XVIII. Courses of Instruction

Faculty of Arts

Atkinson Faculty of Liberal and Professional Studies

Faculty of Education

Faculty of Environmental Studies

Faculty of Fine Arts

Glendon

Faculty of Pure and Applied Science

Courses of Instruction

Administrative Studies – Atkinson

Office:
School of Administrative Studies
282 Atkinson Building, Tel: 416-736-5210, Fax: 416-736-5963; e-mail:
akadms@yorku.ca
Director of the School:
B. Gaber
Undergraduate Program Directors:
P. Ng (Associate Director), L. Li
Coordinators of Administrative Studies:
Auditing: K. Bewley
Finance: K. Ho
Financial Accounting: B. Gaber, L. Hayes
Human Resource Management: S. McKenna
Income Tax Law: J. Magee
Information Systems: I. Splettstoesser
Introduction to Administrative Studies: L. Karakowsky
Law, Management Science: H. Bartel
Management: R. Hoffman
Management Accounting: Y. Ohta
Marketing: L. Li
Professors:
H. Bartel, M. Belcourt
Associate Professors:
K. Bewley, W.F. Cavanagh, B.G. Gaber, K. Ho, R. Hoffman,
L. Karakowsky, S. Kwon, L. Li, K.G. Macdonald, J.C.C. Macintosh,
J.E. Magee, M.F. Maute, K.J. McBey, S. McKenna, P. Ng,
J.M. Parkinson, M.L. Ripley, K. Snow, G. Spraakman
Assistant Professors:
P.F. Carbonell, Y. Chuang, K.P. Evans, P. Gelinas, K. Lehrer, W.W. Lim,
Y. Ohta, R. Ophir, H. Qudrat-Ullah, J. Richardson, C. Sanchez-
Rodriguez, M. Schwartz, P. Singh, I. Splettstoesser
Assistant Professor Emerita:
J.E. Nicholson
Special Assistant Professors:
D. Jurkowski, J. Kerr
Sessional Lecturers:
L. Hayes, A. Marshall
Lecturers:
S. Deutsch Salamon, M. Ducharme, M. Karakul, S. Lazrak, L. Lai,
E. Lasry, X. Li, I. Lu, S. Peng, M. Porporato, J. Shen, N. Tahani,
K. Thomson

Courses in Administrative Studies

AK/ADMS 1000 3.00 Introduction to Administrative Studies. This
course provides an overview of the context within which modern
organizations operate. The course will examine the development of
organizational and managerial theories. A number of contemporary issues
and the organizational responses will be discussed. Note: Not open to
students who have taken AK/ADMS 2000 3.00, AK/ADMS 2000 6.00 or
AK/ADMS 2010 3.00.

**AK/ADMS 1500 3.00 An Introduction to Accounting: The Analysis and
Use of Financial Information.** An introduction to accounting covering
basic concepts in financial accounting, managerial accounting and finance
and their interrelationships. This course satisfies a curriculum requirement
of the Human Resources Professional Association of Ontario. Note: This
course does not qualify towards the BAS degree.

AK/ADMS 2300 6.00 Research Methods in Health Studies. This is an
introductory course in health care research from an epidemiological
perspective. The purpose of this course is to focus on research design;
methodological problems and issues; and specific statistical approaches
used to analyze this type of research. Prerequisite: AK/MATH 1710 6.00
or AK/MATH 1720 6.00. Note: Not open to students who have taken AK/
NURS 2700 6.00.

AK/ADMS 2400 3.00 Introduction to Organizational Behaviour. This
course introduces concepts of individual and group behaviour as they
affect performance in organizations. Topics covered include motivation,
communication, decision-making, leadership and structural issues.
Lectures and case discussions are employed to develop theoretical
models and illustrate their use. Prerequisite: AK/ADMS 1000 3.00.

AK/ADMS 2430 3.00 Business in the Canadian Context. An
examination of the interaction between business and government. The
impact of key public sector institutions and policies on business practices
and strategic decision making and current political, economic and legal
issues in the Canadian context are addressed. Prerequisite: AK/ADMS
1000 3.00. Note: Not open to students who have taken AK/ADMS 2410
3.00 or AK/ADMS 2420 3.00.

AK/ADMS 2500 3.00 Introduction to Financial Accounting. An
overview of the accounting discipline, useful to both majors and non-
majors. Includes accounting history, the uses of accounting information in
personal and business contexts and the rudiments of financial reporting.
Note 1: AK/ADMS 1000 3.00 is not a prerequisite for AK/ADMS 2500 3.00,
but is strongly recommended. Note 2: Requires access to a personal
computer that runs Windows 98 Second Edition or higher, with multimedia
capability and Internet access. For students without personal access to
these computing requirements, University microlabs are available.

AK/ADMS 2510 3.00 Introduction to Management Accounting.
Managers require relevant information for planning, controlling and
decision-making purposes. This course examines the accounting
techniques available to satisfy those needs. Prerequisites: AK/MATH 1710
6.00, AK/ECON 1000 3.00, AK/ADMS 2500 3.00. Note: Not open to
students who have taken or are taking AK/ADMS 2520 3.00.

AK/ADMS 2600 3.00 Human Resources Management. This course
examines a number of issues in Canadian human resources management
including: human resources planning, recruitment, selection, performance
appraisal, industrial relations, and training and development. Note: Not
open to students who have taken AK/ADMS 4030 6.00 or AK/ADMS 4040
3.00.

AK/ADMS 3000 3.00 Directed Reading. A reading and research course
suited to students with special interests. Students will select areas of study
in consultation with an appropriate faculty member. Prerequisites: 78
credits including AK/ADMS 2000 3.00, AK/ECON 1000 3.00, AK/ECON
1010 3.00, and six credits in management science, or, for students with
equivalent preparation, permission of the director of administrative studies.
Note: Students must be accepted by a faculty supervisor before they can
register in either of these courses. The course transaction form for such
courses must be submitted with a note from the supervisor stating his/her
willingness to perform this task. Permission of the department Chair is also
required.

AK/ADMS 3000 6.00 Directed Reading. A reading and research course
suited to students with special interests. Students will select areas of study
in consultation with an appropriate faculty member. Prerequisites: 78
credits including AK/ADMS 2000 3.00, AK/ECON 1000 3.00, AK/ECON
1010 3.00, and six credits in management science, or, for students with
equivalent preparation, permission of the director of administrative studies.
Note: Students must be accepted by a faculty supervisor before they can
register in either of these courses. The course transaction form for such
courses must be submitted with a note from the supervisor stating his/her
willingness to perform this task. Permission of the department Chair is also
required.

AK/ADMS 3120 3.00 Gender Issues in Management. Uses feminist
principles and pedagogy to examine gender issues relevant to managing
career and life, including for example pay equity, harassment,
stereotyping, power and assertiveness, diversity, mentoring, self-care and
balance, with the goal of understanding issues and effecting change. Note:
Not open to students who have taken AK/ADMS 3120 3.00, AK/ADMS
3130G 3.00, AK/ADMS 4120 3.00.

AK/ADMS 3200 3.00 Introductory Marketing. The course applies
marketing concepts, terminology and strategic analysis to a study of
organizations in the private and public sector. Utilizes different techniques

including lecture, individual and group oral and written presentation, computer simulation and/or case study.

AK/ADMS 3300 3.00 Decision Analysis. This course provides an introduction to decision analysis under conditions of certainty, uncertainty, risk and competition. Both single person and group decision making are covered. Problems from many areas of managerial decision making are considered. Prerequisites: AK/ADMS 2400 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00 and completion of the departmental management science requirement.

AK/ADMS 3320 3.00 Quantitative Methods I. An integrated approach to analyzing business problems from various functional areas. Practical business problems are analyzed using quantitative techniques including probability, statistical inference, estimation and regression as well as non-parametric approaches. Prerequisites: AK/MATH 1710 6.00 or one OAC mathematics course, AK/ADMS 1000 3.00. Note 1: This course is not open to students who have taken AK/MATH 1720 6.00, AK/MATH 2570 3.00, AK/ECON 3470 3.00 or equivalent; and is not open to mathematics majors. Note 2: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 3320 3.00 and AK/MATH 2720 3.00

AK/ADMS 3330 3.00 Quantitative Methods II. Continues with a case-oriented approach to quantitative business analysis and research methodologies. Statistical techniques, operational research techniques such as linear programming and modelling, metric and non-metric data analyses are amongst the techniques used. Prerequisite: AK/ADMS 3320 3.00. Note 1: This course is not open to students who have taken AK/ECON 3480 3.00, AK/MATH 3170 6.00, or equivalent; and is not open to mathematics majors. Note 2: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 3330 3.00 and AK/MATH 2730 3.00

AK/ADMS 3350 3.00 Bayesian Inference and Decision Making. This course takes a quantitative approach to decision making, including a coverage of Bayesian inference, decision theory, prior, posterior and preposterior analysis using discrete and continuous distributions. Emphasis is given to understanding concepts and the use and application to administration. Prerequisite: AK/ADMS 3320 3.00 or, for students with equivalent preparation, permission of the director of administrative studies.

AK/ADMS 3351 3.00 Operations Management. Introductory treatment of operations research topics as support to strategic management policies and to the functional areas in administration. This includes linear programming, formulation, graphical solutions, simplex solutions, sensitivity analysis, duality and computer solutions; assignment/transportation problems, integer programming, network models, dynamic programming and computer simulation.

Cross-listed to: AK/ADMS 3351 3.00 and AK/ECON 3120 3.00

AK/ADMS 3352 3.00 Sampling Techniques and Survey Design. This course deals with different sampling techniques and their applications to management problems. Survey design, pilot surveys, use of focus groups, in-person interviews, mail surveys, and polling, will also be dealt with. Prerequisite: AK/ECON 3470 3.00 or AK/ADMS 3320 3.00 or, for students with equivalent preparation, permission of the Chair of economics. Note: This course counts as an elective in an economics major.

Cross-listed to: AK/ADMS 3352 3.00 and AK/ECON 3130 3.00 and AK/MATH 2752 3.00

AK/ADMS 3360 3.00 Integrated Logistics Management I. The purpose of this course is to describe the role of physical distribution and transportation in business and the impact that these factors can have on market share and profitability in a competitive marketplace. Prerequisites: AK/ADMS 2410 3.00 or AK/ADMS 2420 3.00, AK/ADMS 2510 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00 and completion of the departmental management science requirement.

AK/ADMS 3400 3.00 Occupational Health and Safety. Covers federal and provincial occupational health and safety legislation, hazard identification and control, physical agents, chemical agents, socio-psychological aspects of health and the management of safety programs. Prerequisite: AK/ADMS 1000 3.00, for all BAS and BAS Honours students.

Cross-listed to: AK/ADMS 3400 3.00 and AK/HLST 3240 3.00

AK/ADMS 3410 3.00 Training and Development. Covers the corporate training process of needs analysis, objective setting, programme design, adult education, equity in training, methods and evaluation, as well as alternatives to training and the role of stakeholder. Prerequisites: AK/ADMS 1000 3.00, AK/ADMS 2400 3.00, or, an introductory psychology or sociology course. Prerequisites waived for non-BAS students taking it solely as an elective. Note: Not open to students who have taken AK/SOCI 3930 6.00, AK/SOCI 4500 6.00, AK/ADMS 3410 6.00.

AK/ADMS 3420 3.00 Employment Law. Provides a basic understanding of the law and issues governing the employer-employee relationship. The rights and obligations of employers and employees are examined, as well as labour relations in unionized settings. Prerequisite: AK/ADMS 3480 3.00.

AK/ADMS 3422 3.00 Industrial Relations. This course examines the history of unions, the nature of the industrial relations systems including the legal framework, the social psychological climate, contract negotiation and administration. Ideologies and trends are discussed. Prerequisite: AK/ADMS 2400 3.00. Prerequisites waived for non-BAS students taking it solely as an elective. Note: Not open to students who have taken AK/ADMS 3310 3.00.

AK/ADMS 3430 3.00 Human Resources Planning. This course provides students with an understanding of the personnel planning process, the qualitative and quantitative techniques used in forecasting personnel requirements, and feasible solutions to shortages or surpluses. Prerequisite: AK/ADMS 3480 3.00 or AK/ADMS 2600 3.00.

AK/ADMS 3440 3.00 Managerial and Interpersonal Skills. This course explores selected organizational behaviour issues in an experiential format. Students simulate, experience and analyze organizational processes such as leadership, managing a culturally diverse work force, organizational and individual learning, organizational socialization and decision making. Prerequisite: AK/ADMS 2400 3.00.

AK/ADMS 3450 3.00 Employment Equity and Diversity. Examines employer's role in the equitable management of a diverse workforce. Policies and practices which facilitate the accommodation and benefits of a diverse workforce, are discussed. Prerequisite: AK/ADMS 2600 3.00 (formerly AK/ADMS 3480 3.00).

AK/ADMS 3470 3.00 Recruitment, Selection and Performance Appraisal of Personnel. This course enables the student to identify the appropriate recruiting methods for locating and attracting different types of candidates, explains the key steps in the selection process, evaluates the validity of various selection techniques and describes various performance appraisal methods. Prerequisite: AK/ADMS 3480 3.00.

AK/ADMS 3490 3.00 Compensation. This course provides the student with an understanding of the objectives of a compensation program; the process and techniques of wage and salary determination; issues and problems in incentive systems, benefits and services and the management of these programs. Prerequisite: AK/ADMS 3480 3.00.

AK/ADMS 3510 3.00 Managerial Cost Accounting and Analysis. A course in theories and techniques of cost accounting and management accounting. Emphasis is placed on cost accumulation for purposes of (a) asset valuation and income measurement, and (b) planning and control. Prerequisites: AK/ADMS 2500 3.00, AK/ADMS 2510 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00, AK/ADMS 3320 3.00.

AK/ADMS 3511 3.00 Management Information Systems. Overview of information systems and technology: how information systems are selected, designed and managed to provide information needed to run organizations successfully. Topics include the strategic role of information systems, ethical considerations, technology, information systems risks,

and security and control considerations. Prerequisite: AK/ADMS 1000 3.00.

AK/ADMS 3520 3.00 An Overview of Canadian Income Taxation. An overview of the taxation of personal and corporate incomes of Canadian taxpayers, related tax planning and GST implications. Note: Not open to students who have taken or taking AK/ADMS 3560 6.00, AK/ADMS 4561 3.00 or AK/ADMS 4562 3.00.

AK/ADMS 3530 3.00 Finance. The role of financial managers in accomplishing organizational objectives; uses of financial statements, present value theory, risk/return analysis, leverage, cost of capital, resource allocation models. Prerequisites: AK/ADMS 2510 3.00; AK/ECON 1000 3.00; AK/ECON 1010 3.00; AK/ADMS 3320 3.00. Degree credit exclusion: AS/ECON 4400 3.00. Note: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

AK/ADMS 3535 3.00 Financial Statement Analysis. Designed to provide a comprehensive discussion of financial statement analysis and is keyed to level I of the Chartered Financial Analysts (CFA) Exam. The course is organized into three parts: analysis and overview; accounting analysis; and financial analysis. Prerequisites: AK/ADMS 2500 3.00 and AK/ADMS 2510 3.00.

AK/ADMS 3541 3.00 Personal Financial Planning. Introduces financial planning techniques used in professional practice and follows through the steps and methods involved in developing personal financial plans. Topics include taxation, investment alternatives, targeting savings levels, insurance, retirement planning and relevant legislation. Prerequisites: AK/ADMS 2500 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00. Note: Not open to students who completed AK/ADMS 3130B 3.00.

AK/ADMS 3585 3.00 Intermediate Financial Accounting I. This course, in conjunction with AK/ADMS 3595 3.00, develops thorough knowledge and understanding of generally accepted accounting principles and financial statement analytical skills by examining various technical areas of financial accounting. Prerequisites: AK/ADMS 2500 3.00, AK/ECON 1010 3.00. Note: Not open to students who are taking or have taken AK/ADMS 3500 6.00, AK/ADMS 3570 3.00, AK/ADMS 3590 3.00.

AK/ADMS 3595 3.00 Intermediate Financial Accounting II. This course is a continuation of AK/ADMS 3585 3.00. It develops a thorough knowledge and understanding of generally accepted accounting principles and financial statement reporting practices in Canada. Prerequisite: AK/ADMS 3585 3.00. Note: Not open to students who are taking or have taken AK/ADMS 3500 6.00, AK/ADMS 3570 3.00, AK/ADMS 3590 3.00.

AK/ADMS 3610 3.00 Elements of Law: Part One. This course seeks to give insight into the role of the lawyer in relation to that of the judge, legislator and administrator in moulding the law. Against this general background various legal principles and theories are examined so as to equip the student to analyze and define legal issues. Prerequisite: AK/ADMS 1000 3.00.

AK/ADMS 3620 3.00 Elements of Law: Part Two. An examination of more advanced topics of private law with emphasis being laid on areas related to the organization and management of business relations. Prerequisite: AK/ADMS 3610 3.00. Note: Not open to students who have completed AK/ADMS 4020 6.00.

AK/ADMS 3710 3.00 Comparative Health Administration. A study of the health administrative systems in a variety of countries. Emphasis will be placed upon the issues and problems of health systems in both developed and developing countries, the strategies that have been developed to deliver health care, and the role of the formal and informal sectors in the health care field. Note: Not open to students who have taken AK/ADMS 3420 6.00.

AK/ADMS 3720 3.00 Program Evaluation in Health Care Part I. A blend of theory and practice that provides students with an understanding of the concepts and implementation of program evaluation in health care.

Students develop the ability to critique program evaluation reports and develop a proposal to evaluate a program. Prerequisite: For BScN students AK/NURS 3300 3.00 or AK/NURS 2700 6.00. All other students AK/ADMS 2300 6.00 or, for students with equivalent preparation, permission of the director of nursing. Note: Not open to students who have completed AK/ADMS 3130Q 3.00.

Cross-listed to: AK/ADMS 3720 3.00 and AK/NURS 3500 3.00

AK/ADMS 3740 3.00 Health and Aging. A review of the epidemiology of acute and chronic disease as it informs the problem of providing health care and health services for an aging population. Special attention is given to societal implications of health problems characteristic of elderly populations. Note: Not open to students who have completed AK/ADMS 3130S 3.00.

