.
Students are hereby informed that these awards are made at the discretion of the donors alone.
Leroy Freeman Altiman Memorial Award One or more bursaries per academic year to be awarded on the basis of merit and need to students in a program of studies concerned with or of direct benefit to the indians, Inuit, and Métis of Canada. Established in 1983 in memory of Leroy Freeman Altiman, member of Walpole Island Indian Band. Application forms are available at the Student Awards Office. Deadline: October 15.

## Balfour Branch 362 Royal Canadian Legion, Student Award

Value: $\$ 100$. Awarded annually to a student in Year 2 or 3 who has at least an 8.5 average. Recipient must be a Canadian Citizen or a Permanent Resident of Canada. All other factors being equal, preference is given if the applicant and/or his parents have served in the Canadian Armed Forces. Ap-
plication forms available in the Student Awards Office. Deadline: October 15.

## geta Sigma Phi Sorority Award

Value: $\$ 500$. Awarded annually to a female willime student who is able to demonstrate inancial need and has completed at least me year of university with satisfactory academic standing. The recipient must be a Ca nadian Citizen or Permanent Resident of Canada who resides in Windsor or Essex County. Applications are available at the Office of Student Awards. Deadline: October 31.

## Black Students' Alliance Awards

Two annual awards of \$100 each to full-time students who demonstrate financial need and commitment to the African community hrough past and present contributions. Applicants must submit an essay pertaining to Atrican heritage and complete the appropriale application form prior to January 31. forms available in the Student Awards Ofice and from Executive members of the Black Students' Alliance. An interview may also be required.

## Blonde and Little Insurance Ltd. Award

Value: $\$ 400$. Awarded to a full-time student tho is a Canadian Citizen or a Permanent Resident, registered in Year 2, 3, or 4 of Business Administration, on the basis of academic merit, financial need, and contribution to campus and community life. Appliration forms available from the Student Avards Office. Deadline: October 15.

## Brian Briggs Memorial Scholarship

Value: Year 1 tuition. Offered annually to the splicant who, during his or her secondary sthool program, has shown the best balance among academic, athletic, and social kadership, provided that he or she has parllipated in some organized sports in the Town of LaSalle. Applications available in te appropriate high school. Deadline: May 31.

Business and Professional Women's Club of Windsor Bursary
Value: $\$ 1,000$. Awarded to a full-time, female resident of Essex County. Based on scholastic excellence (minimum cumulative
G.P.A. 9.5) and financial need. Awarded in altemate years commencing in 1995. Applications available from the Student Awards Office. Deadline: October 31. (Use the General Bursary application.)

## Giovanni Caboto Club Scholarship in Italian Studies

Value: $\$ 1,000$. Awarded annually for excellent achievement in intermediate or advanced Italian Studies courses (language, literature, civilization). Open to full-time students registered in Year 2, 3 or 4 at the University of Windsor (which includes those students spending a term or a year at either the University of Calabria, or the University of Udine, our sister universities in Italy). Priority will be given to full-time students majoring in Italian Studies. Established in 1986 and financed by the proceeds of the "Italian of the Year' banquet. Automatic. No application required.

## Cal Callahan Memorial Bursary

The Pipe Line Contractors Association of Canada offers a bursary, or bursaries, to a total of $\$ 2,000$ per annum, to sons, daughters or legal wards of persons who derive their principal income from the pipeline industry and whose employers are members of the Association and who are beginning undergraduate studies.
Applications may be obtained from the Association's Executive Office, Suite 720-5915 Airport Road, Mississauga, Ontario L4V 1T1 and must be returned not later than September 30 , accompanied by a receipt or other proof of enrolment.

## Canadian Forces Education Reimbursement for Serving Officers

Value: Up to $\$ 2000$ per academic year. The Canadian Forces Reserve will partially reimburse the cost of tuition for Reserve Officers who are attending university on a full time or part time basis to attain an initial undergraduate degree. For more information contact Windsor's own Naval Reserve Division, HMCS HUNTER, 960 Ouellette Avenue or telephone the Division at
(519)254-4373. Deadline: 30 October.

## Canadian Nursing Students' Award

Two awards valued at \$100 each to students registered full-time in any year of the B.Sc.N. program (Plan I or II). Applicants must have completed at least one term of full-time study in Nursing at the University of Windsor, with a cumulative average of at least 6.5 , and must demonstrate their involvement in promoting the image of Nursing via campus, community or clinical activity. Application forms are available at the Student Awards Office. Deadline: December 15.

## Canterbury College Awards

The following awards are administered by Canterbury College. For further information, consult the College.

## Anglican Church Women Clergy Bursary

Value: \$200. To a theological student from the Essex Deanery intending to become an Anglican priest studying at any theological college. Application, accompanied by a letter of reference from a Rector of an Essex Deanery parish, to be submitted to the Principal by June 1.

## Brotherhood of Anglican Churchmen Prize

Value: $\$ 225$. To the top academic student in Canterbury College at the second year undergraduate level or above.

## Canterbury College Entrance Scholarships

Approximately seven awards of $\$ 500$. Endowed by trust funds given to the College. Awarded to secondary school graduates entering the College on the basis of academic excellence in secondary school and contribution to their school or society at large to subsidize their Canterbury College residence fees in the first year.

## Canterbury College General Scholarship Fund

Value: $\$ 350$. Two awards to undergraduate students of Canterbury College in any Faculty on the basis of academic excellence in the first year.

## C. P. Prize

Value: $\$ 250$. To an Anglican clergyperson, or to the son or daughter of an Anglican clergyperson enrolled in any course in Canterbury College or the University of Windsor. Awards to be made on the basis of merit and need. Apply to the Principal. Deadline: June 1.
The Clifford T. Terry Residence Scholarship
Value: $\$ 150$. To a student of Canterbury College entering a Master's program in Business Administration or Engineering, or alternately an undergraduate student continuing in these programs, on the basis of academic merit to subsidize residence fees at the College.

## R. Jackson East Prize

Value: $\$ 125$. Endowed by the family of R. Jackson East. To an undergraduate student of Canterbury College in the Odette School of Business Administration on the basis of academic excellence in the first, second or third year.

## EEC Residence Bursary

Value: $\$ 500$. To an undergraduate student of Canterbury College, on the basis of need, who has attained at least a B average in their first, second, or third year in Social Sciences to subsidize their residence fees.

## E. Nora and Helen Golden Resicience Scholarship

Value: $\$ 600$. To a student of Canterbury College entering or continuing in any program in the Faculty of Education on the basis of academic merit to subsidize his or her residence fees at the College.

## Percy C. Graham Book Prize

Value $\$ 100$. To the student in Canterbury College ranking highest in History.

## Guild Prize No. 1

Value: $\$ 150$. Endowed by the Essex Deanery Embroidery Guild. To the student in Canterbury College with the highest average in Religious Studies, History, or related subjects.

## Guild Prize No. 2

Value: $\$ 150$. Endowed by the Essex Deanery Embroidery Guild. To the male student who has made the most outstanding overall contribution to the College. Normally not Head of College. The decision to be made by the Principal and Head of College.

## Cyril B. Hallam Residence Scholarship

Two awards of $\$ 500$ to students of Canterbury College in any Science discipline, on the basis of need and academic excellence to subsidize their residence fees at the College.

## William M. Holmes Memorial Prize

Value: $\$ 100$. Endowed by Mrs. Alice E. Holmes. To a student of Canterbury College in, first, Music or second, the Performing or Visual Arts.

## Rev. Dr. F. T. Kingston Scholarship

Value: $\$ 600$. Endowed by the family and friends of the Rev. Dr. Frederick Temple Kingston. To an undergraduate student of Canterbury College in the humanities on the basis of academic excellence.

## George E. Marshall Bursary

Value: $\$ 800$. Awarded to an undergraduate or graduate student of Canterbury College who attended secondary school in the Windsor area before entering the University of Windsor, on the basis of need and academic excellence.

## Ellen Mary Prize

Value: $\$ 400$. To the female student who has made the most outstanding contribution to the Canterbury College. The decision to be made by the Principal and Head of College.
F.C. McRitchie Prize

Value: $\$ 100$. Endowed from the estate of Archdeacon Frank C. McRitchie. To an undergraduate student of Canterbury College in the Odette School of Business Administration, on the basis of need and academic excellence in their second or third year.

## Fred and Catherine Musson Memorial Bursary

Value: $\$ 200$. To a graduate or undergraduate on the basis of ability and need. Normally determined by the Principal.

## Leslie F. Ounsworth Prize

Value: $\$ 150$. Endowed by the family of Leslle Frank Ounsworth. To an undergraduate student of Canterbury College for academic excellence in the first year of any program.

## Charles H. Ramin Memorial Prize

Value: $\$ 100$. Endowed by family and friends of Mr. Charles Ramin. To the undergraduate student in Canterbury College with the highest average in either Engineering or Natural Sciences.

## Chrysler Canada Scholarships

Awards based on academic achievement and determined annually for children of active, retired, or deceased employees of the Company, and Chrysler dealerships who are entering university. Apply to Employee Services Department, Chrysler Canada Ltd., Windsor, Ontario.

## Commerce Class of '55 Alumni Awards

Annual awards of $\$ 100$ for outstanding undergraduate and graduate students in Business Administration, awarded on the basis of combined academic excellence and extracurricular achievement. Further information is available from the Faculty. Deadline: September 30.

## Commerce Class of '61 Alumni Awards

Annual awards of $\$ 350$ for outstanding undergraduates in the Odette School of Business Administration, awarded on the basis of combined academic excellence and extracurricular achievement. Further information and applications available from the Faculty. Deadline: September 30.

## F. J. Connell Music Scholarship

Approximate value: $\$ 750$. Awarded annually to an undergraduate or graduate student majoring in Music. For details, please contact: F. J. Connell Music Scholarship Trust,

1187 Simcoe St., Moose Jaw, Saskatchewan S6H 3J5. Deadline: October 1.

## Nicholas Copernicus Scholarships in Physics

Established in 1973 by the Polish Community of Windsor. Up to three scholarships valued at not less than $\$ 300$ will normally be awarded each year to students in Year 2, 3, or 4 of Honours Physics or Honours Applied Physics, on the basis of high academic standing and demonstrated commitment to the study of Physics. The scholarships may be held concurrently with other scholarships and bursaries. Further information is available from Physics, University of Windsor.

## Datatel Scholars Foundation

Scholarships range in value from $\$ 700$ to $\$ 2,000$. The criteria is a mix of academic merit, personal motivation, and extemal activities, including employment and extra-curricular activities. Scholarships are open to undergraduate and graduate students who are full- or part-time. Established in 1990 to meet the need for student financial aid across Datatel's client campuses. Applications are available from the Student Awards Office.