AK/ADMS 3750 3.00 Behavioural and Social Aspects of Health. This course explores the role of behavioural and social factors in determining health status and the effectiveness of health care. It addresses such topics as health beliefs, attitude and prejudice, communication processes, culture, environment, stress and life transitions and crises. Note: Not open to students who have completed AK/ADMS 3130T 3.00.

AK/ADMS 3810 3.00 Introduction to Real Estate. This course provides an overview of the various aspects of real estate administration for non-specialists as well as those students intending to take other real estate courses. Prerequisite: AK/ADMS 1000 3.00.

AK/ADMS 3820 3.00 Real Estate Law I. A discussion of the development of the law of real property in the context of the common law and current legislation. Emphasis will be placed on practical considerations in the methods of the lawyer and the businessman in arriving at their conclusions. Prerequisite: AK/ADMS 3810 3.00. Note 1: Not open to students who have taken AK/ADMS 3130 3.00 (Real Estate Law). Note 2: Students are strongly recommended to complete AK/ADMS 3610 3.00 (Elements of Law Part I) before taking this course.

AK/ADMS 3900 3.00 The Practice of General Management. Instructs participants in the strategic analysis and planning process for medium-sized and large businesses. Models explaining the integration of the functional areas are combined with strategic process models. Modes of instruction include lectures and simulations. Prerequisites: 27 credits, or equivalent, within the administrative studies major. Note 1: Use of an IBM-compatible computer required.

AK/ADMS 3920 3.00 New Venture and Small Business Management. An understanding of the entrepreneurial process, from idea generation to new enterprise creation, is developed through lectures, case studies and simulations. The functional topic areas of business are developed as they relate specifically to planning for new ventures (including entrepreneurship) and small business management. Prerequisites: AK/ADMS 1000 3.00; AK/ADMS 2500 3.00.

AK/ADMS 3960 3.00 International Business. Issues and problems facing the manager in the international environment. Areas of study include multinational corporation, factors leading to successful performance, analysis of basic managerial functions in different countries, assessment of the nature and scope of international business and global business strategy. Prerequisite: AK/ADMS 1000 3.00. Note: Not open to students who have completed AK/ADMS 3130H 3.00.

AK/ADMS 4000 3.00 Directed Reading. A reading and research course suited to students with special interests. Students will select areas of study in consultation with an appropriate faculty member. Prerequisites: 78 credits including AK/ADMS 1000 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00, and six credits in management science. Open only to students in Honours programs. Note: Students must be accepted by a faculty supervisor before they can register in 4000-level directed reading courses. The course transaction form for such courses must be submitted with a note from the supervisor stating his/her willingness to perform this task. Permission of the department Chair is also required.

AK/ADMS 4000 6.00 Directed Reading. A reading and research course suited to students with special interests. Students will select areas of study in consultation with an appropriate faculty member. Prerequisites: 78

credits including AK/ADMS 1000 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00, and six credits in quantitative methods. Open only to students in Honours programs. Note: Students must be accepted by a faculty supervisor before they can register in 4000-level directed reading courses. The course transaction form for such courses must be submitted with a note from the supervisor stating his/her willingness to perform this task. Permission of the department Chair is also required.

AK/ADMS 4000A 3.00 Directed Reading.

AK/ADMS 4000A 6.00 Directed Reading.

AK/ADMS 4010 3.00 Organization and Administrative Theory. Examines in depth the development of administrative thought and organizational theories. Current organizational theories will be related to contemporary administrative society. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 2400 3.00, or for other students, a grade of B or better in AK/ADMS 2400 3.00.

AK/ADMS 4050 3.00 Advanced Industrial Relations. Collective employer-employee relations: the structure, function and government of the modern trade union movement. Labour legislation, collective bargaining process and procedures and public policy towards industrial relations. Prerequisites: For students in the Honours program, 78 credits including AK/ADMS 3422 3.00, or for other students, a grade of B or better in AK/ADMS 3422 3.00.

AK/ADMS 4210 3.00 International Marketing. A study of the management of international marketing activities. Emphasis is placed upon policy and strategy formulation and the environmental constraints within which these activities take place. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4215 3.00 Business to Business Marketing. Focuses on problems and concepts particular to business-to-business marketing. The basic marketing concepts introduced in AK/ADMS 3200 3.00 along with a conceptual framework of organization buyer behaviour are utilized to illustrate the unique nature and challenges of this market. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00. Note: Not open to students who have taken AK/ADMS 3210 3.00.

AK/ADMS 4220 3.00 Consumer Behaviour. Introduces students to the general perspectives currently taken in the study of consumer behaviour. Emphasis is on consumer decision processes and the influence of social, cultural and psychological factors on consumer behaviour, including a segment on women as consumers. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4225 3.00 Retailing Management. Develops a framework for identifying, appraising and formulating retail marketing strategies; stresses the interrelationships among manufacturers, distributors and final consumers. Areas studied include trade area analysis, design and layout, merchandising and inventory control, retail math, trends and technology in retailing. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00. Note: Not open to students who have taken AK/ADMS 3260 3.00.

AK/ADMS 4230 3.00 Marketing Channels. Integrates theory and practice of marketing distribution channels, concentrating on power and conflict and interrelationships with strategic planning, make or buy decisions and transaction cost analysis. The course utilizes textbook, recent journal articles, seminar participation and cases. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4235 3.00 Product Management. This course examines marketing decisions involved in product management, giving student experience in tackling typical problems facing a brand or product manager. Strong managerial and case study emphasis, centring on consumer products with some discussion of industrial marketing. Prerequisites: For

students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00. Note: Not open to students who have taken AK/ADMS 3270 3.00.

AK/ADMS 4240 3.00 Advertising and Communications. Focuses on advertising and sales promotion within the marketing mix. Students are expected to master terminology, theory and application. Course uses lecture, case studies and a project involving development of marketing plan. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4245 3.00 E-Marketing. Addresses how electronic marketing is changing the dynamics of commerce, including how firms determine where and how to use the Internet for such things as customer relations management, retailing, branding and business-to-business commerce. Prerequisites: AK/ADMS 1000 3.00 and AK/ADMS 3200 3.00.

AK/ADMS 4250 3.00 Marketing Strategy. Uses a variety of methods such as lecture, case study and computer simulation to provide integration of knowledge and practical experience in strategic decision making in marketing. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4260 3.00 Marketing Research I. The research process is examined emphasising overall design and proposal development. Topics include research ethics, research question and hypothesis development, methodology in data collection and statistical approaches to data analysis. Exploratory research is conducted and a research proposal prepared. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ ADMS 3200 3.00.

AK/ADMS 4265 3.00 Marketing Research II. Approaches to examination and analysis of marketing survey response data and the presentation of such analysis are emphasised. The use of SPSS is introduced. Topics covered include measurement scales, data coding, multivariate statistical techniques and variate interpretation. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4275 3.00 Services Marketing. Looks at the marketing of services including; what makes services different from other products, strategies for service marketing, pricing, promotion, distribution and service quality. Investigates all aspects of service marketing covering many service environments from large service firms, such as banking, to individual services such as accounting services. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4280 3.00 Social Marketing. This course examines issues of social responsibility in business and how marketing theory and techniques may be used to promote more environmentally and socially conscious business practices: it includes ethics, feminism, social marketing and other areas determined by student interest. Prerequisites: For students in an Honours program, 78 credits, including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ADMS 3200 3.00.

AK/ADMS 4290 3.00 Marketing for Competitive Advantage. A study of the conceptual and analytical tools needed to survive in today's increased domestic and international competition. Includes such areas as: understanding current and future competitors, locating data sources, developing integrated analytical systems and business strategies. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 3200 3.00, or for other students, a grade of B or better in AK/ ADMS 3200 3.00.

AK/ADMS 4295 6.00 Philosophical and Ethical Issues in the Mass Media. Examines different modes of argumentation in editorial content, news coverage and editorial content, news coverage and advertising particularly ethical issues involved in the relation between arguments based in logic and those based in emotion. Other topics include rhetoric,

persuasion, ideology and propaganda. Note: Not open to students who have taken AK/PHIL 4030K 6.00.

Cross-listed to: AK/ADMS 4295 6.00 and AS/PHIL 4220 6.00 and AK/PHIL 4295 6.00

AK/ADMS 4300 3.00 Decision Making. Many complex decision problems are not amenable to treatment by conventional mathematical modelling techniques. This course explores new methods of dealing with such problems and includes treatment of a variety of decision problems arising in modern society. Prerequisites: 78 credits including AK/ADMS 3300 3.00, AK/ECON 1000 3.00 and six credits in management science. Open only to students in Honours programs. Note: Not open to students who have taken AK/ADMS 4300 6.00.

AK/ADMS 4310 3.00 Information Systems. Information systems support decision making in organizations. The relationship between decision making and the design of information systems is the major theme of this course. Prerequisites: 78 credits including AK/ADMS 3300 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00 and six credits in management science. Open only to students in Honours programs. Note: Not open to students who have taken AK/ADMS 4300 6.00.

AK/ADMS 4370 3.00 Data Analysis Systems. Introduces Windows-based data processing software and provides overview of computing concepts and data processing using SAS, SPSS and STATA. Covers such statistics techniques as data visualization and summary, analysis of contingency tables, linear and logistic regressions and nonparametric methods (same as AK/MATH 4035 3.00). Elective course for: BAS-ITEC and BAS-HURE. Prerequisite: AK/ADMS 3320 3.00. Note: Requires access to a personal computer that runs Windows 98 Second Edition or higher, with multimedia capability and Internet access. For students without personal access to these computing requirements, University microlabs are available.

Cross-listed to: AK/ADMS 4370 3.00 and AK/MATH 4035 3.00

AK/ADMS 4410 3.00 Strategic Human Resources Management. Examines the evolution of the HR role, the trends that impact on HRM, the threats and opportunities affecting the HR function. Discusses strategy, action plans, priority management, measurement of results and competencies. Prerequisites: AK/ADMS 2600 3.00, AK/ADMS 3400 3.00, AK ADMS 3410 3.00, AK/ADMS 3422 3.00, AK/ADMS 3430 3.00, AK/ADMS 3470 3.00, AK/ADMS 3490 3.00 and AK/ADMS 3420 3.00.

AK/ADMS 4420 3.00 Human Resources Research Methods. This course examines the research function in HRM. Topics include measurement and evaluation, as well as experimental, survey and qualitative research methods. Emphasis is placed on how to design research to measure and evaluate HRM programs. Prerequisites: For students in the Honours program, 78 credits including ADMS 3480 3.00, or for other students, a grade of B or better in ADMS 3480.30.

AK/ADMS 4430 3.00 Career Management. Provides students with the theory and skills to enable them to manage their own careers, the careers of employees and the career process within organizations. Prerequisites: AK/ADMS 2600 3.00 and AK/ADMS 3410 3.00.

AK/ADMS 4440 3.00 Issues in Human Resource Management. This course examines current issues in HRM including downsizing, contingency workers, training transfer, stress related diseases, ethics, outsourcing. Students are active participants in the identification and delineation of trends. Prerequisites: For students in the Honours program, 78 credits including ADMS 3480 3.00, or for other students, a grade of B or better in ADMS 3480 3.00.

AK/ADMS 4460 3.00 Organizational Development. Examines the design and implementation of programs for employee development at various organizational levels. Emphasis is placed on the integration of theoretical and experiential knowledge and the development of intervention skills as aids to understanding and responding to change in organizations. Prerequisites: For students in the Honours program, 78 credits including ADMS 2400 3.00, or for other students, a grade of B or better in AK/ADMS 2400 3.00. Note: Not open to students who have taken AK/ADMS 3450 3.00.

AK/ADMS 4470 3.00 International Human Resources Management. Outlines the differences between domestic and international human resources management with specific emphasis on staffing, training, management development, compensation and benefits, union and employee relations. HRM practices in other countries are identified. Prerequisites: AK/ADMS 3480 3.00 or AK/ADMS 2600, AK/ADMS 3410 3.00, AK/ADMS 3422 3.00, AK/ADMS 3430 3.00, AK/ADMS 3470 3.00, AK/ADMS 3490 3.00.

AK/ADMS 4500 3.00 Investment Analysis and Portfolio Management. Familiarizes students with the investment process. The process is seen as consisting of security analysis, portfolio management and investment counselling, all within the context of an "almost efficient" market. Selected pieces of empirical work will also be considered. Prerequisites: 78 credits including AK/ADMS 3530 3.00. Open only to students in Honours programs.

AK/ADMS 4503 3.00 Derivatives and Fixed Income Securities. Explores the pricing and use of derivatives and fixed income securities. Topics covered include options, forwards, futures, swaps, yield curve analytics, forward rate agreements, swaps, other interest rate derivatives, value at risk and other risk management metrics. Prerequisite: AK/ADMS 3530 3.00. Degree credit exclusion: AS/ECON 4410 3.00.

AK/ADMS 4510 3.00 Accounting Theory and Contemporary Issues. This course examines the nature of accounting, accounting theory and the extent to which it applies to current accounting practice as well as certain contemporary issues in accounting. The preparation of a major paper is also required. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3595 3.00, AK/ECON 1000 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00.

AK/ADMS 4511 3.00 Managing and Implementing Strategic Information Systems. As strategic information systems are used by organizations to implement their strategies, they help to change organizations – goals, operations, products, services or environmental relationships. Successful and unsuccessful strategic information systems, how such systems are developed, managed and implemented will be examined. Prerequisites: 78 credits including AK/ADMS 2511 3.00, AK/ECON 1000 3.00, AK/ECON 1010 3.00. Open only to students in Honours programs.

AK/ADMS 4515 3.00 Internal Audit. Introduces students to the objectives, concepts, principles and techniques of internal and management auditing, as applied to profit-pursuing, non-profit and government organizations. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 2500 3.00; AK/ADMS 2510 3.00, or for other students an average grade of B or better in AK/ADMS 2500 3.00 and AK/ADMS 2510 3.00. Note: This course is not open to students who have completed AK/ADMS 3515 3.00.

AK/ADMS 4520 3.00 Advanced Financial Accounting I. This course covers the accounting for business combinations, long-term investments and affiliated companies. It also covers certain areas of accounting, like interim and segment reporting, which are specific to financial reporting by companies whose securities are publicly traded. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3595 3.00, AK/ECON 1000 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00.

AK/ADMS 4530 3.00 Advanced Financial Accounting II. This course covers certain advanced accounting topics, like accounting for the non-profit sector and the alternative reporting models, not covered in the intermediate financial accounting courses. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3595 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00.

AK/ADMS 4540 3.00 Financial Management. This course requires concepts developed in AK/ADMS 3530 3.00 and new issues are presented which affect financial managers. Topics will include market efficiency and portfolio theory basics which have important implications in financial

management procedures and financial statement analysis. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3530 3.00 and six credits in management science, or for other students, these above-listed courses and a grade of B or better in AK/ADMS 3530 3.00.

AK/ADMS 4541 3.00 Advanced Corporate Finance. Explores corporate financial decision making through case study analysis. Topics examined include short-term financial decision-making, long-term financing and financial innovation and strategic financial decisions. Themes include valuation, financial analysis, risk management and integrated business decision-making. Prerequisite: AK/ADMS 3530 3.00.

AK/ADMS 4551 3.00 Auditing and Other Assurance Services. This course examines audit concepts and techniques. Coverage will include audit theory, the timing, nature and extent of audit testing, audit procedures and the application and interpretation of statistics in an audit context. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3585 3.00, AK/ECON 1000 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00.

AK/ADMS 4552 3.00 Information Systems Audit. This course examines issues and topics specific to the external audit function. Coverage will include audit reporting, auditing in a computer environment, legal and ethical responsibilities of the external auditor and professional regulations. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3595 3.00, AK/ADMS 4551 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00. Prerequisite or corequisite: AK/ADMS 3511 3.00 or AK/COSC 1200 3.00.

AK/ADMS 4553 3.00 Auditing: Advanced Topics. Examines current and/or advanced issues affecting the audit profession. Coverage includes the public's expectation of audits and various types of engagements including: special reports, non-audits, prospectuses, future oriented financial statements and comprehensive audits. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3595 3.00, AK/ADMS 4551 3.00, or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00.

AK/ADMS 4560 3.00 Income Taxation in Canada-Advanced Seminar. Builds on technical knowledge in other tax courses and applies it to practical problems and cases. Topics include recent Supreme Court decisions, planning for executive compensation, retirement, immigration, emigration, start-up and purchase and sale of a business, corporate reorganizations, wills, estates and trusts and investing offshore. Prerequisites: For students in an Honours program, 78 credits including AK/ADMS 4561 3.00, AK/ADMS 4562 3.00, or for other students, an average grade of B or better in AK/ADMS 4561 3.00 and AK/ADMS 4562 3.00.

AK/ADMS 4561 3.00 Taxation of Personal Income in Canada. Together with AK/ADMS 4562 3.00, introduces students to the principles and practice of Canadian taxation and related tax planning. Enables students to achieve a basic understanding of the Canadian Income Tax Act and its GST implications in relation to the individual. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 2500 3.00 or AK/ADMS 3520 3.00, or for other students, a grade of B or better in one of the above-listed courses.

AK/ADMS 4562 3.00 Corporate Income Taxation in Canada. Together with AK/ADMS 4561 3.00, introduces students to the principles and practice of Canadian taxation and related tax planning. Enables students to achieve a basic understanding of the Canadian Income Tax Act and its GST implications in relation to corporations, partnerships and trusts. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3520 3.00 or AK/ADMS 3520 3.00, or for other students, a grade of B or better in one of the above-listed courses.

AK/ADMS 4563 3.00 Introduction to US Federal Income Taxation. An introduction to the taxation of individuals and corporations in the United States of America. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 2500 3.00 or AK/ADMS 3520 3.00, or for other students, a grade of B or better in the one of the above-listed courses.