## DeLos Rogest Davis K.C. Memorial

 AwardValue: $\$ 500$. Established in 1989 in memory of DeLos Rogest Davis, K.C., the first Black lawyer in Canada, who was called to the Upper Canada Bar in 1887. This award will be presented annually to a Law student entering Year III, who best exemplifies the ideals of DeLos Rogest Davis, especially through his/her community involvement and contribution. Apply to the Faculty of Law.

## Bill Eansor Award

Value: $\$ 5,000$ ( $\$ 1,250$ a year, renewable for three additional years). This award is presented annually on the basis of leadership ability, community involvement, and academic standing. Preference is given to sons and daughters of Assumption or University of Windsor alumni. Application forms available from the Office of Alumni Relations, University of Windsor. Deadline: May 1.

## Essex Terminal Railway Company Bursaries

Two awards, valued at $\$ 1,000$ each, to sons or daughters of employees of Essex Terminal Railway Company and its affiliates (Morterm Limited; Essex Morterm Holdings Limited), assigned on the basis of academic merit, preferably at least a $75 \%$ average, and financial need. Further information available at parents' place of employment. Deadline: August 31 .

## Father Faught Memorial Bursary Fund

One or more awards valued at $\$ 100-300$ to deserving students in the field of Mathematics, assigned on the basis of financial need and academic merit. Established in 1975 by friends in memory of Father Donald Faught, long-time Head of the Mathematics Department. (Apply from November 1 to December 15; forms available in Student Awards Office.)

## Clancy Fisher Scholarship

One award, valued up to full tuition, made annually to a graduate of W. D. Lowe Secondary School, or alternate, entering the University of Windsor. Students must be Canadian Citizens or Permanent Residents, residing in Ontario. Applicants must have an $80 \%$ average; leadership in activities will also be considered. Inquire through the Student Awards Office.

## Fogolar Furlan Club (Windsor) Scholarship Program

Value: $\$ 500$. One university entrance award is available annually to members of Windsor Fogolar Furlan Club, their spouses, and children. Selection of the recipient is based primarily on secondary school academic achievement. Only OSSD graduates (or equivalent) enrolling in a Canadian university are eligible. Application forms are available at the Club's office.

## Gerontological Nursing Association Achievement Award

Value: $\$ 250$. Awarded annually to a full- or part-time Year 3 B.SC.N. student. Candidates must have a cumulative average of at least 9.5 and must be members of the Gerontological Nursing Association, Essex-

Kent Chapter. Applications available in the Faculty of Nursing and the Student Awards Office. Deadline: May 31.

## Greater Windsor Home Builders Association Bursary

Value: $\$ 1,000$. To a student registered in Year 2,3 or 4 Civil Engineering who demonstrates financial need. Application forms available in the Student Awards Office. Deadline: February 28.

## Hamilton Foundation Chaney-Ensign Fund

This fund provides annual educational bursaries to students graduating from secondary schools in the City of Hamilton. Further information is available in the Student Awards Office.

## Harmony Masonic Lodge \#579 Bursaries

 Up to three bursarie s valued up to $\$ 500$ each assigned annually, on the basis of financial need and academic standing (minimum average 6.5) to students who are residents of Windsor or Essex County. Preference given to members of "The Windsor District Masonic Order" or their children or grandchildren. Application forms available in the Student Awards Office. Deadline: October 31.
## Hoffman Prize

(See lona College Awards.)

## Imperial Oil Ltd. Higher Education Awards

Tuition and compulsory fees for children of employees, annuitants, or deceased employees of Imperial Oil Limited. Apply to Administrative Management Services, Awards Division, P.O. Box 414, Pickering, Ontario LiV2R6.

## IODE Awards

## IODE Municipal Bursaries

Two awards of \$300 each, given to students attending any Canadian university who are graduates of an Essex County secondary school. Candidates must be Canadian Citizens or Permanent Residents, must have at least B standing in the year of application
and must show evidence of financial need. Apply through high schools.

## IODE Primary Chapter Bursaries

A number of IODE Chapters offer bursaries to students who have graduated from local secondary schools.

## Provincial IODE Award

The Lucy Morrison Memorial Fund, established in 1940, is for educational purposes; awards are made at any time of year, to students who through emergency or other hardships, would not be able to continue through the year without financial assistance. Awards are made to students in Science, Humanities, Colleges of Art, Conservatories of Music, Ryerson Institute, and other similar fields.
For all of the above awards apply to Municipal Education Secretary, Windsor and Essex County Municipal Chapter IODE.

## Ontario Provincial Chapter IODE Music Scholarship

Value: $\$ 1,000$. To a student in a degree or diploma course in Performance, registered in a recognized of Music in Ontario. Nomination made by Music.

## Ontario Provincial Chapter IODE Applied Ecology Award

Value: $\$ 1,000$. To a Canadian student entering the final year of study related to "applied ecology".

## Dr. N. A. McCormick Chapter I.O.D.E. Bursary

Value: \$200. Awarded annually, on the basis of financial need and scholastic achievement, to a Canadian student who graduated from a local secondary school. Preference is given to students registered in Science or Nursing programs. Application forms available in the Student Awards Office. Deadline: October 31. (Use General Bursary application.)

## Iona College Awards

The following awards are administered by Iona College:

## Hoffman Prize

The Board of Directors of lona College will give a bursary with the value of $\$ 200$ for the purchase of books to a student majoring in Religious Studies who has completed at least one year with 7.5 standing. This will be assigned on the basis of academic achievement and ability. Application for September 30 or January 31 deadline may be obtained from lona College, University of Windsor.

## Packman Bursary

A bursary valued from $\$ 300$ to $\$ 400$ given by the Board of Directors of Iona College to a deserving student at the University of Windsor who has completed at least one year with 7.5 standing. Applications for September 30 or January 31 deadline may be obtained from Iona College and the Student Awards Office, University of Windsor.

## Japanese Student Scholarships

Value: up to $\$ 2,500$. Open to Japanese citizens studying full-time in a Business or Economics program at a Canadian University. For further information contact Peat, Marwick, Mitchell \& Co., Chartered Accountants, P.O. Box 31, Commerce Court Postal Station, Toronto, Ontario M5L 1B2. Deadline: April 15.

## Amouney Jasey Memorial Award

One or more scholarships having a minimum value of $\$ 500$ to students who have successfully completed Year 1 of undergraduate studies at the University. Applicants limited to sons or daughters of the members of the Windsor Islamic Association. Apply to the President of the Windsor Islamic Association at 1320 Northwood Ave., Windsor. Deadline: September 30.

## Johnson and Johnson Leadership Award

Value: $\$ 1,000$. Awarded annually to a graduating Nursing student who shows leadership qualities and dedication to Nursing which contributes to the advancement of the Nursing profession. This award is offered by the Canadian University Nursing Students As-
sociation. Applications available from CUNSA delegate. Deadline: November 1.

## D. Ross Johnston Award

Value: $\$ 50$. Awarded annually to the undergraduate student who has the highest overall grade achievement in five accounting courses. The award will be presented in recognition of Professor Johnston's contribution to the learning experience of accounting students.
Apply through the Honorary Accounting Society before September 30.

## Fred and Mary Kirachuk Awards

Three awards valued at $\$ 500$ each. Awarded annually to students of Ukrainian descent (by either parent), resident in Windsor or Essex County, registered at the University of Windsor in an undergraduate or graduate program. Candidates must have a minimum average of 7.5 and must demonstrate financial need and leadership qualities. Application forms available in the Student Awards Office. Deadline: July 15.

## Patricia Lauzon Award

Value: $\$ 100$. Awarded annually to a full-time undergraduate student, in Year 2 or beyond, enrolled in the Odette School of Business Administration, in recognition of combined academic excellence and contributions to the Odette School of Business Administration. Resumé and letter of application to be submitted to the President of the Commerce Club by March 1.

## Cynthia Lidster Award

Value: $\$ 150$. Awarded annually to a full-time second- or third-year B.Sc.N. student (Plan l or II). Applicants must have a minimum 9.0 cumula tive average and have demonstrated leadership and professional involvement in Nursing, within the Faculty and/or the community. Deadline: December 15 .

## Ken Long Memorial (OPUS) Award

Value: $\$ 500$. This annual award is available to part-time students who are in Year 3 or beyond of an English Language and Literature. or Creative Writing program. Established in 1996 by OPUS in memory of Professor Ken Long. Application forms are available in the

OpuS Office or the Student Awards Office. Deadline: April 15.

## Ed Lumley Entrance Award

Value: $\$ 100$. Awarded annually to an Essex County student registered in Year 1 Business Administration, on the basis of academic standing and extracurricular achievement in secondary school, with spedial emphasis on the latter. Established by the 1982-3 Commerce Club in recognition of the outstanding contribution made to Canadian business and government by the Honourable Ed Lumley, alumnus of the Faculty of Business Administration. Applications available at the Commerce Club Office. Deadline: October 15.

## Siro Martinello Memorial Bursaries

One or more bursaries of at least $\$ 500$. Awarded annually to entering students who have graduated (or will graduate) from secondary schools located in Windsor or Essex County. Apply before April 30 to: The Secrelary, Siro Martinello Bursary Committee, 870 Buckingham Dr., Windsor, Ontario N8S $2 C 8$.

## Masonic Foundation of Ontario

 BursariesAbursary fund provides money for a limited number of awards to students experiencing financial problems of an emergency nature. These are assigned to residents of Ontario who are Canadian Citizens or Permanent Residents. For further information communicate with the Awards Office at the Universily.

## Natural Sciences and Engineering

 Research Council Undergraduate Student Research AwardsUndergraduate students who are enrolled full time in the second or a higher year of an honours program eligible for NSERC support are encouraged to apply directly to their major department for further information on these research awards. Applicants should have a strong academic record (average of atleast 10.5). Highest priority is given to students who will be between second and third, or third and fourth year of their undergraduate honours degree, and thereafter to stu-
dents who will be completing their fourth (honours) year. In 1998 twenty-six awards were made to students at the University of Windsor; the awards provided a stipend of at least \$1125 a month and gave students an excellent opportunity to determine their interest in pursuing graduate research in the future. Application deadlines, set by departments, are usually early in January.

## Navy League of Canada Bursaries

Value: $\$ 300$. Apply to the Commanding Officers of Sea Cadet Corps.

## Ruby Newhall Memorial Scholarship

Value: $\$ 1,000-\$ 1,500$. Awarded by Pilot intemational, through the Pilot Club of Windsor, Inc., to a foreign woman student who has successfully completed Year 1 of university and is enrolled in one of the eligible fields. Details respecting eligible areas, conditions, and qualifications are available at the Student Awards Office. Deadline: March 15.

## Ontario Petroleum Institute Award

Value up to $\$ 1,000$. This award is made annually on the basis of academic results in Year 3 to a student in an Honours Geology program. The award is for financial assistance towards the preparation of a geological thesis at the Bachelor's level in stratigraphy or structural geology with preference given to work on Ontario sedimentary basins. Application is made to the Institute through Earth Sciences by November 15 .

## Order of Alhambra Scholarships

Two scholarships of \$200 each are awarded annually to students in the Faculty of Education who have completed their pre-service program of teacher training and who have signified their intention of pursuing further studies in Special Education. Special Education is considered here to include teacher training for work with the mentally, physically and emotionally handicapped child. Further information is available from the Student Awards Office.

## Organization of Part-Time University Students (OPUS) Academic Achievement Award

One award valued at $\$ 500$ to a part-time student who is at least half-way though his or her program of study, Candidates must have a cumulative average of at least 11.0, must be a Canadian resident, and must have taken at least 75\% of his or her previous courses as a part-time student. Application forms and further details are available in the OPUS Office and the Student Awards Office. Deadline: March 31.

## Organization of Part-Time University Students (OPUS) Bursary Awards

Thirty awards valued at the cost of tuition for one undergraduate course at the University of Windsor will be awarded yearly. Up to fifteen awards will be presented in each of the Fall and Winter terms to part-time undergraduate students who have completed at least two courses at the University on a parttime basis with at least a 7.0 cumulative average. Awards will be based on academic standing, financial need, and community service. Application forms are available in the O.P.U.S. Office and the Student Awards Office. Deadlines: for Fall Term - September 30; for Winter Term - January 30.

## Packman Bursary

(See Iona College Awards.)

## Papich Memorial Fund

Eight awards to deserving students from Canada and the United States, assigned on the basis of academic standing and financial need. Established in 1979 by Mr. Kenneth Papich in memory of his mother, Mary. Deadline: October 31.

## Petro-Canada Education Awards for Native Students

A number of awards (valued up to $\$ 5,000$ ) is available each year for students of Canadian Indian or Inuit ancestry who are pursuing studies in disciplines applicable to the oiland gas industry. Further information available from Native Development Advisor, PetroCanada Inc., P.O. Box 2844, Calgary, Alberta T2P 3 E3.

## Physics Faculty Entrance Scholarships

One or two scholarships to be awarded each year, valued at not less than $\$ 300$ to a Year 1 student in the Faculty of Science who is admitted to the University with a first-class average ( $80 \%$ or higher) and who intends to proceed to an Honours B.Sc. degree in Physics or Applied Physics. Preference is to be given to candidates who during the preceding year(s) participated in a High School Physics Laboratory Project at the University of Windsor. The Scholarship may be held concurrently with other awards.

## Hal Rogers Endowment Fund

This fund was established by Kinsmen and Kinette Clubs of Canada as a legacy to their founder, Harold A. Rogers (1899-1994). Canadian citizens or Permanent Residents who are or plan to be full-time students at a recognized post-secondary institution are eligible to apply. Application deadline is March 1st. For further details, please contact your nearest Kinsmen and Kinette Club, or:

Kinsmen and Kinette Clubs of Canada, c/o Hal Rogers Endowment Fund, 1920 Hal Rogers Drive, P.O. Box KIN, Cambridge, Ontario N3H 5C6
1-800-742-5546, FAX (519) 650-1091

## Rotary Club of Chatham Scholarship

Value: $\$ 750$. Awarded annually to a full-time student registered in the final year of an undergraduate program. Candidates must have a 9.5 average in the ir major subject, and their permanent home must be in Chatham or vicinity. Preference given to applicants who have demonstrated a commitment to Rotary objectives (community service, an appreciation for international understanding, good-will, and peace). Eligible candidates will be invited to apply.

## Royal Canadian Legion and Ladies

 Auxiliary BursariesAvailable to persons eligible for membership in the Royal Canadian Legion or to children of deceased Veterans or to children of parents either of whom is eligible for membership in the Royal Canadian Legion. The donors are (a) Dominion Command, (b) On-
anio Provincial Command and Ladies' Auxliay, (c) Legion Branches. Inquiries regarding these bursaries may be directed to the Provincial Service Bureau Office, Legion Branches, the guidance offices of the secondary schools or awards offices of colleges and universities.

## St. John Ambulance Association of Canada Bursaries

Bursaries from the St. John Ambulance Margaret Maclaren Memorial Fund will be awarded to student nurse applicants entering or advancing their nursing education in the Diploma and Baccalaureate programs. One bursary from this fund may also be awarded to an experienced Registered Nurse for study at the Master's Level. Applications must reach National Headquarters not later than May 1 addressed to: The Chairman, Bursary Committee, St. John Ambulance National Headquarters, Box 388 Terminal "A", Ottawa, K1N 8V4.

## Isabel and Hugh Simpson Award

Value: $\$ 1,500$. Awarded annually to a student from a Third World country who is within one year of completing studies, on the basis of financial need and academic standing. Established by Hugh Simpson of Windsor, Ontario. Application forms are available in the International Students' Centre. Deadine: September 30.

## Arthur Sneath Memorial Bursary

Abursary of $\$ 100$ will be awarded by the Students' Administrative Council to a financially needy undergraduate student who has maintained a satisfactory academic average and has participated actively in undergraduate student affairs. Applications available February 15 to March 1 , in the S.A.C. Office.

## Tony Soda Memorial Scholarship

Value: at least $\$ 1,100$. Awarded annually to an outstanding student entering Year 2 Civil Engineering. Applicants must have a minimum cumulative average of 8.5 . Considerafon also given for financial need and extra curricular activities. Application forms available in the Student Awards Office. Established in 1993 by family and friends in memory of Tony Soda, M.A.Sc., civic-
minded engineer-contractor and educator. Deadline: October 31.

## South West Area Recreation Guild Bursary Award

Awarded to a student from Southwestern Ontario. Students in second, third, or fourth year of study in the field of recreation who have volunteered or worked in a recreation setting will be considered. Applicants must demonstrate a keen interest in community recreation programs. Deadline: October 31.

## Student Engineering Society Award

Value: $\$ 50$. Awarded annually on the basis of participation in Engineering Society activities, personal qualities, character, and social and athletic activities, to a student entering Year 4 Engineering. Nominations accepted by the Engineering society.

## AVM J. A. Sully and Branch 109 R.C.L. Lancaster Scholarship

Minimum value $\$ 500$. Awarded to a student who completed the OSSD at Goderich Collegiate, who has completed the Year 1 of a degree program in Engineering, Dentistry or Medicine, or Year 2 of an honours degree program. Application forms available from the Goderich Legion or Goderich Collegiate.
Enrichetta Truant Memorial Scholarship-Italian Women's Club, G. Caboto Auxiliary
Two $\$ 500$ scholarships awarded to students entering full-time study at a post-secondary institution from secondary school. Applicants must be members or children of members of the Italian Women's Club, G. Caboto Auxiliary. Further information and applications may be obtained at secondary schools or the G. Caboto Club. Deadline: June 30.

## Ukrainian Canadian Business and Professional Club of Windsor Heritage Award

One or more awards of \$500 made annually to students of Ukrainian descent who are current or former residents of Windsor, or Essex or Kent Counties. Based on activity in the Ukrainian Canadian community and/or academic standing and/or financial need. Deadline: February 28.

## Ukrainian Women's Organization of Canada (Windsor Branch) Award

Value: up to three awards of $\$ 500$. Awarded annually to a student of Ukrainian descent (by either parent), resident in Windsor or Essex County, registered at the University of Windsor in an undergraduate or graduate program. Candidates must have a minimum average of 7.5 and must demonstrate financial need and leadership qualities. Application forms available in the Student Awards Office. Deadline: July 15.

## University of Windsor Social Science Society Awards

Two awards valued at \$500 each are offered annually to full-time students who have been registered in the Faculty of Arts and Social Sciences for at least one year, on the basis of academic merit, financial need and contribution to campus and community life. Nominations are accepted by the Social Science Society up to November 24.

## Paul Ernest Vandall Memorial Award

A $\$ 1,000$ award will be granted annually to the graduating University of Windsor student achieving the highest academic standing in the Honours Geography Program with a specialization in Environmental Resource Management. The recipient will be chosen by the Paul Ernest Vandall Memorial Award Committee. This award was established in 1984 by the family, friends and former students of Professor Vandall and the faculty and staff members of the University of Windsor. Professor Vandall, a strong supporter of Environmental Resource Management, established the Geography Department and taught at the University of Windsor from 1952 to 1983. The University's map library has also been named in his honour. Automatic. No application required.
Dr. Milorad Vuckovic Memorial Scholarship Fund
One or more scholarships of at least $\$ 300$ to deserving students in the field of History, in Year 2 or beyond, assigned on the basis of academic merit and financial need. Established in 1975 by friends in memory of Dr. Vuckovic, longtime Head of the History Department. Application forms available in the

Student Awards Office. Deadline: November 30.

## Hiram Walker and Sons Scholarship

Value: $\$ 2,000$ a year for sons or daughters of employees. Apply to Public Relations department, Hiram Walker \& Sons Ltd., Walkerville.
White Sister Apparel Inc. Jules Stuchen/RNAO Scholarship
Value: $\$ 2,000$. Awarded annually for full time study at the Baccalaureate level. Recipient must be a member of the Registered Nurses' Association of Ontario. Apply to the Director of Membership Services, R.N.A.O., 33 Price St., Toronto, Ontario M4W 1 Z2.

## Windsor and District Labour Council Awards

Value: $\$ 100$. One or more awards to be granted annually on the basis of scholarship, financial need, and on interest displayed in social and economic problems. The student must be a son or daughter of a member of a Council affiliate who is a resident of Essex County and must be an OAC graduate of an Essex County secondary school. Application forms may be obtained from the Secretary of the Council, the Guidance Offices in secondary schools, or the Student Awards Office. Deadline: July 31.

## Windsor Construction Association Awards

Two awards valued at $\$ 500$ each are offered to full-time undergraduate students registered in Year 2 or beyond. Candidates must be dependants or employees of a member of the Windsor Construction Association, and must not hold other awards concurrently. Application forms and regulations available from the Student Awards Olfice or the Windsor Construction Association, 1090 Crawford Ave., Windsor N9A 5C9. Deadline: June 30.

## Windsor Printmakers' Forum Printmaking Bursary

An annual award of $\$ 200$ to a student entering Year 4 of the B.F.A. program, majoring in Printmaking. Applicants must apply while registered in Year 3 (prior to March 31), by writing to: The Bursary Committee, Windsor

Printmakers' Forum, Floor 3-325 Devonshire, Windsor, Ontario N8Y 2 L3.

## Windsor Review of Legal and Social Issues Prize

A prize of $\$ 200$ to a student registered with any faculty of the University of Windsor submitting the best article for publication in the Review. Selection is to be made by the editors of the journal. Donated by John McLaren, former Dean of the Faculty of Law.
Windsor Roseland Rotary Club Scholarships
Two awards valued at $\$ 2,000$ each to a student entering Year 1 from each of Vincent Massey and Holy Names Secondary Schools. Awarded on the basis of academic standing (at least 70\%), financial need, and extracurricular activities. Further information available from guidance officers.