AK/ADMS 4570 3.00 Management Planning and Control Systems. A study of the process by which managers ensure that resources are obtained and used efficiently and effectively in accomplishing organizational objectives. Readings in cost accounting, finance, business policy and social psychology are applied to analyze case studies of actual situations. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3510 3.00 and six credits in management science, or for other students, these above-listed courses and a grade of B or better in AK/ADMS 3510 3.00. Note: Requires PC use but only a few times per term. Consult the course outline.

AK/ADMS 4580 3.00 Applied Studies in Finance. The purpose of this course is to apply the material learned in other finance courses. This will be accomplished through case analyses and a major study of financing practices in a major sector of Canadian industry. Emphasis will also be placed on integrating financial decision-making within a general management framework. Prerequisites: 1) For students in an Honours program, 78 credits including AK/ADMS 3530 3.00, or for other students, a grade of B or better in AK/ADMS 3530 3.00.

AK/ADMS 4590 3.00 Comprehensive and Multi-subject Accounting Problems. This course enables students to apply their technical knowledge to complex accounting problems. Students will be required to interrelate the knowledge obtained from individual subject areas in order to identify problems, analyze data and formulate recommendations for action. Prerequisites: Students in an Honours program, 78 credits including AK/ADMS 3510 3.00, AK/ADMS 3530 3.00, AK/ADMS 4510 3.00 (or AK/ADMS 4511 3.00) (or AK/ADMS 4520 3.00 and AK/ADMS 4530 3.00), AK/ADMS 4551 3.00, AK/ADMS 4561 3.00, AK/ADMS 4562 3.00 (or AK/ADMS 3520 3.00), or for other students, these above-listed courses and an average grade of B or better in AK/ADMS 3585 3.00 and AK/ADMS 3595 3.00.

AK/ADMS 4710 3.00 The Canadian Health Care System. The components of the Canadian health care system, roles played by governments, professional organizations, contemporary issues of cost control, organization and delivery of health services. Prerequisites: For BScN students AK/NURS 3300 3.00 or AK/NURS 2700 6.00; for students in other programs AK/ADMS 2300 6.00 or equivalent, or permission of the course director.

Cross-listed to: AK/ADMS 4710 3.00 and AK/NURS 4710 3.00

AK/ADMS 4740 3.00 Health Care Law. Legislation relevant to health care, consent to treatment, cases of negligence, medical staff privileges, release of information. Prerequisites: For students in an Honours program, 72 credits including AK/ADMS 1000 3.00 and AK/ADMS 2300 6.00 or six credits in management science, or for other students, 72 credits and an overall average grade of B or better. Note: AK/ADMS 3610 3.00 Elements of Law Part I is recommended.

AK/ADMS 4750 3.00 Current Issues for Health Care Professionals. This course examines the concept of professionalism, the role of professional associations in the health care field, ethical and legal issues facing health care professionals, and current legislation governing health care professionals. Prerequisites: 60 credits. Note: Not open to students in the collaborative BScN program.

Cross-listed to: AK/ADMS 4750 3.00 and AK/NURS 4750 3.00

AK/ADMS 4770 3.00 Program Evaluation in Health Care Part I. A blend of theory and practice that provides students with an understanding of the concepts and implementation of program evaluation in health care. Students develop the ability to critique program evaluation reports and develop a proposal to evaluate a program. Prerequisite: For BScN students AK/NURS 3300 3.00 or AK/NURS 2700 6.00. All other students AK/ADMS 2300 6.00 or, for students with equivalent preparation, permission of the director of nursing. Note: Not open to students who have completed AK/ADMS 3130Q 3.00 or AK/ADMS 3720 3.00.

Cross-listed to: AK/ADMS 4770 3.00 and AK/NURS 4500 3.00

AK/ADMS 4780 3.00 Program Evaluation in Health Care Part II. An opportunity for students to further their knowledge of the methodology of program evaluation through practical experience in completing a program evaluation and assessing a program evaluation done by another student. Prerequisite: AK/ADMS 3720 3.00 or AK/ADMS 4770 3.00 or AK/NURS 3500 3.00 or AK/NURS 4500 3.00.

Cross-listed to: AK/ADMS 4780 3.00 and AK/NURS 4510 3.00

AK/ADMS 4900 3.00 Management Policy Part I. Strategy and policy identification, formulation, and evaluation are developed through lectures and case discussions. Emphasis is on integration of administrative studies, subject areas with which the student has previously become familiar, to provide a framework for the analysis of strategic problems of general management. Prerequisites: 78 credits including AK/ADMS 1000 3.00 or equivalents; AK/ECON 1000 3.00; AK/ECON 1010 3.00 and six credits in management science. Open only to students in Honours programs. Note: Use of an IBM-compatible computer required.

AK/ADMS 4910 3.00 Management Policy Part II. This course continues the study of strategy and policy begun in Part I. Emphasis is placed upon strategy and policy implementation, planning and other related issues. Decision-making processes which facilitate these activities are dealt with in lectures and utilized in practical exercises. Prerequisites: 78 credits including AK/ADMS 4900 3.00 and six credits in management science. Open only to students in Honours programs.

The following courses are offered specifically for the Health Studies/ Health Administration programs in the Department of Administrative Studies.

AK/ADMS 2300 6.00 Research Methods in Health Studies
AK/ADMS 3710 3.00 Comparative Health Administration
AK/ADMS 3720 3.00 Program Evaluation in Health Care Part I
AK/ADMS 3730 3.00 Program Evaluation in Health Care Part II
AK/ADMS 3740 3.00 Health and Aging
AK/ADMS 3750 3.00 Behavioural and Social Aspects of Health
AK/ADMS 3760 3.00 Financial Management in Health Care Institutions
AK/ADMS 4760 3.00 Managerial and Leadership Competencies

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African Studies – Arts

Program Office:
   322 Founders College, 416-736-2100, ext. 20260
Web Address:
   http://www.arts.yorku.ca/african/
Program Coordinator:
   P. Idahosa, Social Science
Affiliated Faculty:
   A. Baudot, Glendon/French; M.J. Blincow, Anthropology; H. Bouraoui, French Studies; J. Curto, History; N. DeShane, Fine Arts/Dance; Z. Ellis, French Studies; D.B. Freeman, Geography; P. Idahosa, Social Science; S. Kanya-Forstner, History; P.E. Lovejoy, History; M. Marcuzzi, Fine Arts/Music; G. Mianda, Glendon/Women's Studies; E .Morera, Philosophy; O. Okafor, Osgoode; M .Olaogun, English; R. Saunders, Political Science; S. Saul, Atkinson/Political Science; A. Sekyi-Otu, Social Science; R. Simms, Fine Arts/Music; P. Stamp, Social Science; R.B. Witmer, Fine Arts/Music

The interdisciplinary program in African Studies provides students with the opportunity to pursue their interest in Africa in conjunction with another discipline. Students can double major or minor in African studies and an Honours BA program in the Faculty of Arts, or they can take a series of courses that complement their specialization in another subject area.

Students in the program usually take an interest not only in the broad range of thematic academic issues of the program, but also in the wider issues which have an impact upon Africa and its peoples. This interest is represented through a newsletter, events mounted by the program in conjunction with students, faculty and often the community and outside institutions. Because African studies has a commitment to both the intrinsic benefits of academic inquiry and to the well being of the peoples of Africa, the program can therefore equip students seeking to do graduate work, work with African communities within Canada and work abroad.

The African Studies Program is designed to give graduates a broad theoretical framework and a set of highly-developed analytical skills. The career and employment opportunities for our graduates are potentially excellent, in view of society's growing awareness of the importance of international, gender and equity issues. Prospective employers welcome employees who are sensitive to international issues and comfortable with the emerging diversity of Canadian society. Alumni from our program have found work in a wide range of fields, including government, education, law, social work, public service, business and media. A degree in African studies will offer you the challenge of personal and political insight, and it will encourage you to grow intellectually beyond the confines of traditional academic learning.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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American Sign Language – Department of Languages, Literatures and Linguistics, Arts

Note: For general regulations and enrolment information please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar.

AS/ASL 1000 6.00 American Sign Language, Level I: Introduction to Sign Language Studies. American Sign Language (ASL) is a language with its own linguistic attributes and roots in the deaf community. Activities focus on using hands, face and other body parts to represent lexical and grammatical aspects of ASL, and on comprehension skills in elementary ASL-based conversation. Degree credit exclusion: AS/ASL 1800A 6.00. Note: This course is offered in cooperation with the Deaf Education Program in the Faculty of Education.

AS/ASL 2000 6.00 American Sign Language, Level II. Activities include lessons on ASL II vocabulary, advanced sentence structures, manual and non-manual grammar, conversation strategies, development of viewing and signing skills and familiarization with genres of ASL literature. By year end, students will be able to discuss basic information in ASL. Prerequisite: AS/ASL 1000 6.00 or equivalent, or permission of the course director. Degree credit exclusion: AS/ASL 2800A 6.00. Note: This course is offered in cooperation with the Deaf Education Program in the Faculty of Education.

AS/ASL 3000 6.00 American Sign Language, Level III. This course is based on the Signing Naturally Level III curriculum of the Vista American Sign Language Series. Students apply advanced grammatical features and rehearse new vocabulary through classroom exercises and homework assignments. Prerequisites: AS/ASL 2000 (formerly 2800 6.00), a rating of 2.0 or better on the ASL Proficiency Interview (ASLPI); or permission of the instructor. Note: This course is offered in cooperation with the Deaf Education Program in the Faculty of Education.

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Anthropology – Arts

Department Office:
   2054 Vari Hall, 416-736-5261
Web Address:
   http://www.arts.yorku.ca/anth/
Chair of the Department:
   N. Adelson
Distinguished Research Professor Emeritus:
   P.H. Gulliver
Professors:
   G. Gold, J. Nagata, M. Rodman, M .Silverman, P. Van Esterik
Associate Professors:
   N. Adelson, M. Blincow, S. Gururani, W. Kenneth Little, D.P. Lumsden, D. Murray, A. Schrauwers, D. Yon
Assistant Professors:
   T. Holmes, C. McAllister, J. Van Esterik
Professors Emeriti:
   P. Harries-Jones, F. Henri, E. Kallen, S. Romalis, G. Thaiss

The Department of Anthropology concentrates on change in the contemporary world, especially in relation to new and emerging social challenges. Our courses deal with how people live their lives, as they do so often at the edge of political, social and cultural stability. As anthropologists, we are interested in exploring how people are subjected to, participate in and contest the processes of living in a world that is now interconnected by new and powerful economic, cultural and technological forces. Consideration is given to how class, race, gender and ethnic identity politics are produced and expressed in shifting local and global contexts of power. These themes are explored in a wide variety of courses that engage such topics as: development and the environment; media and popular culture; health, illness and disability; gender and sexualities; tourism, religion and science; diasporic communities and displaced peoples; violence and conflict; and the colonial process. Other courses focus on processes of change in the prehistoric and historic past. Our overall goal is to prepare students to ask critical questions about contemporary, past and future social life, and to provide students with the critical analytic tools required to understand our place in the social and cultural diversity of the world, past and present.

For specific program requirements, please consult the Faculty of Arts Programs of Study section of this Calendar.

Courses in Anthropology

AS/ANTH 1110 6.00 Introduction to Social Anthropology. An introduction to anthropology from the perspectives acquired through comparative study of primitive and complex societies. The course illustrates both the diversity and the recurring principles of social behaviour. Topics include economic organization, kinship patterns, political and legal systems, and ritual and religion.

AS/ANTH 2100 6.00 One World, Many Peoples. A fundamental change in recent history has been the formation of an increasingly interdependent world amidst widespread diversity of societies and cultures. This course surveys the possibilities and problems of implementing programs of social, economic and cultural development within this context.

AS/ANTH 2120 6.00 Visualizing Ourselves, Visualizing Others: Media, Representation and Culture. This course interrogates the relationship between media and culture. It focuses on media representations in different cultural contexts in order to develop critical analytical skills for understanding the processes through which identities and social inequalities are produced, contested and transformed.

AS/ANTH 2140 6.00 Introduction to Archaeology and Palaeoanthropology. This course explores the biological evolution of human beings and historical development of human societies; the methods that palaeoanthropologists and archaeologists use to study the past; and the social context of such endeavours to know the past.

AS/ANTH 2150 6.00 Early Civilizations: Complex Societies of the New and Old Worlds. This course introduces students to anthropological archaeology's view of ancient civilizations and illuminates the web of connections that links them to 21st century global civilization.

AS/ANTH 2160 6.00 Native Peoples of North America. This course examines the origins and diversity of Canadian First Nations culture types prior to and during the historical period of contact, as well as discussion and analysis of legal, political, economic and cultural issues during the later years of Euro-Canadian influence.

AS/ANTH 2170 6.00 Sex, Love and Marriage: Cross-Cultural Approaches to the Body, Gender, Sexuality and Kinship. This course critically examines popular explanations of what is considered natural (and what is not) about sex, gender, emotions and the family. Through a cross-cultural approach, biological models of natural gender roles, as well as sexual and familial relations, are explored and questioned.

AS/ANTH 2180 3.00 Social Anthropology of the Middle East. Despite the many sociocultural differences in the Middle East, there is, nevertheless, a sense of unity in diversity. Using anthropological concepts, such similarities and differences in religion, politics, the family, urban, rural and tribal life and modernization are explored.

AS/ANTH 2190 6.00 Perspectives in Feminist Anthropology. This course examines gender as a category of anthropological analysis. As well as exploring the relationship between feminism and anthropology, topics such as gender and violence, transnational feminisms, globalization and resistance are considered through ethnographic examples and a variety of theoretical approaches.

AS/ANTH 2210 6.00 Public Anthropology. This course engages directly with contemporary events and issues, bringing anthropology into the public sphere. Combining academic and applied anthropology in a larger context, public anthropology illuminates and addresses contemporary problems, including inequality, cultural appropriation, land claims and human suffering. Degree credit exclusion: AS/ANTH 2110 6.00.

AS/ANTH 3020 6.00 Race, "Racism" and Popular Culture. This course concentrates on race and racism as a major source of conflict, particularly in Canadian, British and American societies. The theoretical literature on racism as well as applied models developed to reduce racial conflict will be studied in depth.

AS/ANTH 3030 3.00 Discourses Of Colonialism. This course explores the cultural and political significance of colonial discourse in the past and in the present, including an examination of the construction of Euro-American forms of knowledge about other peoples and how these understandings continue to shape global relations of power. Degree credit exclusion: AS/ANTH 3030 6.00.

AS/ANTH 3050 3.00 Disabling Lives: Anthropological Interpretations of Disability through Autobiography. After considering approaches that are distinctive to the interpretation of disability, this course considers autobiographical interpretations from social science perspectives. The above perspectives will then be combined by asking students to consider disability biographies. Degree credit exclusions: AS/ANTH 3000G 3.00, AS/ANTH 3080 6.00.

AS/ANTH 3070 3.00 Psychics, Skeptics and Pseudoscience: A Cultural Critique of New Age. This course views the cacophony of ideas surrounding New Age and the attempt to justify various beliefs by pseudoscience/science. A cultural critique of New Age includes an analysis of technology, science and skepticism in various social and political contexts. Degree credit exclusion: AS/ANTH 3000A 3.00 (Fall/Winter 1997-1998 to Fall/Winter 2001-2002).

AS/ANTH 3080 6.00 Modes of Enablement: A Cultural Perspective on Physical Disability. A comparative look at visible and non-visible disabilities, the relationship between the disabled and others. Topics include the symbolic and behavioural correlates of physical disability, relationships between the disabled, their support persons and the health professionals. Degree credit exclusions: AS/ANTH 3000G 3.00, AS/ANTH 3050 3.00.

AS/ANTH 3090 6.00 Gender, Science and Society. This course focuses on a critical study of the biomedical sciences, especially the role of women in science, interpretations of their social and reproductive roles and an assessment of major concepts in the representation of gender and visible minorities in medicine.

AS/ANTH 3110 6.00 Acquiring Research Skills. This introduction to research focuses on learning both qualitative and quantitative research skills within the context of a project designed and implemented by the class. Fieldwork, survey design and data analysis are covered, all within the context of using a computer. Prerequisite: AS/ANTH 1110 6.00.

AS/ANTH 3120 6.00 The Anthropology of Tourism. This course explores the sites/sights of tourist practice. Beginning with an historical analysis of tourism in relationship to European colonial expansion, we then consider the cultural significance of contemporary tourism both at home and abroad.

AS/ANTH 3130 3.00 Archaeology and Society: Local Pasts in a Global Present. Archaeology and society are intertwined, locally and globally. This course interrogates those connections, examining the role of archaeological heritage and investigation within contemporary society, as

well as the influence of social and political forces on archaeological interpretation, governance and practice.

AS/ANTH 3140 6.00 Archaeological Research Techniques: York University – MTRCA Summer Archaeological Field School. The course introduces students to basic methods of archaeological field work and laboratory analysis through the excavation of a late Iroquoian site in Ontario. Students will integrate the data derived from their investigations with what is known about the culture and history of the people under study. Prerequisite: Any one of AS/ANTH 2140 6.00, AS/ANTH 2150 6.00, or AS/ANTH 2160 6.00.

AS/ANTH 3150 6.00 Culture, Evolution and Ecology. The course begins with a discussion of Darwinian evolution and moves on to consider how global ecology alters these conventional views. Ideas about the interlinkage between evolution and ecology, and aspects of the new naturalistic approach are considered.

AS/ANTH 3160 6.00 Family and Kinship in Comparative Perspective. This course seeks to develop cross-cultural perspectives on such topics as marriage and mating, the formation of domestic groups, extended kinship ties and social networks, the kindred and various forms of descent groups, the family as a pathway to madness and many other topics. The stress will be on the importance of kinship as an ideology and set of symbols for ordering human relationships.

AS/ANTH 3170 6.00 Historical Anthropology and the Politics of History. This course examines (a) how and why anthropologists have incorporated history into their ethnographic work and (b) the ways in which the past is perceived and used, both by anthropologists and the people amongst whom they study.

AS/ANTH 3180 6.00 Human Evolution and Physical Anthropology. An introduction to physical anthropology within the perspective of evolutionary theory. Topics include: the modern evolutionary synthesis; the primate fossil record; human physical evolution: ethnology and the evolution of behaviour; human biology in respect to adaptation and natural selection.

AS/ANTH 3190 3.00 Nutritional Anthropology: Food and Eating in Cross-Cultural Perspective. This course examines nutritional anthropology from a biocultural perspective, stressing the social and cultural determinants of food use in industrial and developing societies. It examines the linkages between food, health and ethnic identity in the context of globalization. Degree credit exclusion: AS/ANTH 3190 6.00.

AS/ANTH 3190 6.00 Nutritional Anthropology: Food and Eating in Cross-Cultural Perspective. This course examines nutritional anthropology from a biocultural perspective, stressing the social and cultural determinants of food use in industrial and developing societies. It examines the linkages between food, health and ethnic identity in the context of globalization. Degree credit exclusion: AS/ANTH 3190 3.00.

AS/ANTH 3200 3.00 The Anthropology of International Health. Emphasizing the interplay of culture, history and political economy, this course explores health problems in the developing world. Topics include analyses of international health development ideology and practice, and case studies in infectious diseases, maternal mortality, child survival, hunger and malnutrition.

AS/ANTH 3220 6.00 Greed, Globalization and the Gift: The Culture of Capitalism. This course examines capitalist enterprise historically and ethnographically. It focuses upon forms of corporate capitalism; the historic spread of capitalism and the world system; globalization; and the failure of neo-liberal development to deliver economic prosperity.

AS/ANTH 3230 6.00 Women, Culture and Society. This course examines the contribution of anthropology to women's studies, including the relationship between biology and culture, the evolution and learning of sex roles, and the roles and status of women in comparative perspective.

Cross-listed to: AS/ANTH 3230 6.00 and AS/SOSC 3180 6.00

AS/ANTH 3240 6.00 Sexing the Subject: Sexuality from a Cross-Cultural Perspective. This course examines sexuality from a cross-cultural perspective in order to better understand how sexual practices, moralities and identities are constructed, contested and transformed in relation to cultural, political and economic forces. Degree credit exclusion: AS/ANTH 3000M 3.00.

AS/ANTH 3280 6.00 Psychiatric Anthropology and Social Stress. This course is concerned with furthering the mutual relevance of social anthropology and psychiatry, and with developing a true anthropology of suffering. It integrates theories and findings from the fields of medical anthropology, transcultural psychiatry, psychosomatic medicine, in its focus on psychosocial stress research.

AS/ANTH 3320 3.00 Religious Ritual and Symbolism. This course explores anthropological approaches to the study of religion, including symbolic theory, ethnographic examples and materials on ritual events. Topics may include shamans, sorcery and witchcraft, and specific examples of Asian and European religions and New Age religious movements. Degree credit exclusion: AS/ANTH 3320 6.00.

AS/ANTH 3320 6.00 Religious Ritual and Symbolism. This course explores anthropological approaches to the study of religion, including symbolic theory, ethnographic examples and materials on ritual events. Topics may include shamans, sorcery and witchcraft, and specific examples of Asian and European religions and New Age religious movements. Degree credit exclusion: AS/ANTH 3320 3.00.

AS/ANTH 3330 6.00 Health and Illness in Cross-Cultural Perspective. Comparative perspectives on health, illness and medical systems are studied from the viewpoint of anthropology and related disciplines. Emphasis is placed on understanding the roles of the practitioner and patient in their social and cultural contexts and the importance of applied medical anthropology to the wider community. Degree credit exclusion: AS/ANTH 4330 6.00.

AS/ANTH 3350 3.00 Culture as Performance. This course covers expressive aspects of culture including cultural performance forms, the visual arts, cultural spectacles, dance, ritual, narrative and other forms are considered in terms of contemporary anthropological theory. Degree credit exclusion: AS/ANTH 3350 6.00.

AS/ANTH 3350 6.00 Culture as Performance: The Anthropology of the Arts. This course covers expressive aspects of culture: ritual, drama, the visual arts, dance and oral literature, in the framework of contemporary anthropological theories. Degree credit exclusion: AS/ANTH 3350 3.00.

AS/ANTH 3360 6.00 The Politics of Power: Sexuality, Violence and Property in Everyday Life. This course focuses on the interconnections among three key sites of the everyday politics of power - sexuality (the body), violence and property - in a wide variety of different societies and cultures.

AS/ANTH 3370 6.00 Power and Violence: The Making of "Modernity". This course examines the creation and perpetuation of the so called modern world modernity as a dominant socio-cultural system through its increasing proliferation and use of extreme forms of organized violence. It also examines the existence and possibilities of non-violent alternatives.

AS/ANTH 3400 6.00 Altering States: Citizenship and Civil Society in a Globalizing World. The idea of civil society has stirred social imaginations and political aspirations across the globe in recent years. This course analyzes those contexts where debates over civil society, citizenship, power and the state are located and contested.

AS/ANTH 3410 6.00 Ethnicity and Nationalism. This course examines the significance and perception of ethnicity and of class, both as concepts and as modes of establishing or of manipulating identity and of organizing social life in non-Western societies.

AS/ANTH 3420 3.00 Indigenous Minorities and Human Rights. This course focuses on how nation states define majorities and minorities, and how such definitions are contested by populations striving for cultural,

political and human rights. Questions include: How do people get classified as indigenous or aboriginal? How has globalization enhanced awareness of human rights? Degree credit exclusion: AS/ANTH 3420 6.00.

AS/ANTH 3420 6.00 Indigenous Minorities and Human Rights. This course focuses on how nation states define majorities and minorities, and how such definitions are contested by populations striving for cultural, political and human rights. Questions include: How do people get classified as indigenous or aboriginal? How has globalization enhanced awareness of human rights? Degree credit exclusion: AS/ANTH 3420 3.00.

AS/ANTH 4010 3.00 Directed Reading. A student may take an independent, individually supervised directed reading course, provided that the student and the course meet the requirements as set out by the Faculty of Arts and those established by the department. Note: Directed reading courses require a signed agreement between the student and faculty member, as well as the approval of the undergraduate director.

AS/ANTH 4010 6.00 Directed Reading. A student may take an independent, individually supervised directed reading course, provided that the student and the course meet the requirements as set out by the Faculty of Arts and those established by the department. Note: Directed reading courses require a signed agreement between the student and faculty member, as well as the approval of the undergraduate director.

AS/ANTH 4030 6.00 Intercultural Training Skills. The purpose of this course is to offer students a body of theoretical knowledge and a repertoire of tools and skills that can be applied to training in intercultural communication, anti-racism, educational and employment equity and organizational development.

AS/ANTH 4110 6.00 Development of Theory in Social Anthropology. Starting from the major scholars of the last century, the course of anthropology is critically traced through the present century, with the ultimate aim of assessing the contemporary condition of social anthropology. Prerequisites: AS/ANTH 1110 6.00, AS/ANTH 3110 6.00.

AS/ANTH 4220 6.00 The Cultures of the Web. This course applies anthropological concepts of community and culture to the Internet. Beginning with the cultural context of virtual communication, students experience fieldwork within a virtual culture and relate this experience to current research. Degree credit exclusions: AS/ANTH 4200H 6.00, AS/ANTH 4210H 3.00.

AS/ANTH 4250 6.00 Religious Movements in Global Perspective. Within a framework of the politics of identity, this course explore the tension between religious and national identities, the character and scope of transnational religious communities, and takes up fundamentalism as one response to developments in cosmopolitan modern societies. Degree credit exclusion: AS/ANTH 4200J 6.00 (from Fall/Winter 1997-1998 to Fall/Winter 2001-2002).

AS/ANTH 4260 6.00 Social and Cultural Change. Critical considerations of the theoretical dimensions in this field of anthropology (concepts, models, methodologies, explanations) leads to study of the causes, processes and effects of social change in a range of developed and Third World societies. Particular and contrasting case studies are examined in detail.

AS/ANTH 4330 6.00 Health and Illness in Cross-Cultural Perspective. Comparative perspectives on health, illness and medical systems are studied from the viewpoint of anthropology and related disciplines. Emphasis is placed on understanding the roles of the practitioner and patient in their social and cultural contexts and the importance of applied medical anthropology to the wider community. Degree credit exclusion: AS/ANTH 3330 6.00.

AS/ANTH 4340 6.00 Advocacy and Social Movements. This course examines how modern forms of communication have totally transformed the nature of advocacy and the social construction of knowledge in modern society. Specifically, it examines ways in which cultural norms are modified by the activities of social movements.

Applied Mathematics – Arts, Pure and Applied Science

See Mathematics and Statistics.

Arabic – Department of Languages, Literatures and Linguistics, Arts

Note: For general regulations and enrolment information please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar.

AS/ARB 1000 6.00 Introduction to Modern Standard Arabic. This course is an introduction to standard written and formal spoken Arabic for true beginners.

Language of Instruction: Arabic/English

AS/ARB 2000 6.00 Intermediate Arabic. This course focuses on the acquisition of more complex grammatical structures, expanding vocabulary and discourse skills, and on developing competence in a wide range of communicative situations in Arabic. Prerequisite: AS/ARB 1000 6.00, or permission of the department.

Language of Instruction: Arabic

AS/ARB 2700 6.00 An Introduction to Arabic Culture. This course presents textual sources in Arabic literature, philosophy and scripture, and is designed to introduce students to major aspects of Arabic and Islamic culture from the classical to the modern period. Note: Knowledge of Arabic is desirable, but not required.

Norman Bethune College – Arts, Environmental Studies, Pure and Applied Science

Academic Program Office:
  205 Norman Bethune College, 416-736-5164, ext. 22035
Web Address:
  http://www.yorku.ca/bethune/
College Master:
  P. Delaney
Academic Adviser:
  R. Kenedy

Science Courses

SC/BC 1800 3.00 First-Year University Seminar in Science. Each seminar course is a small group (25 student) in-depth exploration of a topic of current scientific interest, led by a faculty member actively interested in the area. The aim is to introduce students to university scholarship in science. One and one-half hours per week for two terms. Three credits. Prerequisite: Open only to students in their first year of university studies in science or by permission of the instructor.

SC/BC 1850 6.00 Biomedical Ethics and the New Genetics. Recent developments in genetics and biotechnology are rapidly generating both medical breakthroughs and societal dilemmas. This course provides an understanding of basic principles of molecular biology and human genetics, and examines societal and bioethical implications of the new genetics. Three lecture/seminar hours. Two terms. Six credits. Degree credit exclusions: SC/NATS 1680 6.00, SC/NATS 1850 6.00. Not open to students enrolled in Biology programs.

Cross-listed to: SC/BC 1850 6.00 and SC/NATS 1850 6.00

SC/BC 3030 3.00 Technical and Professional Writing. This writing-intensive course is for upper-year Science students and others in related fields. Students develop confidence and competence in professional and technical writing. Focus is on communication of complex information in a

clear, sensible style. Three hours per week. One term. Three credits. Prerequisite: At least six non-science general education credits. Corequisite: Concurrent enrolment in at least one 3000- or 4000-level science course (or course which is cross-listed with a science course), or permission of the instructor. Degree credit exclusions: SC/BC 3050 3.00, AS/SC/COSC 3530 3.00.

Faculty of Arts Foundations Courses

Listed below are the 1000- and 2000-level nine-credit foundations courses which are part of the Faculty of Arts general education requirement and are affiliated with Norman Bethune College. These courses introduce students to interdisciplinary study, emphasize critical thinking, reading and writing skills at the university level, and reflect the academic mandate of the college.

AS/HUMA 1905 9.00 Dangerous Visions, Brave New Worlds: The Science Fiction Culture and Our Scientific Age. This course explores how the medium of science fiction has given cultural expression to changing attitudes towards modern science and technology. Topics include science fiction and the computer, relativity and quantum theory, religious belief, genetics and potential apocalypses. (This course is affiliated with Bethune College.)

AS/HUMA 1910 9.00 Science and the Humanities: Nature and Human Nature. This course investigates how scientific thinking about the place of human beings in nature involves humanistic thinking about the place of nature in being human. (This course is affiliated with Bethune College.) Degree credit exclusion: AS/HUMA 1910 6.00.

AS/HUMA 2915 9.00 Darwin, Einstein and the Humanities. This course is concerned with the origins and impact of the ideas of two of the most significant scientists of the modern era, Charles Darwin and Albert Einstein. (This course is affiliated with Bethune College.) Degree credit exclusion: AS/HUMA 2915 6.00.

AS/HUMA 2920 9.00 Spreading the Word: Knowledge, Technology and Culture. This course explores technologies of knowledge in social and cultural context, examining histories of classification, ethical and political concerns about information, debates over artificial intelligence and artificial life, and the social impact of technologies like the book, telegraph and computer. (This course is affiliated with Bethune College.)

AS/SOSC 2040 9.00 Nature and Human Nature. An enquiry into the biological dimensions of human culture with emphasis on findings of evolutionary theory, zoology and primate studies in order to understand the evolutionary determinants of "primitive" and "modern" societies. (This course is affiliated with Bethune College.) Degree credit exclusion: AS/SOSC 1040 6.00.

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Biochemistry– Pure and Applied Science

Biochemistry, the chemistry of life, underpins much of biological, biotechnological and biomedical research today. As a biochemistry major, you will explore the structure and function of molecules in organisms, genomic research with cutting-edge DNA technology, and investigate the cell's proteomes. Biochemists are employed in the rapidly expanding biotechnology and pharmaceutical industries, in academic or hospital research centres, as well as in teaching at schools, colleges and universities. A biochemistry degree is also an entry into professional schools in medicine and other health professions, business and law.

SC/BCHM 2020 4.00 Cell Biology and Biochemistry I. A study of the cell biology and biochemistry of biomolecules. Topics include intermediary metabolism related to bioenergetics, including the biology of mitochondria and chloroplasts, protein structure and function, nucleic acid replication, gene expression, chromosome organization and recombinant DNA technology. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 1010 6.00; both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00, or SC/CHEM 1000 6.00. Corequisite: SC/CHEM 2020 6.00 or SC/CHEM 2020 5.00.

Cross-listed to: SC/BCHM 2020 4.00 and SC/BIOL 2020 4.00

SC/BCHM 2021 4.00 Cell Biology and Biochemistry II. A study of those aspects of cell biology and biochemistry not included in SC/BIOL 2020 4.00. Topics include membranes, the endomembrane system, the cytoskeleton, cellular motility, the extracellular matrix, intercellular communication and intracellular regulation. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00.

Cross-listed to: SC/BCHM 2021 4.00 and SC/BIOL 2021 4.00

SC/BCHM 3010 3.00 Advanced Biochemistry. A detailed discussion of enzyme structure and function. The chemistry and metabolism of biological molecules. Metabolic regulation at the level of enzyme activity. Knowledge of general concepts of metabolism and of basic aspects of enzyme structure and function is assumed. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/CHEM 2020 6.00. Prerequisite or corequisite: Three additional chemistry credits at the 2000 or 3000 level (e.g. SC/CHEM 2011 3.00) are strongly recommended.

Cross-listed to: SC/BCHM 3010 3.00 and SC/BIOL 3010 3.00 and SC/CHEM 3050 3.00

SC/BCHM 3051 3.00 Macromolecules of Biochemical Interest. A discussion of the structures and functions of naturally occurring macromolecules, including nucleic acids, proteins, polysaccharides and related macromolecular conjugates. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00. Prerequisite or corequisite: SC/CHEM 3020 4.00.

Cross-listed to: SC/BCHM 3051 3.00 and SC/BIOL 3051 3.00 and SC/CHEM 3051 3.00

SC/BCHM 3071 3.00 Pharmaceutical Discovery. A practical look into the pharmaceutical industry, providing an overview of the drug discovery process. Topics include choosing disease states to study, pharmacological assays, rational drug design, synthetic and analytical chemistry, toxicology, drug metabolism and clinical trials. Three hours. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00.

Cross-listed to: SC/BCHM 3071 3.00 and SC/BIOL 3071 3.00 and SC/CHEM 3071 3.00

SC/BCHM 3110 3.00 Molecular Biology I: Nucleic Acid Metabolism. Discussion of the metabolism of DNA and RNA, including the physical-chemical properties of nucleic acids; DNA-protein interactions; chromosome structure; nucleic acid replication, repair and recombination; recombinant DNA technology. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00; SC/BIOL 2040 4.00.

Cross-listed to: SC/BCHM 3110 3.00 and SC/BIOL 3110 3.00

SC/BCHM 3130 3.00 Molecular Biology II: Regulation of Gene Expression. Gene structure and function. Mechanisms of gene expression in prokaryotes and eukaryotes. Storage and retrieval of genetic information; transcription, translation and their control. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 3110 3.00 or SC/BCHM 3110 3.00.

Cross-listed to: SC/BCHM 3130 3.00 and SC/BIOL 3130 3.00

SC/BCHM 3140 4.00 Advanced Biochemistry and Molecular Genetics Laboratory. Research techniques used in biochemistry and molecular biology, including recombinant DNA technology are illustrated. Purification of a restriction endonuclease; isolation and mapping of bacterial plasmids, bacteriophage and recombinant molecules; polymerase chain reaction (PCR); nucleic acid hybridization. Enrolment restricted. One lecture hour, six laboratory hours two days per week, plus additional laboratory hours throughout the week. One term. Four credits. Prerequisite or corequisite: SC/BIOL 3110 3.00. SC/BIOL 3130 3.00 strongly recommended as a prerequisite or corequisite.

Cross-listed to: SC/BCHM 3140 4.00 and SC/BIOL 3140 4.00

SC/BCHM 4050 3.00 Bioanalytical Chemistry. This course describes modern methods of bioanalytical chemistry in their application to the analysis of biological polymers: proteins, nucleic acids, carbohydrates and

lipids. Analytical aspects of genomics and proteomics are considered. Three lecture hours per week. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00 and SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00

Cross-listed to: SC/BCHM 4050 3.00 and SC/BIOL 4051 3.00 and SC/CHEM 4050 3.00

SC/BCHM 4051 3.00 Biological Chemistry. Bio-organic and bio-inorganic topics: active sites in enzymes and metalloproteins, coenzymes; abiotic models; aromatic natural products, terpenoids and some alkaloid classes. Three lecture hours. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/CHEM 2030 4.00 is strongly recommended.