## Geoffrey H. Wood Native Bursary

Value: $\$ 250$. Up to four awards annually. Candidates must be of aboriginal ancestry (status, non-status, Métis, Bill C31, Innu and Inuit), who maintain a minimum cumulative G.P.A. of 5.0 and demonstrate financial need. Applications available from the Student Awards Office. Deadline: October 31 for Fall Term and February 15 for Winter Term.

### 12.5 Ontario Student Assistance Program (OSAP)

Students who are Canadian Citizens or Permanent Residents, and who are residents of Ontario, may apply for a loan under the Onlario Student Assistance Program. Recipients must demonstrate a need for assistance and be enrolled in a program which leads to a degree, diploma, or certificate. Audited courses are not OSAP eligible.
The O.S.A.P. Program has several components:

Canada Student Loans and Ontario Student Loans -for students taking at least $60 \%$ of a regular course load for a term of study at
least 12 weeks in length. (Students with permanent disabilities may qualify for both types of funding if studying at 40\% of a full course load).
Part Time Canada Student Loans -loan assistance may be available for students studying at between $20 \%$ and $59 \%$ of a fullcourse load.

High Need Special Opportunity Grants for Part Time Students-for some students who, due to special circumstances, may not be able to study on a full-time basis, these Special Opportunity Grants (SOG's) may be available.
Special Opportunity Grants for Female Doctoral Students -these grants may be available for females studying in non-traditional programs.
Ontario Special Bursary Plan-for needy students who are unable to study full-time (i.e. less than $60 \%$ of a regular course load).

Child Care Bursaries-for students with dependant children.
Bursaries for Students with Disabilities-for disability-related educational costs which are not covered by any other agency.
Ontario Work Study Plan-funds part-time jobs for students whose educational costs are not met by other O.S.A.P. plans.
Further information on and applications for the above plans may be obtained from the Student Awards Office.

### 12.6 Loans and Other Forms of Aid

## University of Windsor Work Study Program

The University of Windsor operates its own internal work study program to run in conjunction with the Ontario Work Study Plan.

## University of Windsor Short-Term Loans

The University operates a Loan Fund which is meant to support OSAP eligible students through temporary periods of financial difficulty. Amounts up to $\$ 600$ are available for periods of up to two months duration. Loans
are repaid from the forthcoming OSAP funding within the term of study. Short-term loans can not be advanced based on the next term's funding. Further information is available in the Awards Office.

## Harry F. Bennett Education Fund of the Engineering Institute of Canada

Loans are available from this Fund to deserving students who have completed at least one year in engineering to enable them to complete their studies. Maximum amount for one year: $\$ 300$; maximum for all years: $\$ 600$. The loan is without interest until graduation; thereafter interest at $6 \%$ per annum is charged on the unpaid portion. For details apply to the E.I.C. Faculty Representative on campus.

## Canadian Forces Personnel Assistance Fund

Available to serving and former members who have at least five years Regular Force military service in the Canadian Army after October 1, 1946, or in the Canadian Forces after January 31, 1968, and to their dependants. Low interest loans of up to $\$ 2,500$ are repayable over a 12 or 24 month period, commencing in September of the year in which the loan is awarded; however, the payment of a subsequent loan regarding a student will not commence until the previous loan is paid out.. Further information and application forms are available from Canadian Forces Base Financial Counsellors, district offices of Veterans Affairs Canada, and the Provincial Command offices of the Royal Canadian Legion or by writing to CFPAF, 245 Cooper Street, Ottawa, Ontario K2P 0G2. Deadline: June 30.

## Canadian Forces Regular Officer Training Plan

This program is designed to educate and train interested and qualified students for careers as officers in the Canadian Forces. The plan provides full tuition, a book allowance, and monthly salary for up to four academic years as well as other benefits. Further information may be obtained from the local Canadian Forces Recruiting Centre.

## Canadian Forces Medical Officer Training Plan

This program is designed to assist those interested in a medical career in the Canadian Forces. Successful applicants will be provided with up to forty-five months of subsidization including tuition, books and instrument allowance, monthly salary, and other benefits. Further information may be obtained from the local Canadian Forces Recruiting Centre.

## Canadian Forces Dental Officer Training Plan

This program provides full tuition, book and instrument allowance, monthly salary, and other benefits for up to four academic years, to students interested in a dental career with the Canadian Forces. Further information may be obtained from the local Canadian Forces Recruiting Centre.

## The Federation of Chinese Canadian Professionals (Ontario) Education Foundation

Interest-free student loans are available to qualified students (Ontario residents) currently enrolled at Ontario universities. These loans vary from $\$ 500$ to $\$ 2,000$ each, and are repayable one year after graduation. The criteria for selection are based on financial need and good academic performance. Enquiries and applications should be directed to "Student Loans Program", The F.C.C.P. (Ont.) Education Foundation, P.O. Box 6402, Station A, Toronto, Ontario M5W $1 \times 3$.

## RNAO Permanent Education Fund Loan

Maximum $\$ 2,000$ loan to members of the Registered Nurses' Association of Ontario who are returning to full-time study in nursing. Repayment of the loan begins six months after completion of study and is interest free for the first year. Interest rate is at going bank rate thereafter. For application contact RNAO Membership Services, 33 Price Street, Toronto, Ontario M4W IZ2.

## Royal Canadian Naval Benevolent Fund

Financial assistance in the form of loans or bursaries is available to former members of the Naval Forces of Canada or their depen-
dants. Inquiries should be directed to General Secretary and Treasurer, The Royal Canadian Naval Benevolent Fund, PO Box 505, Station B, Ottawa, Ontario K1P 5P6.

## Royal Canadian Air Force Benevolent Fund

Financial assistance in the form of interestfree loans is available to former members of the Royal Canadian Air Force or their dependents. Inquiries should be directed to the General Manager, RCAF Benevolent Fund, 425 Metcalfe Street, Ottawa K2P 2C3.

## State Assistance for U.S. Students

Several of the States operate student assistance programs which include the University of Windsor as an approved institution. These awards are based usually upon residence and financial need. Prospective students are advised to apply to the appropriate State Education Authority.
For further information contact:
The Director, Student Awards Office, University of Windsor, Windsor, Ontario.
N9B 3P4
For additional information on awards the following sources are recommended: Guidance Officers in secondary schools; Statistics Canada publication University Entrance Awards, copies of which are available in the University Library; Director of Awards, Association of Universities and Colleges of Canada, 600-350 Albert, Ottawa K1R 1 B1.

## 13 GENERAL INFORMATION

### 13.1.1 THE UNIVERSITY LIBRARY SYSTEM

The University Library System is comprised of the Leddy Library, and the Paul Martin Law Library. The Leddy Library, the main library for the campus, provides access to the full range of library resources, including over two million volumes of print material, thousands of electronic journals, a comprehensive collection of government documens, a growing Special and Rare Book Collection, the Paul Vandall Map Collection, and the University Archives.
Twenty-three Librarians and fifty-plus Library staff work seven days a week providing assistance and support for Library users in their reearch and academic endeavours. The Library provides access to its resources, print and electronic, from over sixty computer workstations housed in the Library building, as well as from home or office through the Library Home Page at http://www.uwindsor.ca/library/leddy.

### 13.1.2 ATHLETICS AND RECREATIONAL SERVICES

The University of Windsor's program in Athletics and Recreational Services offers a full range of interuniversity athletics and campus recreation activities. Interuniversity varsity teams, nicknamed the Lancers, compete in the newly formed Ontario University Athletics conference (OUA). Nationally, Windsor is affiliated with the Canadian Interuniversity Athletic Union (CIAU). Varsity teams compete for berths at OUA conference and CIAU national championships, staged at different universities across the country.
The men's interuniversity program includes basketball, cross-country running, football, ice hockey, soccer, indoor track and field, and volleyball. Varsity sport club teams are available in Women's curling and rugby; and
in men's curling, golf, and rugby. Women's interuniversity teams include basketball, cross-country running, ice hockey, soccer, indoor track and field, and volleyball. Regular conference schedules are supplemented by a non-conference schedule including ga mes against opponents from different universities across Canada and the United States. If you are interested in trying out for a varsity team, you can contact the Athletics Office at (519) 253-3000, ext. 2437. Ask to speak with the coach of your particular sport, or plan to attend that team's opening meeting, usually held in late August or early September.
For those students who do not wish to compete in varsity athletics butare still interested in becoming involved, there are numerous opportunities available. For spectators, admission to all Lancer home events is free with a valid student ID card, and there are numerous part-time jobs as well. Students help organize behind-the-scenes aspects of home games, organize and publicize special events, even keep statistics and collect gate receipts. Positions as team managers and student athletic therapists are also available. The University of Windsor is home to the Green Shield Canada Sport Therapy Clinic, a state of the art sport injury facility.
Participation in Campus Recreation provides more options for those not interested in varsity athletics. Instructional classes in campus recreation include weight training, fitness, learn-to-swim, martial arts, tai chi, and dance. If you enjoy recreational and competitive intramural sports, a challenging program with a variety of activities is available. Activities include volleyball, basketball, slo-pitch, badminton, floor or ice hockey, soccer, and innertube water polo. No prior experience or specific skill level is necessary. Different levels of competition allow novices and those with experience the opportunity to participate.
As with varsity athletics, there are also a number of part-time jobs available in Campus Recreation, ranging from referees and intramural co-ordinators to fitness and aquatic instructors. To join an intramural program or team, or to apply for a position with

Campus Recreation, call (519) 253-3000, ext. 2449, or sign up in September when you arrive on campus.
You can visit our website at http://www.uwindsor.ca/athletics.

### 13.1.3 INFORMATION TECHNOLOGY SERVICES

Infromation Technology Services is in the University Computer Centre, located on the south end of the CAW Student Centre. Information Technology Services provides a full range of facilities and services for students, faculty and staff. The Helpdesk, Computing Consultants and Operation staff are located on the main floor of the building. The lower level houses the Computer Lab and the Computer Classroom.
The Computer Lab is open from 8:00 a.m. to 2:00 a.m., seven days a week, during the Fall and Winter terms. During the summer and Christmas holidays, the Lab operates on a shorter schedule. The Lab is always staffed by a Student Consultant to provide assistance.

The Servers typically used by students, namely the UNIX SGI server and Novell servers, operate from 8:00 a.m. to 6:00 a.m. They can be accessed from the Computer Lab and other locations on campus. The SGI can be accessed from home using the dialup services.
The Helpdesk is staffed between 8:30 a.m. and 5:00 p.m. during working days. Consulting support is available during normal business hours. Documentation on various services is available from the HelpDesk.
A Userid is required to use the UNIX and other servers: students can activate their userid at a microcomputer located in the Computer Lab for this purpose; faculty and staff can obtain a userid by filling out a form indicating their employee number. The personal computers in the Computer Lab can be used by simply producing a student card.

## Facilities

The following is the list of major facilities available to students:

UNIX Server (SGI): The UNIX server can be accessed using X-terminals, microcomputers (with appropriate software) from various locations across campus and through via Telnet. Fortran, Java, IMSL, C, SPSS, SAS, SAS/GRAPH and MAPLE are some of the over 80 applications available on the server. The SGI is also used by students for e-mail.
Computer Lab Facilifies: The Computer Lab has 73 microcomputers on a Student Novell network, 40 X-terminals accessing the SGI, two Macintosh computers and 8 ethernet laptop docking stations. The microcomputers access Corel WordPerfect and other popular software such as SPSS for Windows, MAPLE, CorelDraw, QuatroPro and Paradox. The X-terminals access the software on the SGI. The Macintosh computers run System 7 with Word and Excel software. There are dot matrix and laser printers available to all workstations.
Dial-up Access: Students can use our computing resources from home and residences using the student dial-up system for a nominal charge.
Intemet Access: Students have access to many Internet services such as e-mail, WWW access, Telnet, FTP and many others. These are available from the Computer Lab, most microcomputers on campus, some residence buildings as well as off campus through the student dial-up service.

## Services

Information Technolgy Services offers the following services to students:
Helpdesk: Offers problem solving for computer related problems through telephone, $\theta$-mail or walk-in contact. Solutions requiring longer or multiple contacts will be referred to the Computing Consultants.
Consulting: Consulting is available on computing related issues for graduate students and faculty members. Undergraduate students can use this service for specialized, non-assignment related problems. Student Consultants are always available in the Computer Lab.

Training: Computing Consultants offer noncredit seminars and workshops on a variety of topics during the term. The seminars are open to all students at no cost. The schedules are posted in the Computer Lab and are published in the electronic "Daily News", the "Lance" and "Insight".
Documentation: An extensive HELP facility and on-line PUBLIC files are available on the WWW to provide detailed information and help. Information Technlogy Services públishes a bi-monthly newsletter called "Insight", which contains technical information for the active computer user. It is placed in the Computer Lab, at the HelpDesk and in other campus computing facilities. Handouts on various topics and services of interest to students are available at the Helpdesk.
Databases: Information Technology Services, in conjunction with Leddy Library, maintains a large collection of databases that are available for student and faculty research. These databases, available on the WWW by registered students and faculty, include the Canada Census, General Social Surveys, CANSIM and many others.
SOCR: Information Technology Services also works closely with SOCR ( Student Organized Computing Resources) which provides students with the opportunity to host their own WWW pages.
Further information is available at Information Technology Services' WWW site at: http://www.uwindsor.ca/computing/

### 13.1.4 COUNSELLING

For Academic Advising, Career Advising, Co-operative Education, Financial Counselling, Students with Special Needs, Intemational Students, and Aboriginal Education Counselling, see "Student Development and Support," 13.3.
For Medical Facilities, see "University Services," 13.2.
For Campus Ministry, see "University Services," 13.2.

## Psychological Services Centre

Located in two houses at 326 and 336 Sunset Avenue, the Psychological Services Centre provides confidential assistance to Windsor students, staff and faculty in immediate distress and to those whose difficulties are of longer standing. We also seek to promote growth and personal enrichment. The staff includes two clinical psychologists, four doctoral-level psychology interns, other graduate students from the Department of Psychology, and one post-doctoral fellow in clinical psychology.
Methods of counselling can vary from individual sessions to group, couple, or family therapy. The Centre conducts both psychotherapy groups and topic-focused groups, such as stress management, eating disorders, inter-personal relationships, women's issues, and others as needs arise. Our staff also consults with faculty and staff an any department to assist them in helping students.

Applications for service can be made in person at 326 Sunset Avenue. For additional information, call either 973-7012 or 253-3000, Ext. 7012. Hours are 8:30 a.m. to 12:00 noon, and 1:00 p.m. to 4:30 p.m., Monday through Friday. Services are free to students.

### 13.1.5 HUMAN RIGHTS OFFICE

The objective of the Human Rights Office is to create and promote an environment in which all members of the university community interact on the basis of mutual respect and which is harassment-free. The office deals with all forms of harassment, discrimination and issues of procedural, unfaimess, employing various procedures, remedies and sanctions to settle disputes. The Human Rights Commissioner has been authorized by the university to investigate complaints and request person(s) to co-operate in investigations of complaints. Confidentiality is assured in all dealings with the Office.

The University of Windsor has a policy that prohibits harassment and discrimination on the basis of gender, race, sexual orientation, disability, ancestry, place of origin, citzen-
ship, creed, age, marital staus, receipt of public assistance and family status. Behaviour constituting a violation of the University policy and/or the Ontario Human Rights Code is considered to be a serious offense.
Complaints, concerns or questions should be directed to the Human Rights Office, 310 Sunset Ave., or call 253-4232, ext. 3400.

### 13.1.6 OFFICE OF STUDENT RECRUITMENT

Representatives from this office present information about the University of Windsor to prospective students. Recruitment officers offer details with respect to undergraduate admission requirements, student awards and financial aid, residence, academic program particulars, first-year programs, student services, and campus life. Presentations are made to student groups, secondary school administrators, and parents.
This area is also responsible for conducting tours of the campus for individuals and groups. Tours include a guided walk through the campus and buildings, academic advising in the appropriate area when required, and visits to special areas as requested.
Special open house activities for prospective applicants are conducted through the year.
Those interested in the services of the Office of Student Recruitment should contact the office directly at 440 Sunset Avenue. For those from within the local calling area, the telephone number is 973 -7014. Others may use our toll free number 1-800-864-2860. In formation about special campus events for prospective students may be found at http://www.uwindsor.ca/liaison/. Tours may be booked at this site as well.

### 13.2 University Hospitality Services

University Hospitality Services provides facilities, services, programs, and activities designed to meet the diverse needs of the campus community. In addition to the administration of specific student services departments, the Office of University Hospitality Services facilitates liaison with student organizations, the general student body, and other sectors of the University.

## Residence Accommodation

The Residence Mission is to provide quality student housing in an environment that supports the academic and social needs of students. Living in residence provides students with convenient access to all campus resources and a clean and comfortable living environment while they complete their studies.
Residence Life staff are trained to offer a variety of programs and services which are designed to help students develop the skills necessary to improve their academic performance and adjust to their new environment. Programs on topics such as time management, study skills and exam preparation, communication skills, and diversity help students make a successful transition to university.
Secondary school students are guaranteed a place in residence if they are accepted to the University and submit their applications by the date specified. Residence scholarships are available to students who meet the criteria.
The University of Windsor operates six residences, four on campus and two located on the perimeter of the campus.
The Quad is comprised of four halls, Laurier, Macdonald, Cody, and Cartier. They are located on the south comer of the campus in close proximity to the main food service outlet, Cafe Chez Vanier. These
buildings are co-ed and house primarily firstyear students in double rooms.
Electa Hall is located adjacent to the Faculty of Law and one block from the Faculty of Education. This traditional-style, co-ed residence houses upper-year and graduate students in single rooms only. Room assignments are done on a first-come, firstserved basis.
The facilities available in Cartier, Cody, Electa, Laurier, and Macdonald Halls include: a laundry room, kitchenettes on each floor, a storage room, access to a Front Desk for mail, keys, and information, and common lounges and study rooms on each floor.
Clark Residence is a 224-bed, townhousestyle residence located on Sunset Avenue at Walnut Street. The Tudor-style units house seven to ten students each in single and double bedrooms, full kitchens, bathrooms, living rooms, dining rooms, storage rooms, and balconies. A limited number of studio (single) and two-bedroom apartments are also available. The facilities in Clark Residence include: two laundry rooms, a storage room, access to a Front Desk for mail, keys, and information, and two common lounges/study areas.
All residence students are required to take a meal plan.
Residence tours can be arranged through the Office of Student Recruitment, and offcampus housing information is available from the University of Windsor Students' A1liance at Ext. 3600. The Office of Residence Services also operates sixty-eight off-campus houses for students, staff, and faculty.
All students who are interested in residence accommodation are encouraged to contact the Office of Residence Services at (519) 253-3000, Ext. 3280 or website: www.uwindsor.ca or e-mail sunset@uwindsor.ca for information on the application process, residence buildings, scholarships, residence houses, and/or residence life.

## Catering and Conference Services

Catering Conference Services assists students, faculty, and staff in planning their workshops, luncheons, dances, receptions,
and banquets. All arrangements for meeting rooms and banquet rooms, liquor, food services, and the physical set-ups are made through this office. Another service offered by Catering and Conference Services is summer accommodation to non-registered students, alumni, and other visitors. Residence rooms and apartments are available.
For further information call (519) 253-4232, Ext. 3276 or 3277 , or visit Room 12, Vanier Hall.

## Food and Hospitality Services

The dining program at the University of Windsor is designed with taste, nutrition, and convenience in mind. Five restaurants and two convenience stores are located on campus and serve both the resident student and the student living off campus. Campus meal plans are available to both residents and commuters.
Locations in Vanier Hall include the main dining room, Café Chez Vanier, the Quad Lounge, and the Mini Mart convenience store. The Marketplace and the Kiosk are located in the CAW Student Centre. Dividends, in the Odette School of Business Administration Building features the offerings of Tim Horton's. The Gavel, located in the Faculty of Law Building, offers "grab and go" items for nutrition on the run.
For further information regarding campus meal plans, please call Food and Hospitality Services at (519) 253-4232, Ext. 7016.

## Document Services Centre

The Document Services Centre provides same-day copying services to meet the printing needs of students, faculty, and staff on campus. Fast, low-priced photocopies, full-colour copies, a wide selection of résumé paper, overheads, and transparencies are available. Located in the lower level of Chrysler Hall Tower, the Document Services Centre is open Monday through Friday from 8:30 a.m. until 4:30 p.m.
For further information, contact the Document Services Centre at (519) 253-4232, Ext. 2013.

## Word Processing and Desktop Publishing Services

Word Processing and Desktop Publishing Services provides typesetting of manuscripts, résumés, coverletters, papers, posters, and flyers, offers laser printing from diskette with black and white or colour. Scanning services are also available in black and white or colour. Overhead production is available.
For further information, visit Word Processing and Desktop Publishing Services at 309 Chrysler Hall Tower, or call (519) 253-4232, Ext. 2100.

## The CAW Student Centre

The CAW Student Centre is a focal point of campus activity. On the main floor of the building, the Information Desk provides a variety of services, including general campus information, processing of student I.D. cards for all full- and part-time students, locker rentals, and an off-campus housing directory. The Marketplace offers a complete variety of food items throughout the day.
In addition to a variety of meeting rooms that can be reserved by both campus and community groups, the CAW Student Centre also houses affices of the University of Windsor Students' Alliance (UWSA), the Graduate Student Society (GSS), Womyn's Centre, the Organization of Part-time University Students (OPUS), Student Media Services, The Lance (student newspaper), CJAM (student radio), the Games Room and the "Thirsty Scholar" Pub. The CAW Student Centre is also home to Medical and Health Services, the SAC Used Bookstore, a pharmacy, and a travel agency, in addition to a variety of lounge and study areas. While hours of operation for various areas and services within the building vary, the CAW Student Centre itself is open 24 hours a day, seven days a week, throughout the Fall and Winter terms.