Cross-listed to: SC/BCHM 4051 3.00 and SC/CHEM 4051 3.00

SC/BCHM 4061 3.00 Cell and Molecular Biology of Development. This course presents a genetic and molecular biological approach to the field of developmental biology. Topics range from unicellular systems, both prokaryotic and eukaryotic, to more complex, multicellular systems. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2040 4.00.

Cross-listed to: SC/BCHM 4061 3.00 and SC/BIOL 4061 3.00

SC/BCHM 4150 3.00 Cellular Regulation. A detailed examination of molecular, cellular and physiological processes associated with the action of peptide hormones, neuro-transmitters and growth factors. Emphasis is on cell receptors and signal transduction mechanisms involving cyclic nucleotides and calcium. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 3010 3.00 and SC/BIOL 3110 3.00 strongly recommended as prerequisites or corequisites.

Cross-listed to: SC/BCHM 4150 3.00 and SC/BIOL 4150 3.00

SC/BCHM 4151 3.00 Membrane Transport. The fundamental properties of solute transport are presented by discussing active ion pumps, passive transporters and ion channels of bacteria, plants and animals. The role of transport in regulating the intracellular environment in animals and plants is emphasized. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 3010 3.00 and SC/BIOL 3110 3.00 strongly recommended as prerequisites or corequisites.

Cross-listed to: SC/BCHM 4151 3.00 and SC/BIOL 4151 3.00

SC/BCHM 4160 3.00 Photosynthesis. A study of the process of photosynthesis at the biochemical, organelle and whole-organism levels, including structure of the photosynthetic apparatus, primary light-harvesting processes, electron transport, photophosphorylation, mechanism of carbon dioxide fixation in higher plants and algae, photorespiration. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite: SC/BIOL 3160 4.00.

Cross-listed to: SC/BCHM 4160 3.00 and SC/BIOL 4160 3.00

SC/BCHM 4290 4.00 Biotechnology. This laboratory course covers some of the methods currently in use in biotechnology research in industry and academia. Emphasis is placed on methods for transforming eukaryotes with marker genes. Advanced methods used in molecular biology are also covered. Two lecture hours, six laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 3110 3.00 or SC/BCHM 3110 3.00.

Cross-listed to: SC/BCHM 4290 4.00 and SC/BIOL 4290 4.00

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Biology – Pure and Applied Science

Department Office:
  247 Farquharson, 416-736-5243
Undergraduate Office:
  108 Farquharson, 416-736-5311
Chair of the Department:
  A.J. Hilliker
Undergraduate Coordinator:
  P.J. Wilson

University Professor:
  R.E. Pearlman
University Professor Emeritus:
  A.S.M. Saleuddin
Distinguished Research Professors Emeriti:
  K.G. Davey, P.B. Moens
Professors:
  M.B. Coukell, I.A.J. Hilliker, R.R. Lew, L.E. Licht, L.D.M. Packer, J. Sapp, J.S. Shore, C.G.H. Steel, B.J. Stutchbury, R.A. Webb, H. Wilson, G.E. Wu, N. Yan
Professors Emeriti:
  M.G. Boyer, B. Colman, A. Forer, I.B .Heath, J.A.M. Heddle, D.M. Logan, B.G. Loughton, D.M. Nicholls
Associate Professors:
  D.R. Bazely, I. Coe, M.M. Crerar, P .Lakin-Thomas, J.C. McDermott, C. Peng, K.A. White
Associate Professors Emeriti:
  D.M. Cameron, J.G. Little, J.S. Tait
Assistant Professors:
  L. Donaldson, K. Hudak, S. Kelly, R. Quinlan, M. Scheid, G. Sweeney, S. Wright
Associate Lecturers:
  E.C. Gardonio, P.J. Wilson
Assistant Lecturers:
  B. Czaban, T. Noel

Biology is the science of life. It is concerned with structure, function, evolution and distribution of all living organisms. The Department of Biology is sufficiently large and its faculty members sufficiently varied in research interests to offer undergraduate instruction in all the major areas of biology. It specializes, however, in four areas: physiology, cell biology, molecular biology and population biology. Specialized programs in biology (see the Faculty of Pure and Applied Science Programs of Study section of this Calendar) require completion of a prescribed core of courses which expose the student to general areas of biology, but also give the student wide flexibility in selecting courses.

Courses in Biology

Biology courses whose numbers begin with the digit 4 are normally offered in alternate years —with the exception of SC/BIOL 4000 3.00/4000 8.00, SC/BIOL 4040 3.00, SC/BIOL 4200 3.00, SC/BIOL 4290 4.00, SC/BIOL 4245 3.00, SC/BIOL 4255 3.00 and SC/BIOL 4370 3.00, which have been offered annually in recent years.

The contact hour information in the course outlines below specifies the number of hours per week when the course is taught in the daytime in a fall/winter session. If the course is offered in the evening and/or in a summer session, the format and scheduling may be different, though equivalent in credit value.

SC/BIOL 1010 6.00 Biological Science. A course for biology students examining unifying concepts and fundamental principles of biology. The course offers an introduction to cell and molecular biology, genetics, ecology and evolution. The laboratory exercises are an integral component, therefore, students must pass the laboratory section in order to pass the course. Three lecture hours, two lecture hours per week in alternate weeks; one tutorial hour per week; 12 three-hour laboratories. Two terms. Six credits. Prerequisite: OAC chemistry or 12U chemistry or SC/CHEM 1500 4.00. Degree credit exclusions: SC/BIOL 1410 6.00, AK/NATS 1910 6.00.

SC/BIOL 1410 6.00 Principles and Processes in Biology. Emphasizing fundamental biological principles and processes of both plants and animals, this course examines aspects of the evolution and diversity of life, cell structure and function, heredity and ecosystems. For science students who do not plan to continue in biology. Because laboratory exercises are an integral component of the course, students must pass the laboratory section of the course in order to pass the course. Three lecture hours, two lecture hours per week in alternate weeks; one tutorial hour per week; 12 three-hour laboratories. Two terms. Six credits. Prerequisite: OAC chemistry or 12U chemistry or SC/CHEM 1500 4.00. Degree credit exclusions: SC/BIOL 1010 6.00, AK/NATS 1910 6.00.

SC/BIOL 2010 4.00 Plant Biology. Current advances in plant biology research, highlighting plant structure, physiology, development and diversity. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 1010 6.00.

SC/BIOL 2020 4.00 Cell Biology and Biochemistry I. A study of the cell biology and biochemistry of biomolecules. Topics include intermediary metabolism related to bioenergetics, including the biology of mitochondria and chloroplasts, protein structure and function, nucleic acid replication, gene expression, chromosome organization and recombinant DNA technology. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 1010 6.00; both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00, or SC/CHEM 1000 6.00. Corequisite: SC/CHEM 2020 6.00 or SC/CHEM 2020 5.00.

Cross-listed to: SC/BCHM 2020 4.00 and SC/BIOL 2020 4.00

SC/BIOL 2021 4.00 Cell Biology and Biochemistry II. A study of those aspects of cell biology and biochemistry not included in SC/BIOL 2020 4.00. Topics include membranes, the endomembrane system, the cytoskeleton, cellular motility, the extracellular matrix, intercellular communication and intracellular regulation. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00.

Cross-listed to: SC/BCHM 2021 4.00 and SC/BIOL 2021 4.00

SC/BIOL 2030 4.00 Animals. (formerly SC/BIOL 2030 5.00 - before 2000-2001) A study of the diversity of animals, their structure, physiology and evolution. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 1010 6.00. Degree credit exclusions: SC/BIOL 2030 5.00, SC/BIOL 2031 4.00, SC/BIOL 2031 3.00.

SC/BIOL 2040 4.00 Genetics. (formerly SC/BIOL 2040 5.00 - before 2000-2001) A study of the organization and behaviour of genes and chromosomes and their roles in cells, organisms, populations and evolution. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 1010 6.00. Degree credit exclusion: SC/BIOL 2040 5.00.

SC/BIOL 2050 4.00 Ecology. (formerly SC/BIOL 2050 3.00 - before 2000-2001) A study of the interactions between organisms and their abiotic environments, presented in an evolutionary context. Includes processes of evolution, ecosystems and communities, competition, predation, population ecology and current environmental problems such as habitat loss and extinction. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 1010 6.00. Prerequisite or corequisite: SC/BIOL 2060 3.00. Degree credit exclusion: SC/BIOL 2050 3.00.

SC/BIOL 2060 3.00 Statistics for Biologists. (formerly SC/BIOL 3090 3.00 - before 2000-2001) Statistical problem solving for biologists. Basic theory for the analysis of parametric and non-parametric data. A project period is devoted to discussion and solving of statistical problems. Two lecture hours, one project period. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1520 3.00 or AK/AS/SC/COSC 1530 3.00 or AK/AS/SC/COSC 1540 3.00; AS/SC/MATH 1014 3.00 or AS/SC/MATH 1505 6.00 or both AS/SC/MATH 1013 3.00 and AS/SC/MATH 1025 3.00 or equivalents. Degree credit exclusions: SC/BIOL 3090 3.00, AS/ECON 2500 3.00, AS/ECON 3210 3.00, AK/ECON 3470 3.00, AK/ECON 3480 3.00, AS/ECON 3500 3.00, ES/ENVS 2010 6.00, ES/ENVS 2010 3.00, AS/SC/GEOG 2420 3.00, AS/SC/KINE 2050 3.00, AS/SC/KINE 3150 3.00, AK/AS/SC/MATH 1131 3.00, AS/SC/MATH 1132 3.00, AK/AS/SC/MATH 2560 3.00, AK/AS/SC/MATH 2570 3.00, AS/POLS 3300 6.00, AK/AS/SC/PSYC 2020 6.00, AK/AS/SC/PSYC 2021 3.00, AK/AS/SC/PSYC 2022 3.00, AK/PSYC 2510 3.00, AK/PSYC 3110 3.00, AS/SOCI 3030 6.00.

SC/BIOL 3001 2.00 Field Course. A course given at one of several biological stations, the objective of which is to give the student the opportunity to study plants and animals in their natural surroundings. The departmental brochure should be consulted for further details. One-week field course. Two credits. Prerequisites: SC/BIOL 2010 4.00; one of SC/BIOL 2030 4.00 or SC/BIOL 2031 3.00; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3001 3.00 Field Course. A course given at one of several biological stations, the objective of which is to give the student the opportunity to study plants and animals in their natural surroundings. The departmental brochure should be consulted for further details. Two-week field course. Three credits. Prerequisites: SC/BIOL 2010 4.00; one of SC/BIOL 2030 4.00 or SC/BIOL 2031 3.00; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3002 2.00 Field Course. This is a second field course, which may be taken for credit, the contents of which must differ materially from SC/BIOL 3001 2.00/3001 3.00 as determined by the course director. The departmental brochure should be consulted for further details. One-week field course. Two credits. Prerequisite: SC/BIOL 3001 2.00 or SC/BIOL 3001 3.00 or permission of the course director; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3002 3.00 Field Course. This is a second field course, which may be taken for credit, the contents of which must differ materially from SC/BIOL 3001 2.00/3001 3.00 as determined by the course director. The departmental brochure should be consulted for further details. Two-week field course. Three credits. Prerequisite: SC/BIOL 3001 2.00 or SC/BIOL 3001 3.00 or permission of the course director; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3003 2.00 Field Course. This is a third field course, which may be taken for credit, the contents of which must differ materially from SC/BIOL 3001 2.00/3001 3.00 and SC/BIOL 3002 2.00/3002 3.00, as determined by the course director. The departmental brochure should be consulted for further details. One-week field course. Two credits. Prerequisite: SC/BIOL 3002 2.00 or SC/BIOL 3002 3.00 or permission of the course director; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3003 3.00 Field Course. This is a third field course, which may be taken for credit, the contents of which must differ materially from SC/BIOL 3001 2.00/3001 3.00 and SC/BIOL 3002 2.00/3002 3.00, as determined by the course director. The departmental brochure should be consulted for further details. Two-week field course. Three credits. Prerequisite: SC/BIOL 3002 2.00 or SC/BIOL 3002 3.00 or permission of the course director; plus special prerequisites where specified for some modules. Note: Students must be manually enrolled in this course through the Biology Department early in the January prior to the session in which the course is offered. Enrolment is not possible at any other time of year. In addition to the tuition fee levied by the University, each student must pay for transportation, room and board.

SC/BIOL 3010 3.00 Advanced Biochemistry. A detailed discussion of enzyme structure and function. The chemistry and metabolism of biological molecules. Metabolic regulation at the level of enzyme activity. Knowledge of general concepts of metabolism and of basic aspects of enzyme structure and function is assumed. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/CHEM 2020 6.00. Prerequisite or corequisite: Three additional

chemistry credits at the 2000 or 3000 level (e.g. SC/CHEM 2011 3.00) are strongly recommended.

Cross-listed to: SC/BCHM 3010 3.00 and SC/BIOL 3010 3.00 and SC/CHEM 3050 3.00

SC/BIOL 3030 4.00 Physiology of the Invertebrates. A treatment of the physiology of major invertebrate phyla with emphasis on interphyletic relationships. Laboratory exercises address the diversity and physiology of invertebrates. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 3051 3.00 Macromolecules of Biochemical Interest. A discussion of the structures and functions of naturally occurring macromolecules, including nucleic acids, proteins, polysaccharides and related macromolecular conjugates. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00. Prerequisite or corequisite: SC/CHEM 3020 4.00.

Cross-listed to: SC/BCHM 3051 3.00 and SC/BIOL 3051 3.00 and SC/CHEM 3051 3.00

SC/BIOL 3060 4.00 Animal Physiology I. Fundamental concepts in sensory, neural and behavioural physiology. The biochemical mechanisms whereby nerve cells detect and transmit information and the processes whereby information is integrated in the nervous system and gives rise to the outputs of behaviour. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00, SC/BIOL 2020 4.00, SC/BIOL 2021 4.00.

SC/BIOL 3070 4.00 Animal Physiology II. The processes of digestion, osmoregulation and excretion, circulatory systems and gaseous exchange, metabolism, growth and reproduction are considered. The course adopts a comparative approach, first analyzing the basic principles underlying physiological activities, then examining the means whereby different organisms perform them. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00, SC/BIOL 2020 4.00, SC/BIOL 2021 4.00.

SC/BIOL 3071 3.00 Pharmaceutical Discovery. A practical look into the pharmaceutical industry, providing an overview of the drug discovery process. Topics include choosing disease states to study, pharmacological assays, rational drug design, synthetic and analytical chemistry, toxicology, drug metabolism and clinical trials. Three hours. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00.

Cross-listed to: SC/BCHM 3071 3.00 and SC/BIOL 3071 3.00 and SC/CHEM 3071 3.00

SC/BIOL 3100 2.00 Current Topics in Biological Research. A review of the research in progress by members of the Department of Biology. This course is designed to prepare Honours students for SC/BIOL 4000 8.00 and SC/BIOL 4000 3.00. Two lecture hours per week in the fall term, assignments due in the winter term. Two credits. Prerequisite: Open only to students registered in an Honours Program in Biology, normally in the year prior to that in which they will undertake their Honours thesis work.

SC/BIOL 3110 3.00 Molecular Biology I: Nucleic Acid Metabolism. Discussion of the metabolism of DNA and RNA, including the physical-chemical properties of nucleic acids; DNA-protein interactions; chromosome structure; nucleic acid replication, repair and recombination; recombinant DNA technology. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00; SC/BIOL 2040 4.00.

Cross-listed to: SC/BCHM 3110 3.00 and SC/BIOL 3110 3.00

SC/BIOL 3120 3.00 Immunobiology. The biology and chemistry of the immune response. Structure and function of antibodies; antibody diversity; anatomy and development of the immune system; cellular interactions; immunological responses in disease. Production and use of monoclonal and polyclonal antibodies. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 3130 3.00 Molecular Biology II: Regulation of Gene Expression. Gene structure and function. Mechanisms of gene expression in prokaryotes and eukaryotes. Storage and retrieval of genetic information; transcription, translation and their control. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 3110 3.00 or SC/BCHM 3110 3.00.

Cross-listed to: SC/BCHM 3130 3.00 and SC/BIOL 3130 3.00

SC/BIOL 3140 4.00 Advanced Biochemistry and Molecular Genetics Laboratory. Research techniques used in biochemistry and molecular biology, including recombinant DNA technology, are illustrated. Purification of a restriction endonuclease; isolation and mapping of bacterial plasmids, bacteriophage and recombinant molecules; polymerase chain reaction (PCR); nucleic acid hybridization. Enrolment restricted. One lecture hour, six laboratory hours two days per week, plus additional laboratory hours throughout the week. One term. Four credits. Prerequisite or corequisite: SC/BIOL 3110 3.00. SC/BIOL 3130 3.00 strongly recommended as a prerequisite or corequisite.

Cross-listed to: SC/BCHM 3140 4.00 and SC/BIOL 3140 4.00

SC/BIOL 3150 3.00 Microbiology. Fundamentals of microbiology; microbial organisms; microbe-host interactions; microbial genetics and evolution; microorganisms and human disease; environmental and applied microbiology. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2040 4.00.

SC/BIOL 3155 3.00 Virology. An in-depth examination of cellular, molecular and structural aspects of virology. Molecular processes and concepts are emphasized using examples from current research literature. Virus-host interactions are investigated in various systems. Three lecture hours per week. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 3160 4.00 Plant Physiology. Basic physiological processes of plants and plant cells, including photosynthesis, respiration, nitrogen metabolism, water relations, solute uptake and translocation. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2010 4.00; SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 3170 3.00 Concepts in Animal Ecology. Current major topics in ecology with special emphasis on animals. Lecture material is based on primary sources and includes population growth, productivity, predation and optimization, community ecology and conservation. The laboratory material stresses field studies and quantitative approaches to related questions. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisites: One of SC/BIOL 2030 4.00 or SC/BIOL 2031 3.00; SC/BIOL 2050 4.00; AK/AS/SC/COSC 1520 3.00 or AK/AS/SC/COSC 1530 3.00 or AK/AS/SC/COSC 1540 3.00. Prerequisite or corequisite: SC/BIOL 2060 3.00.