## Marketing, Sales and Promotions

The Marketing, Sales and Promotions Department provides a contact or liaison for students, staff, and faculty with all the services offered within the Division. Complete listings of services and hours of operation
are available. Questions, comments, or concerns regarding any of the services may be brought to this office.
For further information, call (519) 254-4232, Ext. 3412 or 7065 , visit Room 272, CAW Student Centre, or find it on the web at http://www.uwindsor.ca under University Services.

## Medical and Health Services

Medical Office: The University maintains an office, staffed by full-time and part-time physicians and nurses, who will counsel, examine, and advise students who have acute or chronic medical problems. In addition, they have a major interest in Health education and life-style choices, to help prevent later illness and to preserve optimum health throughout life. The medical office is located on the second floor, CAW Student Centre. Office. Hours are 0900 hrs . to 1700 hrs . daily, Monday to Friday.
Ontario Health Insurance Plan: This plan (OHIP) covers all in-patient and out-patient hospital and medical services, and is available free of charge to all Ontario residents. Each person now has an individual card, not a "family" card as in the past. Visa students are given an individual card for which they must apply in person with their Student Authorization and which is valid for the length of their visa.
Application forms may be obtained at the University Student Health Office, CAW Student Centre.

## Bookstore

For the convenience of students, the University maintains a Bookstore located at Wyandotte and Sunset (next to the Odette School of Business Building), where textbooks, supplies and clothing may be purchased. Special orders are also taken.
The Bookstore is open year-round, from 8:30 a.m. to 4:30 p.m., Monday through Friday, and from 10:00 a.m. to 4:00 p.m. on Saturdays (except holiday weekends).

## EXTENDED HOURS

For the first two weeks of classes in September, the Bookstore is open until 8:00 p.m.,

Monday through Thursday, with regular hours on Friday;
For the first two weeks of classes in January, the Bookstore is open until 7:00 p.m., Monday through Thursday, with regular hours on Friday;
For the balance of September, October, January and February, the Bookstore remains open on Mondays until 7:00 p.m.;
For Intersession, the Bookstore is open until 7:00 p.m. for the first week of classes; for Summer Session, regular hours are observed.
The Campus Nook is open from 10:00 a.m. to 2:00 p.m., Monday to Friday, in the C.A.W. Student Centre.

## Campus Ministry

Although the University is non-sectarian in its support of campus religious life, it is aware of the importance of ethical and moral influences in the development of the individual. Assumption University, Iona College, and Canterbury College are affiliated or federated parts of the University of Windsor and are committed to providing services for all the students of the University. Students, therefore, have access to the spiritual counsel of chaplains representing various denominations.

### 13.3 Student and

## Academic Services

## Student Development and Support

Located on the first floor of Dillon Hall, the Office of Student Development and Support provides assistance to students through academic advising and student support programs. Academic advisors provide general information to all students, especially those who have not declared their academic major or who are considering changing it. Students who have already declared their major are directed to the appropriate department, which administers their program. Assistance is provided to all students who are experiencing academic difficulty and placed on academic probation.

Career counselling is also available. All University students may take advantage of several interest tests to explore their academic, educational and vocational goals. Through this interest testing and workshops, students have the opportunity of examining various academic and career options compatible with their scholariy and vocational goals and talents. A series of workshops on academic skills to assist students to become more effective and efficient leamers are offered in conjunction with the Student Information Resource Centre (S.I.R.C.) offers. Topics include Improving Reading Skills, Effective Note Taking, Time Management, Exam Strategies, and Studying and Memory.
Through the Head Start program, the Office also co-ordinates academic advising for all newly-admitted, first-year students and provides for them a comprehensive orientation to University life, thus facilitating their transition to a new learning environment.
A very effective network of over one hundred student volunteers form the Students Orienting Students (S.O.S.) Program. These students assist the staff of the Office in delivering services to the student community, S.O.S. members assist year-round in capacities such as orientation leaders, peer advisors, "Campus Match" mentors, and S.I.R.C. volunteers.

## Academic Writing Centre

For the student who experiences a degree of uncertainty with meeting the academic writing requirements at the University of Windsor, assistance and instruction is available from the Academic Writing Centre. The instruction provided is non-credit, individualized, and sequentially covers all elements of the essay writing process. An enroled University of Windsor student may register at any time by telephoning 253-4232, Ext. 3405 or by stopping in the office located at 470 Sunset Avenue.
Upon student request, writing workshops, individual tutorials, and diagnostic assessments are readily available. Daily workshops, embracing grammar and mechanics, writing style, in addition to essay writing skills, are scheduled conveniently through-
out each term. Appointments for tutorials are reserved for students in need of intensive instruction as indicated by the diagnostic assessment and/or the writing sample.

## Co-op Education and Career Services

The Office of Co-op Education and Career Services' mission is to provide quality assistance and to facilitate the employment of students by offering programs, services, information, tools, resources, and guidance to students and new graduates engaged in career planning, co-op, and job search activities.
The Office co-ordinates and administers cooperative programs in Business (undergraduate and M.B.A.), Computer Science, Engineering, Earth Sciences, Environmental Biology, and Operations Research, and Physics and High Technology.
Career-related programs and services are offered through workshops and counselling in the areas of career exploration, resume writing, job search, and interview techniques. Special events featuring alumni and recruiters are offered throughout the year to provide career information and better prepare students for the job market.
A career information centre houses educational calendars, employment literature, directories, videotapes, reference books, and other resource materials.
Job descriptions for on- and off-campus, part-time, full-time, summer, overseas, and volunteer positions are posted on our job boards.

## Program for Students with Special Needs

The Special Needs Program facilitates the integration of students with special needs by providing individualized services and accommodations necessary to eliminate as much as possible the effect of a disability. The Program provides counselling, professor liaison, exam accommodation and contact with notetakers, interpreters, scribes, and mobility assistants. A computer and access technology facility has also been established which contains specialized equipment. Individual counselling prior to registration is strongly recommended, and
students are invited to contact the Special Needs Co-ordinator (519-253-4232, Ext. 3463), whose office is located on the first floor of Dillon Hall, in the Office of Student Development and Support.

## Aboriginal Education Centre (Turtie Island)

Located at 496 Sunset Avenue, the Aboriginal Education Counsellor provides an academic, social and cultural support system to students. The counsellor will liaise with various departments, $s$, and faculties and encourage participation in all workshops and activities that will result in improved study habits and personal satisfaction with campus life. For more information about the A.E.C., call 253-4232, Ext. 3465.

## International Students' Centre

Assistance, advice and information regarding orientation, general counselling, U.S. Visitor's Visa, Canadian Immigration matters (work visa, student authorizations, visitors' visas),, and referral services can be obtained at the International Students' Centre on the first floor of Cody Hall and through the International Students' Advisor. The Centre provides a lounge for organizations clubs' functions and meetings, and houses the office of the Intemational Students' Society (I.S.S.). For assistance from the International Students' Advisor, please visit the office or call 519-253-4232, Ext. 3901, or email wuji@uwindsor.ca.

## Student Information Resource Centre (S.I.R.C.)

Located on the second floor of the C.A.W. Student Centre, SIRC provides a central, user-friendly service that offers one-stop shopping for information and referrals to campus support services. In addition, SIRC offers STEPS (Skills to Enhance Personal Success Program) in conjunction with the Office of Student Development and Support, operates the Welcome Centre each September, and oversees information and programming for off-campus students.

## Office of Student Awards and Financial Aid

The Office of Student Awards administers all of the bursary, loans, and special project components of the Ontario Student Assistance Program (including the Canada Student Loans Plan). The office administers all of the University's undergraduate scholarships, bursaries, and other awards. An emergency loan fund for OSAP-eligible University of Windsor students is also co-ordinated through this office.
Information on undergraduate scholarships, bursaries and other awards may be obtained from the office, located in the annex of the Leonard and Dorothy Neal Education Building, on Sunset Avenue at Fanchette.
Graduate students wishing information on non-OSAP awards should consult the Office of Graduate Studies.

## 14 GENERAL INDEX

Aboriginal Studies
Course Descriptions, 3.3.3
Academic Advising, 2.4.2.
See also Student and Academic Services, 13.3
Academic Information
Programs of Study, 2.1
Application Information, 2.2
Admission Requirements, 2.3
Undergraduate Degree Regulations, 2.4
Registration, 2.5
Examination and Grading Procedures, 2.6

Graduation, 2.7
Fee Regulations and Schedule, 2.8
Accounting (Course Descriptions), 5.4.1
Acting
See Dramatic Art
Additional Undergraduate Degrees, 2.4.6
Faculty of Arts and Social Sciences
See Letter of Equivalency, 3.1.5
Faculty of Science, 4.1.17
Admission Requirements, 2.3
Admission to Part-Time Studies, 2.3.4
International Admissions, 2.3.4
Mature Student, 2.3.5
Ontario Secondary Schools, 2.3.1
Other Canadian Provinces, 2.3.2
Transfer Student, 2.3.6
United States, 2.3.3
Advanced Standing Examinations, 2.3.4 Music

See Regulations, 3.15.1
Faculty of Nursing
See Admission Requirements, 10.2
Aegrotat Standing
See Appeals, 2.6.5
Anthropology
Course Descriptions, 3.20.3
Officers of Instruction, 3.20
Programs of Study, 3.20.3
Appeals, 2.6.4
Application Information
Application Deadlines, 2.2.2
Application Procedures, 2.2.1
English Language Proficiency, 2.2.3
Student Recruitment Office, 15.1.6

Art
See Visual Arts
Art History
Course Descriptions, 3.21.4
Program of Study, 3.21.2
Arts and Social Sciences
See Faculty of Arts and Social Sciences
Arts Management (Certificate), 3.23.1
Assumption University, 1.7
Athletics and Recreational Services, 13.1.2
See also Faculty of Human Kinetics, Officers of Instruction, 8

## Audit Student

See Classification of Students, 2.4.1
Automotive Engineering Option
See Mechanical, Automotive, and Materials Engineering
Averages, Calculation of, 2.6.4
Faculty of Engineering, 7.1
Awards and Financial Aid
Application Procedures, 12.1.3
Assignment Procedures, 12.1.5
Criteria, 12.1.2
Definitions, 12.1.1
Details of Awards Administered by the University, 12.3
Details of Awards Not Administered by the University, 12.4
Entrance Awards, 12.2.1
In-Course Awards, 12.2.2
Loans and Other Forms of Aid, 12.5
Multiple Awards, 12.1.6
Ontario Student Assistance Program, 12.5