SC/BIOL 3200 3.00 Processes of Evolution. The process and principles of evolution, the mechanisms by which genetic change occurs, the patterns of genetic variation and molecular studies that relate the structure of organisms to their evolution are examined. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 2040 4.00.

SC/BIOL 3500 3.00 Plant Geography. An analysis of the geography of higher plants, emphasizing processes that operate at the species population level, the origin and diversity of higher plant life, geographic patterns of diversity and floras, and dynamics of species populations at local and continental scales. Two lecture hours, two laboratory hours. One term. Prerequisite: AS/SC/GEOG 2500 3.00 or SC/BIOL 2050 4.00.

Cross-listed to: SC/BIOL 3500 3.00 and AS/GEOG 3500 3.00 and SC/GEOG 3500 3.00

SC/BIOL 4000 3.00 Honours Thesis. A substantial review essay based on library investigations under the supervision of a faculty member. Rules governing this course are outlined in the Department of Biology undergraduate handbook. Only open to Honours students majoring in biology and environmental science students (life sciences stream). One term. Three credits. Note: Students who take SC/BIOL 3100 2.00 as a degree requirement will take it as a prerequisite for SC/BIOL 4000 3.00. In

exceptional circumstances, SC/BIOL 3100 2.00 may be taken as a corequisite with the permission of the BIOL 4000 course director.

SC/BIOL 4000 8.00 Honours Thesis. A research thesis based on laboratory and/or field investigations under the supervision of a faculty member. Rules governing this course are outlined in the Department of Biology undergraduate handbook. Only open to Honours students majoring in biology and environmental science students (life sciences stream). Two terms. Eight credits. Note: Students who take SC/BIOL 3100 2.00 as a degree requirement will take it as a prerequisite for SC/BIOL 4000 8.00. In exceptional circumstances, SC/BIOL 3100 2.00 may be taken as a corequisite with the permission of the BIOL 4000 course director.

SC/BIOL 4040 3.00 Genetic Stability and Change. Stability and flexibility of the genomes of prokaryotic and eukaryotic cells. Genetic recombination, DNA repair, mutation inductions; genome rearrangement and the transposition of DNA. The roles of these processes in evolution and in the induction of human disease. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 3110 3.00; SC/BIOL 3130 3.00 strongly recommended as prerequisite or corequisite.

SC/BIOL 4050 3.00 Plant Development. Physiological processes controlling the growth, differentiation and reproduction of plants. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisites: SC/BIOL 2010 4.00; SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; or by permission of the course director.

SC/BIOL 4051 3.00 Bioanalytical Chemistry. This course describes modern methods of bioanalytical chemistry in their application to the analysis of biological polymers: proteins, nucleic acids, carbohydrates and lipids. Analytical aspects of genomics and proteomics are considered. Three lecture hours per week. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00 and SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00.

Cross-listed to: SC/BCHM 4050 3.00 and SC/BIOL 4051 3.00 and SC/CHEM 4050 3.00

SC/BIOL 4061 3.00 Cell and Molecular Biology of Development. This course presents a genetic and molecular biological approach to the field of developmental biology. Topics range from unicellular systems, both prokaryotic and eukaryotic, to more complex, multicellular systems. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2040 4.00.

Cross-listed to: SC/BCHM 4061 3.00 and SC/BIOL 4061 3.00

SC/BIOL 4080 3.00 Methods in Aquatic Ecology. Lake morphometry; water movement; temperature effects; water chemistry; freshwater flora and fauna; productivity. The laboratory deals with the taxonomy of freshwater organisms, the use of limnological equipment and the practical aspects of energy flow. Six hours per week (including lectures, laboratories and field experience). Two weekend field trips. One term. Three credits. Prerequisites: SC/BIOL 2010 4.00; one of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00; SC/BIOL 2050 4.00; SC/BIOL 2060 3.00; AK/AS/SC/COSC 1520 3.00 or AK/AS/SC/COSC 1530 3.00 or AK/AS/SC/COSC 1540 3.00. Note: An additional fee will be charged for room and board while at the field site.

SC/BIOL 4090 4.00 Plant Ecology. This course reflects the diversity of topics that make up the field of plant ecology: ecosystems, plant population ecology, physiological and evolutionary ecology, plant-herbivore interactions and applied ecology. Laboratories cover field and laboratory techniques, including sampling methods. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2010 4.00; SC/BIOL 2050 4.00.

SC/BIOL 4095 3.00 Applied Plant Ecology. This course concentrates on how pollution, including acid precipitation and climatic change, and activities such as overgrazing have affected plant growth and productivity. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 2050 4.00 or permission of the instructor; SC/BIOL 4090 4.00 is recommended.

SC/BIOL 4120 3.00 Phycology. Classification and phylogeny of the algae; life cycles and reproduction; some aspects of algal physiology. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite: SC/BIOL 2010 4.00.

SC/BIOL 4140 3.00 Advanced Cell Biology I. Selected topics in cell biology, such as the principles of microscopy, cell motility. Restricted laboratory enrolment. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 4140 4.00 Advanced Cell Biology I. Selected topics in cell biology, such as the principles of microscopy, cell motility. Restricted laboratory enrolment. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 4141 3.00 Current Topics and Methods in Cell Biology. Selected topics in cell biology, such as membrane dynamics, cell cycle control, apoptosis, signal transduction and cellular rhythmicity. Presentation and critical discussion of recent research papers, emphasizing current methods and experimental design. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; or equivalent. Degree credit exclusions: SC/BIOL 4140 3.00 from Fall/Winter 2002-2003 only.

SC/BIOL 4150 3.00 Cellular Regulation. A detailed examination of molecular, cellular and physiological processes associated with the action of peptide hormones, neuro-transmitters and growth factors. Emphasis is on cell receptors and signal transduction mechanisms involving cyclic nucleotides and calcium. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 3010 3.00 and SC/BIOL 3110 3.00 strongly recommended as prerequisites or corequisites.

Cross-listed to: SC/BCHM 4150 3.00 and SC/BIOL 4150 3.00

SC/BIOL 4151 3.00 Membrane Transport. The fundamental properties of solute transport are presented by discussing active ion pumps, passive transporters and ion channels of bacteria, plants and animals. The role of transport in regulating the intracellular environment in animals and plants is emphasized. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 3010 3.00 and SC/BIOL 3110 3.00 strongly recommended as prerequisites or corequisites.

Cross-listed to: SC/BCHM 4151 3.00 and SC/BIOL 4151 3.00

SC/BIOL 4160 3.00 Photosynthesis. A study of the process of photosynthesis at the biochemical, organelle and whole-organism levels, including structure of the photosynthetic apparatus, primary light-harvesting processes, electron transport, photophosphorylation, mechanism of carbon dioxide fixation in higher plants and algae, photorespiration. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite: SC/BIOL 3160 4.00.

Cross-listed to: SC/BCHM 4160 3.00 and SC/BIOL 4160 3.00

SC/BIOL 4190 3.00 Advanced Cell Biology II. A discussion course emphasizing the relationships between ultrastructure, function and development, especially processes involving the cytoskeleton. Restricted laboratory enrolment. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 4190 4.00 Advanced Cell Biology II. A discussion course emphasizing the relationships between ultrastructure, function and development, especially processes involving the cytoskeleton. Restricted laboratory enrolment. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 4200 3.00 Selected Readings in Biology. A reading course offered by special arrangement between an individual student and a faculty supervisor which focuses on a specialized area of biology of mutual interest. The subject matter must be significantly different from that of the student's honours thesis. A student may take this course only once for credit. One term. Three credits. Prerequisite: Students can be in any program in biology, but must have a science grade point average equal to or greater than 6.0.

SC/BIOL 4220 4.00 Histology. Structure and function of tissues in vertebrates, with special emphasis on human histology. The laboratory deals with basic histological and histochemical techniques, such as tissue sectioning and staining, and localization of enzymes. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00.

SC/BIOL 4230 4.00 General Entomology. The distinguishing characteristics, biology and economic importance of the major orders and families of insects. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 4240 3.00 Mammalian Systematics and Ecology (Mammology). The systematics, life history and ecology of mammals. Emphasis is on North American genera and the species of eastern Canada. Field and laboratory techniques are an integral part of the course. Two lecture hours and three laboratory hours per week. One term. Three credits. Prerequisites: SC/BIOL 2030 4.00; SC/BIOL 2050 4.00. Degree credit exclusion: SC/BIOL 4240 4.00.

SC/BIOL 4245 3.00 Conservation Biology. This course explores the role of biological science in efforts to conserve natural resources, systems and the organisms therein. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisites: SC/BIOL 2010 4.00; one of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00; SC/BIOL 2040 4.00; SC/BIOL 2050 4.00; or permission of the instructor. Degree credit exclusion: ES/ENVS 4110 3.00.

SC/BIOL 4250 3.00 Ornithology. A review of the adaptations of birds, including flight, physiology, behaviour and ecology, and their taxonomic diversity and evolution. Laboratories include field trips, a study of bird anatomy and examination of museum specimens. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite: One of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00.

SC/BIOL 4255 3.00 Biodiversity. We do not know the number of species on Earth, even to the nearest order of magnitude. This course discusses the factors that influence the number of species in an area and the importance of biodiversity to humanity. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite: Completion of 60 credits towards a degree in biology or environmental science or environmental studies, or permission of the instructor.

Cross-listed to: SC/BIOL 4255 3.00 and ES/ENVS 4111 3.00

SC/BIOL 4260 3.00 Systematic Biology in Theory and Practice. Systematics is the science of describing and categorizing biological diversity at all levels. It is central to most areas of biological inquiry. This course teaches students the history of systematics, its methods and their applications throughout biology. Two lecture hours, one three-hour laboratory/computer session. One term. Three credits. Prerequisites: SC/BIOL 2010 4.00; one of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00.

SC/BIOL 4265 3.00 Pollutants, Invaders and Global Change. This course summarizes our progress in conceptualizing, understanding and in solving large-scale ecological problems caused by the introduction of pollutants and exotic species to the environment. Three lecture hours. One term. Three credits. Prerequisites: One of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00; SC/BIOL 2050 4.00 or permission of the instructor.

SC/BIOL 4270 3.00 Reproduction. Molecular, genetic, cytological and evolutionary aspects of sexual reproduction. Comparison of the regulatory genes and proteins of sexual differentiation in *Saccharomyces*, *Drosophila*, *Caenorhabditis elegans*, mice, human and plants. Evolutionary advantages and disadvantages of sexual reproduction; asexual reproduction through parthenogenic mechanisms. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2040 4.00.

SC/BIOL 4280 3.00 Plant Molecular Biology. This course covers the uses of genetically engineered plants in basic research and industry. Emphasis is placed on methods for isolating higher plant genes and elucidating regulatory mechanisms. The agronomic potential of plant genetic engineering is discussed. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 3110 3.00; SC/BIOL 3160 4.00.

SC/BIOL 4285 3.00 Human Molecular Genetics. The course covers the application of genetic and molecular biological techniques to study human diseases and other related areas, and discusses ethical concerns that might arise from this research. Three lecture hours. One term. Three credits. Prerequisite or corequisite: SC/BIOL 3130 3.00.

SC/BIOL 4290 4.00 Biotechnology. This laboratory course covers some of the methods currently in use in biotechnology research in industry and academia. Emphasis is placed on methods for transforming eukaryotes with marker genes. Advanced methods used in molecular biology are also covered. Two lecture hours, six laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 3110 3.00 or SC/BCHM 3110 3.00.

Cross-listed to: SC/BCHM 4290 4.00 and SC/BIOL 4290 4.00

SC/BIOL 4300 3.00 Origins and Development of Biological Theories. An analysis of some central ideas in the philosophy of science. The origins and expansion of biological theories, with emphasis on Darwinism, the gene concept, the new synthesis, and the reinterpretation of these theories in molecular biological terms. Three lecture hours. One term. Three credits. Prerequisite: Open only to students in the final year of an Honours program in biology, or with permission of the instructor.

SC/BIOL 4305 3.00 Controversies in the Modern Life Sciences. The study of past and contemporary controversies in genetics, evolutionary theory and ecology. The focus is on analyzing the diverse aims, concepts, theories, techniques and institutional strategies which have shaped the development of modern biology. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 2040 4.00.

SC/BIOL 4310 3.00 Biological Timekeeping. An examination of the biological rhythms of cells, tissues and whole animals; the mechanisms of biological timekeeping and how those clocks interact with each other to coordinate physiological events within an animal and with the environment. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; one of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00.

SC/BIOL 4320 3.00 Vertebrate Endocrinology. Vertebrate endocrine structure and function; synthesis and regulation of hormones; mechanisms of hormone actions; and hormonal integration of physiological processes. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; one of SC/BIOL 2030 4.00, SC/BIOL 2031 3.00. Degree credit exclusion: AS/SC/KINE 4448 3.00.

SC/BIOL 4330 3.00 Invertebrate Endocrinology. An examination of the hormonal control of processes in selected invertebrates, particularly those involved in the control of postembryonic development. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 4340 3.00 Fish Biology. A study of fish biology (ichthyology), including anatomy, systematics, physiology, behaviour and ecology of freshwater and marine fishes. Special emphasis is placed on the unique features of fishes and their functional adaptation to aquatic environments. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 4350 4.00 Comparative Chordate Anatomy. A comparative study of the biology of chordate animals in which the evidence of their evolutionary relationships is emphasized. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 4360 4.00 Parasitology. Biology of animal parasites; developmental, structural and functional adaptations to the parasitic environments; immune and other responses of hosts; parasitic diseases. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisite: SC/BIOL 2030 4.00.

SC/BIOL 4370 3.00 Neurobiology. An analysis of recent advances in neurobiology, particularly information processing and storage in nervous systems and the biochemical basis of learning, memory and behaviour. The neurobiology of addiction, diseases of the nervous system and regeneration are also discussed. Three lecture hours. One term. Three

credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 3060 4.00.

SC/BIOL 4380 3.00 Systems Neuroscience. This course investigates the neural basis of visual and auditory perception, echolocation, smell, short- and long-term memory, and motor control. Emphasis is on understanding how neural interactions analyze sensory information and control complex behaviour. Three lecture hours. One term. Three credits. Prerequisite: SC/BIOL 3060 4.00.

SC/BIOL 4410 3.00 Advanced Drosophila Genetics. A study of recent advances in *Drosophila* genetics. The course addresses techniques such as chromosomal analysis, lethal tagging, genetic dissection, mosaic analysis, genetic screens, transposon tagging, enhancer trapping, methods for manipulating genes in transgenic flies and genetic ablation. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2040 4.00.

SC/BIOL 4420 3.00 Herpetology. A detailed presentation of the biology of amphibians and reptiles (herpetology) is given. Topics include taxonomy, reproduction, feeding, defence, environmental physiology of living forms. Special emphasis is placed on identification and life history of Canadian herpetofauna. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisites: SC/BIOL 2030 4.00; SC/BIOL 2050 4.00.

SC/BIOL 4450 4.00 Animal Development. Fertilization, cleavage, differentiation and development in selected animals. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/BIOL 2020 4.00; SC/BIOL 2021 4.00; SC/BIOL 2030 4.00; SC/BIOL 2040 4.00.

SC/BIOL 4510 3.00 Cellular and Molecular Basis of Muscle Physiology. Topics include muscle development, muscle-specific gene expression, molecular basis of muscle contraction, biochemical plasticity of muscle, sarcolemmal and nuclear signal transduction in muscle. Three lecture hours per week. One term. Prerequisites: AS/SC/KINE 3011 3.00, or both SC/BIOL 2020 4.00 and SC/BIOL 2021 4.00.

Cross-listed to: SC/BIOL 4510 3.00 and AS/KINE 4510 3.00 and SC/KINE 4510 3.00

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Business and Society – Arts

Program Office:
  S740 Ross Building, 416-736-2100, ext. 77805
Web Address:
  http://www.arts.yorku.ca/sosc/buso/
Program Coordinator:
  R. Wellen, Social Science
Affiliated Faculty:
  J. Dwyer, J.J. McMurtry, D. Reed, R. Wellen

The Business and Society (BUSO) Program is a liberal arts degree program that provides students with the tools needed to study and research the relationship between business and society. The Honours BA and BA degree programs in business and society represent innovative multidisciplinary degree programs that provide students with the opportunity to study the relationship between business and society in a variety of new forms. The core courses, which include a second-year foundations course (AS/SOSC 2340 9.00), provide students with basic analytical tools to study business and society. In addition to the core, both Honours BA and BA students will choose two of the nine following streams to focus their studies in: economics, environmental studies, geography, history, mathematics, political science, psychology, sociology and social science (labour studies).

Some students in the program may also wish to pursue basic courses in business skills in order to prepare for employment. Students interested in enhancing their business related skills are eligible to enrol in one of the professional certificates offered by the Faculty of Arts: the Certificate in Business Fundamentals or the Certificate in Non-profit Management. These certificates provide an additional avenue for students to develop business-related skills.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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Business Economics/Économie et commerce – Glendon

Department Office/Bureau du départemen t:
  327 York Hall, 416-487-6712
Chair of the Department/Directeu r:
  X. de Vanssay
University Professor and Professor Emeritus/Professeur de l'Université et Professeur émérite :
  D. McQueen
Associate Professors/Professeurs agrégé s:
  X. de Vanssay, O.F. Hamouda, J.R. Savary
Associate Professor Emeritus/Professeur agrégé émérite:
  N.S. Tryphonopoulos
Assistant Professors/Professeurs adjoints:
  V. Hildebrand, M. Lavoie
Assistant Professor Emeritus/Professeur adjoint émérite :
  J.I. McDonald
Adjunct Professor/Professeur auxiliaire :
  R. Sharma
Sessional Lecturer/Chargé de cours contractue l:
  J.E.M. Robert Despatie

The Business Economics Program is an Honours program, the object of which is to provide students interested in business as a career with an opportunity to combine business-oriented courses with an economics degree. Students may enrol in a General Honours, a Combined Honours (major only) or a Specialized Honours program. Note that not all courses listed below will be offered in any one year; students are advised to consult the department.

Students are expected to be familiar with standard computer applications programs, including word processing, spreadsheet, database, presentation software and Web browsers.

Students should seek the advice of a member of the department before choosing their courses.

For the list of courses, please consult Glendon's Programs of Study section of this Calendar.

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Le programme en Économie et commerce est un baccalauréat spécialisé dont le but est de permettre aux étudiants qui désirent faire carrière dans les affaires de suivre des cours à vocation commerciale dans le cadre d'une spécialisation en Science économique. Les étudiants peuvent s'inscrire au baccalauréat spécialisé général, au programme bidisciplinaire (majeure seulement), ou au baccalauréat spécialisé. Veuillez noter que les cours indiqués ci-dessous ne sont pas nécessairement enseignés chaque année, les étudiants sont priés de consulter le département.

Les étudiants sont censés se familiariser avec les logiciels courants de bureautique tels que les traitements de texte, les tableurs, les bases de données, les logiciels de présentation et les fureteurs pour le Web.

Les étudiants doivent consulter un membre du département avant de faire leur choix de cours.

(Il est entendu que certains cours cités en anglais ou en français ont un équivalent dans l'une ou l'autre langue, d'autres pas. Dans certains cas, le cours n'est offert qu'une fois sur deux.)

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Business Economics/Information Technology Economie et Commerce/Technologie de l'information – Glendon

Department Office/Bureau du département :
327 York Hall, 416-487-6712

Chair of the Department/Directeu r:
X. de Vanssay

University Professor and Professor Emeritus/Professeur de l'Université et Professeur émérite :
D. McQueen

Associate Professors/Professeurs agrégés :
X. de Vanssay, O.F. Hamouda, J.R. Savary

Associate Professor Emeritus/Professeur agrégé émérit e:
N.S. Tryphonopoulos

Assistant Professors/Professeurs adjoint s:
V. Hildebrand, M. Lavoie

Assistant Professor Emeritus/Professeur adjoint émérite :
J.I. McDonald

Adjunct Professor/Professeur auxiliaire :
R. Sharma

Sessional Lecturer/Chargé de cours contractue l:
J.E.M. Robert Despatie

The Department of Economics and the Department of Computer Science and Engineering jointly offer an Honours Double Major degree in business economics and information technology. This is a demanding program, but one that will give graduates the combination of business and technical skills that are in demand in today's employment market.

For the list of courses, please consult Glendon's Programs of Study section of this Calendar.

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Le Département de science économique et le Département d'informatique offrent conjointement un diplôme spécialisé avec double majeure en Économie et commerce et en Technologie de l'information. Ce programme exigeant offrira cependant aux diplômés la combinaison des compétences en affaires et des compétences techniques fort en demande de nos jours sur le marché du travail.

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Certificate in Business Fundamentals – Arts

Certificate Office:
S740 Ross Building, 416-736-2100, ext. 77805

Certificate Coordinator:
R. Wellen, Social Science

York University students may earn a Certificate in Business Fundamentals concurrent with fulfillment of the requirements for an Honours undergraduate BA degree. This certificate is open to students in all undergraduate faculties except for students enrolled in the Schulich School of Business bachelor of business administration program or the Atkinson bachelor of administrative studies program. Students may not earn both a Certificate in Business Fundamentals and a Certificate in Non-profit Management.

To qualify for possible admission to the Certificate in Business Fundamentals, students must complete 30 credits from a list of approved courses and the cumulative grade point average in these 30 credits must be 5.0 (C+). There are a limited number of spaces available in the Certificate in Business Fundamentals and therefore meeting the minimum requirements for application will not guarantee admission to the certificate program. In order to be granted the Certificate in Business Fundamentals upon graduation, students must be qualified to graduate with an Honours BA (120 credits) and must therefore maintain an overall grade point average of 5.0 (C+) in all courses completed.

Application to the Certificate in Business Fundamentals may be made only after successfully completing at least 54 credits and the successful completion of the following requirements with a minimum overall grade point average of 5.0 (C+).

For specific certificate requirements and the list of certificate courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

Listed below are required courses for the Certificate in Business Fundamentals offered by the Schulich School of Business.

SB/BFND 3100 3.00 Management and Business: An Introduction. This course will provide an intensive introduction to the nature and role of business organizations. The role of business organizations in the political economy of Canada will be described. Management functions including planning, decision making and control will be examined, and the major specialized management roles (operations management, finance and accounting, marketing/sales, human resources) will be introduced.

SB/BFND 3200 3.00 Finance and Accounting. Managers in business, as in all formal organizations, need to interpret and use financial information. This course will provide students with the fundamental conventions, standards and basic techniques used in collecting and using financial information in organizations. Degree credit exclusions: AS/ECON 3580 3.00 Financial Accounting and AS/ECON 3590 3.00 Managerial Accounting. Students who have successfully completed AS/ECON 3580 3.00 and AS/ECON 3590 3.00 may not enrol in SB/BFND 3200 3.00, and are therefore exempt from this requirement.

SB/BFND 4100 3.00 Markets and Marketing. This course examines the relationship between the business and a key component of its environment – the individuals or organizations to which it sells products and services. The primary focus of this course is how businesses learn about the markets they deal in, and how they act so as to be effective in attracting and keeping customers and clients.

SB/BFND 4200 3.00 Management Strategy and Implementation. Businesses exist in changing multi-dimensional environments. As social inventions, businesses in such environments need explicit strategy to survive and succeed. This course will identify different strategic options and the environment situations that make those options preferable. It will also examine the organizational design and human resource management implications of various strategic choices.

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Calumet College – Arts

Academic Program Office:
235 Calumet College, 416-736-5098

Web Address:
http://www.calumet.yorku.ca

College Master:
S. Sevigny

Academic Adviser:
G. McCabe

Listed below are the 1000- and 2000-level nine-credit foundations courses which are part of the Faculty of Arts general education requirement. These courses introduce students to interdisciplinary study and emphasize critical thinking, reading and writing skills at the university level, and reflect the academic mandate of the college.

AS/HUMA 1650 9.00 The Networked Imagination. This course explores the technological determinants operating today on almost all cultural forms. The main theme of this course is how the nature of digital representation and communication affects the nature of literature, visual arts and music, altering not only the forms and content, but the roles of artist/author and their audiences. (This course is affiliated with Calumet College.)

AS/HUMA 2190 9.00 Germany Through the Ages: Culture and Society. This course introduces students to the culture of Germany and the German-speaking countries from a North American perspective. The course takes an intercultural and interdisciplinary approach to key aspects of the literary, artistic, political and social history of these countries. (This course is affiliated with Calumet College.) Degree credit exclusion: AS/HUMA 2190 6.00.

Cross-listed to: AS/GER 2790 9.00 and AS/HUMA 2190 9.00

AS/SOSC 1000 9.00 Introduction to Social Science. The course considers the distinctive characteristics of modern society including the impact of modernization on the family, religion, economic behaviour, politics and belief systems. It introduces many of the major concepts social scientists use in analyzing how society works. (This course is affiliated with Calumet College.) Degree credit exclusions: AS/SOSC 1000 6.00, AS/SOSC 1009 9.00.

AS/SOSC 1310 9.00 Introduction to Communications. This course provides a critical overview of the main issues in the field of communication and media. It examines how forms and processes of communication are implicated in our understanding of the world at both the personal and social levels. (This course is affiliated with Calumet College.) Degree credit exclusion: AS/SOSC 2310 9.00.

AS/SOSC 1510 9.00 The Future of Work. This course studies the emerging patterns of work in Canadian society. It provides a comprehensive understanding of the post-war work world, the causes of its breakdown, changing values and identities, and competing scenarios for work, leisure and unemployment. (This course is affiliated with Calumet College.)

AS/SOSC 1731 9.00 CyberCities: The Community and Communication in Changing Urban Areas. Technology's impact on cities is examined, with emphasis on institutions and landscapes. Changes of metropolitan form, issues of community formation, and emerging patterns of work, leisure and urban life are explored in the context of shifting modes of electronic communication. (This course is affiliated with Calumet College.)

AS/SOSC 1740 9.00 Development of Urban Economies: Comparing Canada and the Third World. This course compares urban economic development in Canada and the Third World in terms of industrialization, urbanization and economic dependency. Themes are: colonial cities and industrial dependence; the multinational corporation, technological dependence and urban employment; urban problems and alternative solutions. (This course is affiliated with Calumet College.)

AS/SOSC 2330 9.00 The Economics of Law Policy and Organization. This course considers economics as a form of moral argument. This course considers how economists evaluate existing government policies in a broad variety of areas, including housing policies and rent control, environmental protection and gender equity in the workplace. (This course is affiliated with Calumet College.) Degree credit exclusions: AS/SOSC 3530 6.00, AS/POLS 3310 6.00.

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Canadian Studies – Atkinson, Glendon

Atkinson:

Office:
School of Arts and Letters
625 Atkinson Building, Tel: 416-736-5900, Fax: 416-736-5766, e-mail: _aksal@yorku.ca_
Program Coordinator:
William Westfall
University Professor:
L.C. Sanders
Professors:
F. Beer, W.R. Ellenwood, J.R. Laxer, V. Lindström, J.P. Unrau
Professor Emeritus:
B. Callaghan
Associate Professors:
B. Cameron, D. Cooper-Clark, T. Das Gupta, L. Davids, A. Davis, G. Martell, H. Moghissi, E. Reiter, W. Westfall, B. Whittaker
Associate Professors Emeriti:
J.M. Cameron, J.P. Harney, S.O. Kjellberg, C. Romalis, P.D. Such
Assistant Professor:
M.J. Goodman

Prerequisite: A 1000-level course in humanities and a 1000-level course in social science (Canadian perspectives are recommended). The second _general education course may be taken concurrently with Introduction to Canadian Studies AK/CDNS 2200 6.00._

Additional Courses

Atkinson courses for major credit for all levels in the Canadian Studies Program are listed under their own disciplines. Please see "Canadian Studies, Program Requirements" in the Programs of Study section for the list.

Glendon:

Program Office/Bureau du programme :
160 York Hall, 416-487-6704
Program Coordinator/Coordonnateur du programme :
Geoffrey Ewen

Students may design interdisciplinary programs in Canadian studies in consultation with the coordinator of Canadian studies. Please see Glendon's Programs of Study section for the list of additional courses.

Courses in Canadian Studies

GL/CDNS 1920 6.00 Introduction to Canadian Studies. This course provides basic knowledge of Canadian culture - history, literature and fine arts - from 1759 to the present, as well as an ongoing analysis of Canadian current affairs. Degree credit exclusions: GL/CDNS/HUMA/SOSC 2640 6.00. This course is open to first- and second-year students.

Cross-listed to: GL/CDNS 1920 6.00 and GL/HUMA 1920 6.00 and GL/SOSC 1920 6.00

GL/CDNS 1920 6.00 Introduction aux études canadiennes. Ce cours constitue une introduction aux études canadiennes dans une perspective d'ouverture du Canada vis-à-vis le monde extérieur. Il présente une lecture des phénomènes reliés à la transition entre les sociétés traditionnelles autochtones et immigrantes, et celles connaissant le développement de la Modernité au Canada. Ce cours est ouvert aux étudiant(e)s de 1e, 2e et 3e années.

Language of Instruction: French

Cross-listed to: GL/CDNS 1920 6.00 and GL/HUMA 1920 6.00 and GL/SOSC 1920 6.00

GL/CDNS 2011 3.00 Les beaux arts au Québec. Ce cours porte sur ce qui s'est fait de plus représentatif et significatif dans les beaux-arts au Québec depuis l'arrivée des Français en Nouvelle-France jusqu'à nos jours. Étude historique, esthétique, sémiotique et idéologique. Condition préalable : Avoir suivi le cours GL/FRLS 1520 6.00 ou en avoir été dispensé.

Language of Instruction: French

Cross-listed to: GL/CDNS 2011 3.00 and GL/FRAN 2011 3.00 and GL/HUMA 2011 3.00

AK/CDNS 2200 6.00 Introduction to Canadian Studies. An interdisciplinary introduction to the cultural and social analysis of Canada and a comparison and evaluation of the leading schools of thought concerning the central issues facing Canada. Note: Not open to students who have taken AK/CDNS 2000 6.00 or AK/CDNS 3000 6.00.

GL/CDNS 2600 6.00 Government and Politics of Canada. This course examines some of the key institutions and processes of political life in Canada. It deals with the origins and development of Canadian political traditions, political parties, the evolution and contemporary nature of the federal system, the role of interest groups, the electoral system and voting behaviour, the Prime Minister and the Cabinet, the legislative system and the public policy process. Degree credit exclusion: GL/POLS 2540 6.00(EN), GL/POLS 2011 6.00(FR) (Fall/Winter 1994-1995).

Cross-listed to: GL/CDNS 2600 6.00 and GL/POLS 2600 6.00

GL/CDNS 2600 6.00 Introduction au gouvernement et à la politique du Canada. On étudie le processus politique au Canada en examinant l'évolution du système fédéral, de la culture politique, des principales institutions législatives, exécutives, judiciaires et administratives ainsi que le rôle des groupes de pression, des partis politiques, du système électoral

et des principaux acteurs politiques. Cours incompatibles : GL/POLS 2540 6.00(EN), GL/POLS 2011 6.00(FR) (Automne/hiver 1994-1995).

Language of Instruction: French

Cross-listed to: GL/CDNS 2600 6.00 and GL/POLS 2600 6.00

GL/CDNS 2630 6.00 First Nations of Canada. Perspectives on Inuit and Indian communities of Canada; cultural and linguistic diversity; traditional economic and social organization; religion and art; the impact of Western society; contemporary strategies for survival.

Cross-listed to: GL/CDNS 2630 6.00 and GL/SOCI 2630 6.00 and GL/SOSC 2630 6.00

GL/CDNS 2650 3.00 Mass Media, Culture and Society. This course examines the way in which mass communication reproduces culture in traditional, modern and postmodern societies. Sociological and interdisciplinary approaches are introduced for a comparative focus on Canadian and Québécois media in the North American context. Degree credit exclusion: GL/SOCI 2420 3.00(EN).

Cross-listed to: GL/CDNS 2650 3.00 and GL/SOCI 2650 3.00 and GL/SOSC 2650 3.00

GL/CDNS 2930 3.00 Regionalism, Culture and Identity in Canada. Using an interdisciplinary approach, this course will examine regions and regionalism in Canada through a consideration of physical and human geography, as a political and ideological construct, and through representation in literature and the visual arts. Degree credit exclusion: GL/CDNS 2200 6.00(FR).

Cross-listed to: GL/CDNS 2930 3.00 and GL/SOSC 2930 3.00

GL/CDNS 2930 3.00 Régionalisme, culture et identité au Canada. Avec une approche interdisciplinaire ce cours traite de l'étude des régions et du régionalisme au Canada. Il explore la géographie humaine et physique du pays, ainsi que les questions de politique et d'idéologie et la représentation que donnent la littérature et les arts visuels des paysages régionaux. Cours incompatible : GL/CDNS 2200 6.00(FR).

Language of Instruction: French

Cross-listed to: GL/CDNS 2930 3.00 and GL/SOSC 2930 3.00

GL/CDNS 3011 6.00 Formation et développement de la société québécoise/Formation and development of Quebec Society. Le cours montre comment le Québec est entré au Xxe siècle dans l'espace du Canada français pour en ressortir dans l'espace québécois. On cernera son développement à l'aide d'indicateurs, de discours et des interprétations données au fil des ans./This course will examine how Québec shifted from a French Canadian to a Québécois space over the course of the 20th century. We will examine social developments using social indicators, texts and interpretations showing these historical developments.

Language of Instruction: English/French

Cross-listed to: GL/CDNS 3011 6.00 and GL/HIST 3011 6.00 and GL/POLS 3011 6.00 and GL/SOCI 3011 6.00 and GL/SOSC 3011 6.00

GL/CDNS 3100 6.00 Individual Studies. An individual study is an opportunity for students to create and pursue appropriate interests with the assistance and guidance of a qualified faculty member. Details of the final proposal must be approved by the supervising faculty member and the program coordinator.

GL/CDNS 3100 6.00 Travail individuel. Le travail individuel permet d'approfondir un sujet de son choix sous la direction d'un membre du corps enseignant du collège. Les détails de la proposition finale doivent être acceptés par le/la professeur(e) désigné(e) ainsi que par le coordonnateur/la coordonnatrice du programme. Condition préalable : GL/CDNS 1920 6.00.

Language of Instruction: French

GL/CDNS 3200 6.00 Quebec Studies: An Interdisciplinary Approach/Le Québec: approches interdisciplinaires. Through an interdisciplinary approach, this course analyzes the historical and contemporary features of Quebec society. Attention will be given to the evolving political, sociological and cultural features of Quebec, and the

relations between these different approaches. / Par le biais d'une approche interdisciplinaire, ce cours traite de l'étude de la société québécoise dans ses aspects historiques et contemporains. Il explore l'évolution de la politique, la société et la culture québécoises, ainsi que les relations entre ces différentes approches.

Language of Instruction: English/French

GL/CDNS 3200 6.00 Quebec Studies: An Interdisciplinary Approach. Through an interdisciplinary approach, this course analyzes the historical and contemporary features of Quebec society. Attention will be given to the evolving political, sociological and cultural features of Quebec, and the relations between these different approaches.

GL/CDNS 3615 6.00 Contemporary Women Playwrights. This course studies selected plays by contemporary American, British and Canadian women playwrights. Primary methodology is close reading. Attention will also be paid to how theatrical and cultural contexts and material circumstances are embedded in the representations of gender. Degree credit exclusions: GL/EN/WMST 3011 6.00 (2000-2001), GL/EN/CDNS 3010 6.00/WMST 3800 6.00 (1998-1999), GL/CDNS/WMST 4012 3.00 (Fall 1995).

Cross-listed to: GL/CDNS 3615 6.00 and GL/DRST 3615 6.00 and GL/EN 3615 6.00 and GL/WMST 3615 6.00

GL/CDNS 3621 3.00 Canada in Global Perspective/Le Canada, perspective globale. This course will examine the impact of globalization on Canada and Canadians. It will focus on international economic forces and the influence they exert on the Canadian economy, on domestic politics and on social relations within Canada./Le cours examine l'impact de la mondialisation sur le Canada et sur les canadiens. Il explore principalement les forces économiques qui sont en jeu et l'influence qu'elles exercent sur l'économie canadienne, sur la politique nationale et sur les relations sociales à l'intérieur du pays.