Payment of Funds, 12.1.5
Procedures and Regulations, 12.1
Renewable Awards, 12.1.7
Summary of Awards, 12.2
Bachelor of Applied Science (Honours), 7.3
Bachelor of Arts, 3.2
Bachelorof Business (General)-Accounting Track, 5.1
Bachelor of Commerce, 5.1
Bachelor of Computer Science, 4.5
Bachelor of Education, 6.3
Bachelor of Fine Arts
Dramatic Art-Acting, 3.5.3
Visual Arts, 3.21.2

Bachelor of Human Kinetics (Honours), 8.1
Bachelor of Laws, 9.3.1
Bachelor of Mathematics, 4.8.1
Bachelor of Music (Honours), 3.15.2
Bachelor of Music Therapy, 3.15.2
Bachelor of Musical Arts, 3.15.2
Bachelor of Operations Research, 4.8.1
Bachelor of Science, 4.1
Bachelor of Science in Nursing (Honours), 10.3

Bachelor of Social Work (Honours), 3.19.2
Biochemistry
See Chemistry and Biochemistry
Biological Sciences
Course Descriptions, 4.3.2
Officers of Instruction, 4.3
Programs of Study, 4.3.1
Board of Govemors, 1.4
Business Administration
See Odette School of Business Administration
Calendar of the Academic Year, 1.1
Canterbury College, 1.7
Certificates, 2.4.7
Arts Management, 3.23.1
Business Administration, 5.1.7
Criminology and Criminal Justice, 3.23.2
Labour Studies, 3.23.3
Latin American and Caribbean Studies, 3.23.4

Public Administration, 3.23.5
Chemistry and Biochemistry
Course Descriptions, 4.4.2
Officers of Instruction, 4.4
Programs of Study, 4.4.1
Church Music (Diploma)
See Music-Program of Study, 3.15.2
Civil and Environmental Engineering
Course Descriptions-Civil, 7.6.4
Course Descriptions-Environmental, 7.6.5

Officers of Instruction, 7.6
Programs of Study-Civil, 7.6.1, 7.6.2
Programs of Study-Envir., 7.6.1, 7.6.3
Classical and Modern Languages,
Literatures and Civilizations
Course Descriptions
Aboriginal Studies, 3.3.3

Classical Studies, 3.3.7
German Language Option, 3.3.8
Intercultural Studies, 3.3.4
Italian Language Option, 3.3.10
Multicultural Studies, 3.3.5
Oriental Studies, 3.3.6
Russian, 3.3.9
Spanish Language Option, 3.3.11
Officers of Instruction, 3.3
Programs of Study, 3.3.2
Program Regulations, 3.3.1
Classical Studies
Course Descriptions, 3.3.7
Programs of Study, 3.3.2
Classification of Students, 2.4.1
Coat of Arms, 1.3
Combined Major, 2.4.17
Communication Studies
Course Descriptions, 3.4.2
Officers of Instruction 3.4
Programs of Study, 3.4.1
Computer Science
Co-operative Education Program, 4.5.3
Course Descriptions, 4.5.4
Officers of Instruction, 4.5
Programs of Study, 4.5.2
Regulations, 4.5.1
Computer Use, Policy on, 2.4.22
Counselling Services
Student and Academic Services, 13.3
Campus Ministry, 13.2
Financial, 13.3
Psychological, 13.1.4
Course and Sessions, Definitions, 2.4.8
Course Content, 2.4.9
Course Equivalency, 2.4.11
Course Load (Maximum), 2.4.13
Course Numbering System, 2.4.10
Creative Writing
See English-Programs of Study, 3.6.2
Criminology and Criminal Justice (Certificate), 3.23.2
Criminology
See Sociology and Anthropology, 3.20.2
Degree Regulations, Undergraduate, 2.4
Degrees Offered (Graduate), 11.4.2
Degrees Offered (Undergraduate) See Programs of Study, 2.1

## See also specific degrees (e.g., Bachelor of Arts)

Diplomas, 2.4.7
Church Music, 3.15.2
Dramatic Art
Course Descriptions, 3.5.3
Officers of Instruction, 3.5
Programs of Study, 3.5.2
Regulations, 3.5.1

## Earth Sciences

Co-operative Education Program, 4.6.2
Course Descriptions
Geology, 4.6.4
Human Geography, 4.6.3
Physical Geography, 4.6.5
Officers of Instruction, 4.6
Programs of Study, 4.6.1
Economics
Course Descriptions, 4.7.2
Officers of Instruction, 4.7
Programs of Study, 4.7.1
Education
See Faculty of Education
Electrical and Computer Engineering
Course Descriptions, 4.9.2
Officers of Instruction, 4.9
Program of Study, 4.9.1
Engineering
See Faculty of Engineering
English Language and Literature
Course Descriptions, 3.6.3
Officers of Instruction, 3.6
Programs of Study, 3.6.2
Regulations, 3.6.1
English Language Proficiency, 2.2.3
Environmental Engineering
See Civil and
Environmental Engineering
Environmental Geoscience
See Earth Sciences, Programs of Study, 4.6.1

Environmental Science (B.Sc.), 4.1.1
Examination and Grading Procedures
Appeals, 2.6.5
Calculation of Averages, 2.6.4
Grading, 2.6.3
Off-Campus Examinations, 2.6.2
Testing Procedure, 2.6.1
Extra Course Fee, 2.8.2

Faculty of Arts and Social Sciences
Degree Programs, 3.1
General, Faculty Courses, 3.2
Faculty of Education
Course Descriptions-Pre-service, 6.2.6

Course Descriptions-In-service, 6.2.9
General Information, 6.2.1
Limitation of Enrolment, 6.2.2
Officers of Instruction, 6.2
Programs of Study
Concurrent B.Sc./B.Ed., 6.2.4
Concurrent B.A. (orB.Sc.)/B.Ed./Dip. E.C.E., 6.2.5

In-service, 6.2.3
Pre-service, 6.2.7
Technological Education Internship, 6.2.8

Faculty of Engineering
Academic Regulations, 7.1
Bachelor of Applied Science, 7.3
Co-operative Education Program
Academic Standing, 7.2.4
Application Procedure, 7.2.1
Graduation Requirements, 7.2.6
Placement, 7.2.2
Sequence of Work and Study, 7.2.3
Work Term Evaluation, 7.2.5
General Engineering
Course Descriptions, 7.3.1
Non-Technical Electives, 7.3.2
Faculty of Graduate Studies and Research, 11
Application Procedures, 11.3
Degrees Offered, 11.2
Structure of the Faculty, 11.1
Faculty of Human Kinetics
Course Descriptions, 8.2
Officers of Instruction, 8
Programs of Study
Co-operative Education Program, 8.1.3.

Honours Movement Science, 8.1.1
Honours Leisure and Sport Management, 8.1.2
Faculty of Law,
Admissions Policy, 9.2
Awards and Financial Aid, 9.4
Bachelor of Laws (LL.B), 9.3.1
General Information, 9.1

Intellectual Property Law
Program, 9.3.4
Joint J.D./LL.B. Program, 9.3.3
Joint M.B.A./LL.B. Program, 9.3.2
Law Service Courses, 9.6
Officers of Instruction, 9
Programs of Study, 9.3
Special Lectures, 9.5
Faculty of Nursing
Admission Requirements, 10.2
Course Descriptions, 10.5
Foreword, 10.1
Officers of Instruction, 10
Program Regulations, 10.3
Programs of Study, 10.4
Collaborative B.Sc.N., 10.4.1
Post-Diploma B.Sc.N., 10.4.3
Primary Health Care Nurse Practitioner, 10.4.4
Second-Career B.Sc.N., 10.4.2
Faculty of Science
Degree Programs, 4.1
General, Faculty Courses, 4.2.
Family and Social Relations, 3.7
Federated and Affiliated Institutions, 1.7
Fee Regulations and Schedule
Free Tuition for Students 60 and Over, 2.8.8

Income Tax́ Certificate, 2.8.5
Interest Charges on Outstanding Accounts, 2.8.3
Non-Payment of Fees, 2.8.4
Overload Course Fee, 2.8.2
Payment of Fees, 2.8.1
Schedule of Fees, 2.8.9
Scholarships, 2.8.6
Tuition and Education Credit Certificate (T2202A), 2.8.5
Withdrawal and Refund Policy, 2.8.7
Finance (Course Descriptions), 5.4.3
Flexible Learning, 2.1.19
Foreign Students
See International Students
French Language and Literature
Course Descriptions, 3.8.3
Officers of Instruction, 3.8
Programs of Study, 3.8.2
Regulations, 3.8.1
General Information, 13

Geography
Course Descriptions-Human Geography, 3.9.2
Course Descriptions-Physical Geography, 4.6.4
Programs of Study, 3.9.1, 4.6.1
Geoinformatics
See Earth Sciences, Programs of Study, 4.6.1

Geology
Course Descriptions, 4.6.3
See also Earth Sciences, Programs of Study, 4.6.1
German Language Option
Course Descriptions, 3.3.8
Programs of Study, 3.3.2
Grading, 2.6.3
Graduate Studies
See Faculty of Graduate Studies and Research
Graduation, 2.7
Greek Language and Literature
Course Descriptions
See Classical Studies, 3.3.7
Programs of Study, 3.3.2
Greek and Roman History
See Course Descriptions, Classical Studies, 3.3.7
Hispanic Studies
Course Descriptions, 3.3.11
Programs of Study, 3.3.2
History
Course Descriptions, 3.10.3
Officers of Instruction, 3.10
Programs of Study, 3,10.2
Regulations, 3.10.1
History of the University, 1.2
Holy Redeemer College, 1.7
Human Geography
Course Descriptions, 3.9.2
Human Kinetics
See Faculty of Human Kinetics
Human Rights Office, 13.1.5
Information Technology Services, 13.1.3

Industrial and Manufacturing Systems
Engineering
Course Descriptions, 7.8.2
Officers of Instruction, 7.8
Program of Study-Industrial Engineering, 7.9.1
Intellectual Property Law
Program, 9.3.4
Intercultural Studies
Course Descriptions, 3.3.4
Interdisciplinary Programs
See also specific programs
Faculty of Arts and Social Sciences, 3.23
Faculty of Science, 4.1
International Relations and Development
Studies, 3.11
Intemational Students
Application, 2.2
Admission, 2.3.3, 2.3.4
Intemational Students Centre', 13.3
Intemational Study Programs, 2.1.18
Iona College, 1.7
Italian Language Option
Course Descriptions, 3.3.10
Programs of Study, 3.3.2
Japanese,
Course Descriptions
See Oriental Studies, 3.3.3
Joint J.D./LL.B. Program, 9.3.3
Joint M.B.A./LL.B. Program, 9.3.2
Kinesiology
See Faculty of Human Kinetics, Programs of Study, 8.1
Labour Studies, 3.12
Certificate in, 3.23.3
Language and Logic, 3.13
Late Payment Charges, 2.8.3
Latin American and Caribbean Studies in 3.23.4

Latin Language and Literature, Course Descriptions

See Classical Studies, 3.3.7
Programs of Study, 3.3.2
Law
See Faculty of Law
Leisure and Sport Management, 8.1.2

Letter of Equivalency
Faculty of Arts and Social Sciences, 3.1.5

Faculty of Science, 4.1.17
Letters of Permission, 2.4.5
Liberal and Professional Studies, 3.14
Library, 13.1.1 Staff, 1.8
Management and Labour Studies (Course Descriptions), 5.4.2
Management Science (Course Descriptions), 5.4.4
Marketing (Course Descriptions), 5.4.5
Materials Engineering Option
See Mechanical, Automotive, and Materials Engineering
Mathematics and Statistics
Course Descriptions-Mathematics, 4.8.2

Course Descriptions-Statistics, 4.8.3
Officers of Instruction, 4.8
Programs of Study, 4.8.1
Mature Student, 2.3.5
Mechanical, Automotive, and Materials Engineering
Course Descriptions-Materials, 7.9.3
Course Descriptions-Mechanical, 7.9.2

Officers of Instruction, 7.9
Programs of Study-Mechanical Engineering, 7.9.1
Minor, 2.4.15
Environmental Science, 4.1.13
General Science, 4.1.14
Science, Technology and Society, 4.1.15
See also individual departments
-Programs of Study
Movement Science, 8.1.1
Multicultural Studies
Course Descriptions, 3.3.5
Program of Study, 3.4.2
Music
Course Descriptions-Academic Studies, 3.15.3
Course Descriptions-Performance Studies, 3.15.4
Officers of Instruction, 3.15
Programs of Study, 3.15.2
Regulations, 3.15.1

Non-Payment of Fees and Charges, 2.8.4
Nursing
See Faculty of Nursing
Odette School of Business Administration
Accounting (Course Descriptions), 5.4.1
Business Policy and Strategy (Course Descriptions), 5.4.6
Finance (Course Descriptions), 5.4.3
Management and Labour Studies (Course Descriptions), 5.4.2
Management Sclence (Course Descriptions), 5.4.4
Marketing (Course Descriptions), 5.4.5
Minor, 5.1.10
Programs of Study
Bachelor of Business (General)-Accounting Track, 5.1.6

Bachelor of Commerce (Honours Business Administration), 5.1.2
Bachelor of Commerce (Honours Business Administration and Computer Science), 5.1.4
Bachelor of Commerce (for University Graduates), 5.1.5
Certificate Programs, 5.1.8
Co-operative Education Program. 5.1.1

Off-Campus Examinations, 2.6.2
Officers of Administration, 1.6
Ombudsperson and Race Relations Officer,
See Human Rights Office, 13.1.5
Operations Research
See Mathematics and Statistics, 4.8.1
Options, 2.4.14
Oriental Studies, 3.3.2
Course Descriptions, 3.3.5
Overload
See Extra Course Fee, 2.8.2
See also Course Load, 2.4.13
Payment of Fees, 2.8.1
Philosophy
Course Descriptions, 3.16.3
Officers of Instruction 3.16
Programs of Study, 3.16.2
Regulations, 3.16.1
Physical Geography
Course Descriptions, 4.6.4

Physics
Course Descriptions, 4.9.2
Officers of Instruction, 4.9
Programs of Study, 4.9.1
Plagiarism, Policy on, 2.4.21
Planning
Course Descriptions, 3.20.4
Officers of Instruction, 3.20
Political Science
Course Descriptions, 3.17.2
Officers of Instruction, 3.17
Programs of Study, 3.17.1
Programs of Study, 2.1
Program Transfers, 2.4.16
Provisional Registration, 2.5.2
Psychology
Course Descriptions, 3.18.2
Officers of Instruction, 3.18
Programs of Study, 3,18.1
Public Administration (Certificate), 3.23.5
Registration, 2.5
Provisional, 2.5.2
Time and Place, 2.5.1
Withdrawal, 2.5.3
Regulations, Undergraduate, 2.4
Repetition of Courses, 2.4.12
Residence
See University Hospitality Services, 13.2
Residency Requirements, 2.4.3
Returning Students, 2.4.8
Roman History
Course Descriptions
See Classical Studies, 3.3.7
Russian
Course Descriptions, 3.3.9
Scholarships, 2.8.6
See also Awards and Financial Aid, 7
Senate, 1.5
Senior-level Course Requirements, 2.4.18
Social Work
Course Descriptions, 3.19.3
Officers of Instruction, 3,19.1
Program of Study, 3.19.2
Regulations, 3.19.1
Sociology
Course Descriptions, 3.20.1
Officers of Instruction, 3.20
Programs of Study, 3.20.1

Spanish Language Option
Course Descriptions, 3.3.11
Programs of Study, 3.3.2
Standing Required for Continuation, 2.4.19
Standing Required for Graduation, 2.4.20
Statistics
See Mathematics and Statistics, 4.9
Student and Academic Support, 13.3
Student Recruitment, Office of, 13.1.6
Technological Education Intemship
Program, 6.2.8
T.O.E.F.L

See English Language Proficiency, 2.2.3
Transfer Credit, 2.4.6
Tuition and Education Credit Certificate (T2202A), 2.8.5
University Professors, 1.9
University Hospitality Services, 13.2
Visual Arts
Course Descriptions-Art History, 3.21 .5

Course Descriptions-Visual Arts, 3.21 .4

General Information/Regulations, 3.21.1
Master of Fine Arts, 3.21.3
Officers of Instruction, 3.21
Programs of Study, 3.21.2
Withdrawal, 2.5.3
Women's Studies, 3.22
Certificate in, 3.23.6
Programs of Study, 3.22.1
Course Descriptions, 3.22.2

## 15 GLOSSARY

This glossary explains some terms which are used frequently throughout this Calendar. It is intended as a quick-reference guide and may not necessarily offer the complete, official definitions and explanations as they are apply to the University's programs and the administration of its regulations.

Antirequisite - A course or other level of attainment which, if already successfully completed, does not permit registration for credit in another course, and which cannot be taken for credit concurrently with that other course.
Attempt - Generally, any course for which a final grade has been assigned, including "WF" - Withdrew Failing. Failures which are repeated and for which credit is subsequently earned may or may not be considered as attempts, depending upon individual faculty regulations. If a student transfers from one program to another, not all previous attempts necessarily will be counted as attempts within the student's new program.
Bachelor's Degree (Baccalaureate) - The first university degree, for which a student follows a specific undergraduate program (e.g., B.A.- Bachelor of Arts).

Certificate - At the undergraduate level, a program consisting of twelve one-term course equivalents in a specialized area(s) of study.
Corequisite - Acourse which must be taken concurrently with another course which lists it as a corequisite.
Course - A unit of study identified by a course title and a unique course number. Unless otherwise specified, the term "course" refers to a one-term, 3.0 credit course offering.
Two-Term Course - A course taught over two terms, usually the Fall and Winter terms. A two-term course normally carries twice the credit value of a oneterm course, or 6.0 credits.

Half Course - A course having a value of 1.5 credits. Half courses may be offered for fewer contact hours per week over an entire term, or may be concentrated in either the first or tyhe second half of a term.
Credit - A unit of academic value earned within a particular program. A credit value of 3.0 normally is assigned to a one-term (13week) course. A two-term course, therefore, would have a credit value of 6.0 ; a halfcourse 1.5.
Other credit values may be assigned. Some courses may be taken for varying amounts of credit within a specific range (e.g. 2.0 to 9.0 credits); other courses may be offered for alternate credit values (e.g., 3.0 or 6.0 credits).
Credit values are used in the calculation of averages for academic standing and in the determination of the student's year or level within a specific program. (See also "Weight").
Cross-Listed Courses - Courses which are listed under two different numbers in two different subject areas. Cross-listed courses may be taken in either subject area, but credit may be earned in only one course.
Cumulative Average - An average which is based upon all courses counted as attempts within a student's current program.
Diploma - At the undergraduate level, a program of study less extensive than a degree program, but requiring more courses than a certificate program.
Full-Time Student - A student who is registered in four or more undergraduate courses in a term. (See 2.4.1.)
Linked Courses - Credit may not be allocated to certain courses until a subsequent course is also successfully completed. Such "linking" of courses will be noted in the course descriptions.
Major - A formal, specific concentration of courses within a subject area as defined by its degree program(s).
Major Average - An average based upon courses attempted within the student's ma-
jor as defined by the student's degree program.
Option - Generally, a non-major course not specifically required in a program, but for which credit may be eamed towards the degree, certificate, or diploma offered in that program.
Specific restrictions may apply in some programs.
Part-Time Student - A student who is registered in less than four undergraduate courses in a term (i.e., less than 12.0 credits). (See 2.4.1).
Prerequisite - A course for which credit must have been eamed prior to registration in another course which lists it as a prerequisite. ("Consent of Instructor" may be listed as an altemative to, or in addition to a given course prerequisite.)
Program - A combination of courses in a subject area (or areas) which fulfills the requirements for a degree, certificate, or diploma.
Program Approval - For students in certain programs, consulting with and obtaining the signed approval of course selections by a faculty advisor may be required as part of the registration process.
Registration - The process of selecting courses, obtaining faculty approval for course selections where necessary, and making the appropriate arrangements with the University to pay the required fees.
Required Course - Acourse for which credit must be earned in a student's program.
Semester - Same as "Term" (see below).
Standing Required - Individual faculties and set out specific requirements which students must meet in order to continue in their programs. These requirements normally include the maintenance of specific minimum cumulative and major averages, and also place certain restrictions upon the number of courses a student is permitted to have failed. Progress is reviewed at the end of each term.
Term - An academic period of thirteen weeks' duration. The Fall term extends from September to December; the Winter term
from January to April. Intersession, which extends for six weeks from mid-May through the end of June, and Summer Session, which extends from the beginning of July to mid-August are considered together as a single term.
Transcript - A document issued by the Office of the Registrar which records all aspects of a student's registrations and grades obtained at the University. An "official" transcript is one which bears the official seal of the University and which is sent directly to another institution or official of an organization. "Unofficial" transcripts also may be issued to the student.
Withdrawal - A formal procedure set out within the regulations of the University for withdrawing from an individual course(s), or from the University entirely.
Weight - For students registered in the Faculty of Engineering, the calculation of averages is based upon a weighting factor. The weight of an individual course is equal to the number of lecture hours per week, plus onehalf of the number of laboratory and/or tutorial hours per week.
Year (or Semester) - Attaining a particular Year or Semester level depends upon earning credit for a specific number of courses. The number of courses normally taken in one term/semester determines the Semester level; the number of courses normally taken in a program over both the Fall and Winter terms of a "regular" academic year would determine the Year level. In some programs, the attainment of a specific level also may reflect the earning of credits in a particular group or sequence of courses.





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