Language of Instruction: English/French

Cross-listed to: GL/CDNS 3621 3.00 and GL/ILST 3621 3.00 and GL/SOSC 3621 3.00

GL/CDNS 3623 3.00 La sociologie des minorités francophones du Canada. Ce cours traite de l'expérience récente des minorités francophones des provinces canadiennes, dans une perspective sociologique. Il examine leur situation dans plusieurs institutions centrales telles l'éducation, la loi, la communauté, la politique et la religion. Cours incompatibles : GL/SOCI 3014 F 3.00 (Hiver 1995), GL/SOCI 3010B 3.00 (Hiver 1997) et GL/SOCI 3012 3.00(FR) (Hiver 1999).

Language of Instruction: French

Cross-listed to: GL/CDNS 3623 3.00 and GL/SOCI 3623 3.00 and GL/SOSC 3623 3.00

GL/CDNS 3624 3.00 La sociologie des minorités ethniques au Québec. Ce cours traite des relations entre les Québécois francophones et les minorités ethnolinguistiques québécoises. Il examine dans une perspective sociologique les efforts du peuple et du gouvernement québécois pour définir et pour institutionnaliser la place de ces minorités. Cours incompatibles : GL/SOCI 3011F 3.00 (Automne 1994), GL/SOCI 3011F 3.00 (Automne 1996) et GL/SOCI 3010A 3.00 (Automne 1998).

Language of Instruction: French

Cross-listed to: GL/CDNS 3624 3.00 and GL/SOCI 3624 3.00 and GL/SOSC 3624 3.00

GL/CDNS 3640 3.00 Littérature canadienne-française avant 1960. Étude d'oeuvres représentatives des principaux courants littéraires du lendemain de la Conquète jusqu'en 1960, début de la Révolution tranquille; les oeuvres seront considérées dans leur contexte artistique et socio-politique. Cours incompatible: GL/FRAN 2680 3.00.

Language of Instruction: French

Cross-listed to: GL/CDNS 3640 3.00 and GL/FRAN 3640 3.00

GL/CDNS 3657 3.00 Reproductive Technology. This course focuses on the biology of reproduction and on reproductive technologies. Social, legal, ethical, economic and political aspects of reproductive technologies will be discussed, with particular attention to the Canadian Report of the

Royal Commission on New Reproductive Technologies. Degree credit exclusions: GL/NATS/SOSC/WMST 3655 6.00(EN) and GL/NATS 3010 3.00(EN) (Fall 1996).

Cross-listed to: GL/CDNS 3657 3.00 and GL/NATS 3657 3.00 and GL/SOSC 3657 3.00 and GL/WMST 3657 3.00

GL/CDNS 3658 3.00 Genetic Technology: Its Applications to Industry, Medicine and Agriculture. This course will focus on DNA technology and its use in areas of health, medicine, pharmaceuticals, forensic science and animal and plant breeding. Ethical, legal, medical and environmental safety issues arising from the application of DNA technology will be discussed, using Canadian examples where possible. Degree credit exclusion: GL/NATS 3010C 3.00 (Fall 1996).

Cross-listed to: GL/CDNS 3658 3.00 and GL/NATS 3658 3.00

GL/CDNS 3660 3.00 Littérature québécoise depuis 1960. Analyse de 5 ou 6 oeuvres majeures choisies parmi les romans, les essais et les poèmes publiés au Québec depuis 1960, à partir de grilles fournies par la critique structurale, la psycho-critique, la socio-critique, la sémiotique etc. Cours incompatible : GL/FRAN 3340 6.00(FR).

Language of Instruction: French

Cross-listed to: GL/CDNS 3660 3.00 and GL/FRAN 3660 3.00

GL/CDNS 3662 6.00 Linguistic, Cultural and Ethnic Diversity in Canada. An examination of Canada as a pluralistic society - one composed of groups with diverse linguistic, cultural and ethnic backgrounds. Topics include: differing images of Canadian diversity and inequality; intergeneration transmission of diverse identities; government policy on language culture and discrimination.

Cross-listed to: GL/CDNS 3662 6.00 and GL/SOCI 3662 6.00 and GL/SOSC 3662 6.00

GL/CDNS 3663 3.00 Human Rights and Civil Liberties in Canada. This course examines the development of human rights legislation and the present state of civil liberties in Canada. Among other themes that will be analyzed are holocaust denial; hate literature; gay and lesbian rights; police powers; personal privacy; measures against terrorism; discrimination and affirmative actions. Prerequisite: Six credits in political science or philosophy or sociology. Degree credit exclusions: GL/POLS 3011 3.00(EN) (1991), GL/POLS 4011 3.00 (1999) and GL/CDNS/POLS 3014 3.00(EN) (Fall 2002).

Cross-listed to: GL/CDNS 3663 3.00 and GL/POLS 3663 3.00 and GL/SOCI 3663 3.00

GL/CDNS 3670 6.00 Le multiculturalisme et l'ethnicité au Canada. L'objectif du cours est de comprendre la notion de l'ethnicité et du multiculturalisme et leurs implications pour le Canada. Après un examen historique des fondements de l'ethnicité, le cours étudiera les politiques gouvernementales vis-à-vis l'immigration et le racisme. Enfin, nous examinerons par quels moyens les communautés ethno-culturelles s'organisent aujourd'hui et les implications pour l'avenir du Canada.

Language of Instruction: French

Cross-listed to: GL/CDNS 3670 6.00 and GL/HUMA 3670 6.00 and GL/SOSC 3670 6.00

GL/CDNS 3675 6.00 Images du Canada. Selon une perspective pluridisciplinaire, ce cours cherche à élucider le sens et le contenu de l'idée "Canada" dans ses variations temporelles et spatiales. Nous chercherons à examiner les problèmes généraux de définition d'un pays et les diverses perspectives utilisées. Pendant la première session nous porterons notre attention sur les définitions et les idéologies proposées à travers notre histoire par divers groupements. Dans la deuxième session, nous examinerons les images du Canada à travers certains thèmes du Canada contemporain. Cours incompatibles : GL/SOSC/HUMA 3015F 3.00 (Hiver 1995), 3014F 3.00 (Automne 1995), 3015F 3.00 (Hiver 1996), 3010C 3.00 (Automne 1996) et 3010B 3.00 (Hiver 1997).

Language of Instruction: French

Cross-listed to: GL/CDNS 3675 6.00 and GL/HUMA 3675 6.00 and GL/SOSC 3675 6.00

GL/CDNS 3680 3.00 Logic of Social Inquiry: Qualitative Methods. An examination of how theories influence the logic of inquiry and research designs. Assumptions concerning objectivity and values are discussed and problems of operationalization are analyzed. Prerequisite: A course in Canadian studies or political science or sociology.

Cross-listed to: GL/CDNS 3680 3.00 and GL/POLS 3680 3.00 and GL/SOCI 3680 3.00

GL/CDNS 3680 3.00 La logique de l'enquête : méthodes qualitatives. Une étude des relations entre la théorie et la pratique de la recherche. Les questions d'objectivité et l'intrusion des valeurs. Le cours se préoccupera de la recherche qualitative. Condition préalable : Un cours en Études canadiennes, Science politique ou Sociologie.

Language of Instruction: French

Cross-listed to: GL/CDNS 3680 3.00 and GL/POLS 3680 3.00 and GL/SOCI 3680 3.00

GL/CDNS 3690 3.00 The Logic of Social Inquiry: Quantitative Methods (Data Collection and Analysis). The course concentrates first on questionnaire design and interview procedures and extrapolates from these techniques the general problems of data collection. Secondly, it examines the logic of research procedures used in assessing and interpreting data. Prerequisite: A course in Canadian studies or political science or sociology.

Cross-listed to: GL/CDNS 3690 3.00 and GL/POLS 3690 3.00 and GL/SOCI 3690 3.00

GL/CDNS 3690 3.00 La logique de l'enquête : méthodes quantitatives. Le cours examinera d'abord la construction de questionnaire et de cédules d'interview pour illustrer les problèmes qu'implique la collecte des données sociales. Ensuite il considérera l'interprétation des statistiques sociales.

Language of Instruction: French

Cross-listed to: GL/CDNS 3690 3.00 and GL/POLS 3690 3.00 and GL/SOCI 3690 3.00

GL/CDNS 4000 6.00 Honours Thesis. This course permits students enrolled in an Honours program to pursue in depth a particular topic of interest with the assistance of a qualified faculty member. The subject has to be chosen by the student in conjunction with and be approved by the faculty member. Proposals must be approved by the supervising faculty member and the program coordinator. Prerequisite: GL/CDNS 1920 6.00.

AK/CDNS 4100 6.00 Directed Reading. This course is designed to enable the student to conduct a detailed independent study of his or her own choosing. The student will undertake intensive reading and writing in one or two selected areas. Specific areas are to be selected in consultation with the coordinator of the program and members of the Canadian Studies Committee. Prerequisites: 78 credits and permission of the coordinator of Canadian studies. Note: Students must be accepted by a faculty supervisor before they can register in 4000-level directed reading courses. The course transaction form for such courses must be submitted with a note from the supervisor stating his/her willingness to perform this task. Permission of the program coordinator is also required.

GL/CDNS 4200 6.00 Séminaire de recherche en études canadiennes/Research Seminar in Canadian Studies. Cours à la fois théorique et pratique sur les approches en études canadiennes. Après un survol de l'évolution des études canadiennes, les étudiants explorent, par le biais de lectures et de discussions, les perspectives disciplinaire, pluridisciplinaire et interdisciplinaire. Ils mettent en pratique ces approches en effectuant des exercices portant sur des thèmes reliés à l'identité canadienne et en rédigeant un travail de recherche sur un sujet de leur choix./A practical as well as theoretical study of the various approaches to Canadian studies. Following a survey of the evolution of this discipline, students will investigate, through readings and discussion, its disciplinary, multidisciplinary and interdisciplinary perspectives. The students will then put into practice their understanding of these three approaches by preparing short papers on the theme of Canadian identity, and submitting a major research paper on a subject of their choice. Condition préalable : 12 credits on Canadian subjects recognized by the Canadian Studies Program or permission of the instructor/12 crédits sur des sujets

canadiens reconnus par le programme en Études canadiennes ou la permission du professeur.

Language of Instruction: English/French

GL/CDNS 4625 3.00 Littérature franco-ontarienne. Études d'oeuvres de tous genre (littérature intimiste, essai, roman, théâtre, poésie, conte et nouvelle) qui illustrent les temps forts de la littérature franco-ontarienne : prise de conscience; enracinement (fidélité ou retour au passé); déracinement (séparation, voyage, émigration, évasion).

Language of Instruction: French

Cross-listed to: GL/CDNS 4625 3.00 and GL/FRAN 4625 3.00

GL/CDNS 4655 6.00 Selected Themes in Canadian Political History 1867 - 1984. This course examines the development of Canadian political parties in their historical context. Prerequisite: A course in either Canadian history or Canadian studies or Canadian politics or permission of instructor. Degree credit exclusions: GL/HIST 4010 6.00(EN) (1996-1997, 2000-2001) and GL/HIST/POLS 4010 6.00(EN) (2001-2002).

Cross-listed to: GL/CDNS 4655 6.00 and GL/HIST 4655 6.00 and GL/POLS 4655 6.00 and GL/SOSC 4655 6.00

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Centre for Academic Writing – Arts

Department Office:
  S329 Ross Building, 416-736-5134
Web Address:
  http://www.arts.yorku.ca/caw/
Chair:
  J. Rehner
Associate Professor:
  R. Sheese
Assistant Professors:
  J. Blazina, B. Lowinksy, A. Marquez, B. McComb, P. Rozendal, J. Webber
Senior Lecturer:
  J. Rehner
Associate Lecturers:
  T. Greenwald, J. Spencer
Assistant Lecturer:
  D. O'Neill

The Centre for Academic Writing assists students to become effective independent writers, within both their academic life and elsewhere. The primary means of achieving this objective is through the centre's individualized tutoring program. All Faculty of Arts students are eligible to enrol in this program and take advantage of the opportunity to work on their writing with one of the centre's experienced faculty. The centre also regularly offers mini-courses on various issues related to writing effectively in university.

The Centre for Academic Writing offers the following courses for degree credit.

AS/CAW 1100 3.00 Studies in the University: Higher Education at York University. This course introduces students to the theory and practice of university education. It combines an examination of York University as an institution in its historical, political and social context with instruction in reading, thinking and writing at the university level.

AS/WRIT 1000 3.00 Academic Writing in the Social Sciences. The course examines the process of reading and writing academic papers with emphasis on the latter. Topics considered include writing as a learning process, developing academic ideas, using and documenting academic sources, planning and organizing a paper, revising and editing. Degree credit exclusions: AS/CAW 1000 3.00, AS/CAW 1200 3.00, AS/WRIT 1200 3.00.

AS/WRIT 1200 3.00 Academic Writing in the Humanities. This course examines the process of reading and academic writing with emphasis on the latter. Topics include writing as a learning process, developing academic ideas, using and documenting academic sources, planning and organizing a paper, revising and editing. Degree credit exclusions: AS/CAW 1200 3.00, AS/CAW 1000 3.00, AS/WRIT 1000 3.00.

AS/WRIT 1300 3.00 Theories of Writing. Students in this course explore, and learn to apply, some of the recent research on the act of writing from a variety of disciplines including cognitive psychology, linguistics, communications studies and education.

AS/WRIT 1310 3.00 Writing Strategies for Nonfiction. This course analyzes the elements found in successful examples of nonfiction prose, professional and technical writing in order that students may apply these principles to their own writing. Note: Internet access is required for this course.

AS/WRIT 1500 3.00 Writing and Computers. This course explores some of the recent research on the act of writing and on writing with computers. Students learn how to apply the findings of this research to their own writing with computers. Note: This course meets in a computer lab; computer use is required.

AS/WRIT 1600 3.00 Academic Writing: Developing Sentence Sense. This course examines current theory on the role of grammar and style in the writing process and provides students with strategies for constructing clear, readable sentences in the context of academic writing. Degree credit exclusion: AS/EN 2910 6.00.

AS/WRIT 1980 9.00 Professional Writing: Process and Practice. This course considers a wide range of written expression including fiction, nonfiction, poetry and technical/business writing, with an emphasis on the theory and practice of writing. (This course is affiliated with Founders College.)

Cross-listed to: AS/HUMA 1980 9.00 and AS/WRIT 1980 9.00

AS/WRIT 2100 3.00 The Essay: Rhetoric and Writing. This course teaches academic writing in the historical and generic context of the essay. The rhetorical strategies of argumentative writing are examined through the reading and analysis of essays, and by writing short weekly assignments in a computer lab. Note: Internet access is required for this course.

AS/WRIT 2200 3.00 New Challenges in Academic Writing. This course explores the range of voices students are likely to encounter in their course readings in an increasingly inclusive university setting, and the corresponding changes in the expectations, difficulties and possibilities they may face in their writing assignments.

AS/WRIT 2300 3.00 A Writer's Introduction to Research. A practical introduction to strategies for using library, online and other resources, this course develops students' abilities to formulate research plans, to evaluate and organize information, and to present it effectively and responsibly. Note: Lectures and labs will be offered in alternate weeks.

AS/WRIT 2400 3.00 Writing History. This course explores different modes of historical writing and conflicting, critical interpretations of the past. Students apply what they are learning to various writing assignments, focusing on both an appreciation of different historical genres and critical skills development.

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Chemistry – Pure and Applied Science

Department Office:
  124 Chemistry Building, 416-736-5246
Chair of the Department:
  D.R. Hastie
University Professor Emeritus:
  H.I. Schiff
Distinguished Research Professors:
  D.K. Bohme, A.B.P. Lever
Distinguished Research Professors Emeriti:
  G.O. Aspinall, H.O. Pritchard
Professor and Guy Warwick Rogers Chair in Atmospheric Chemistry:
  G.W. Harris

Professor and NSERC/MDS SCIEX Chair:
  K.W.M. Siu
Professors:
  D.R. Hastie, A.C. Hopkinson, E. Lee-Ruff, C.C. Leznoff,
  M. Mozurkewich, W.J. Pietro, J. Rudolph
Professors Emeriti:
  T. Carrington, S.V. Filseth, J.M. Goodings, C.E .Holloway
Associate Professors:
  R.K. Allan, R. Fournier, S.N. Krylov, R. McLaren, M.G. Organ,
  P.G. Potvin, D.V. Stynes, I.M .Walker
Associate Professors Emeriti:
  D.N. Butler, G. Hunter, C.R. McArthur, C.M .Sadowski
Assistant Professors:
  R. Hudgins, P. Johnson, S. Morin
Associate Lecturer:
  M. Hempstead

Chemistry is the study of the structure and properties of matter including the energy changes that accompany chemical reactions. The understanding gained from these studies is applied in the prediction of the behaviour of matter and in the interpretation of a wide variety of phenomena. Chemistry is linked closely with a number of other subjects, ranging from astrophysics and earth science to the biological and medical sciences, which involve matter at various levels of complexity.

The Department of Chemistry offers undergraduate courses in all the major sub-disciplines of the subject, including physical, theoretical, analytical, inorganic, organic and biological chemistry. Specialized programs in Chemistry (see the Faculty of Pure and Applied Science Programs of Study section of this Calendar) include a required core of courses to ensure that the student acquires a broad knowledge of the subject, but also provide opportunities for the student to concentrate on areas of particular interest. In the applied chemistry area the Department of Chemistry also offers specialization in atmospheric chemistry (see the Faculty of Pure and Applied Science Programs of Study section of this Calendar).

Courses in Chemistry

The contact-hour information in the course outlines below specifies the number of hours per week when the course is taught in the daytime in a fall/winter session. If the course is offered in the evening and/or in a summer session, the format and scheduling may be different, though equivalent in credit value.

SC/CHEM 1000 3.00 Chemical Structure. (formerly half of SC/CHEM 1000 6.00 - before 2001-2002). Introduction to chemistry with emphasis on physical and electronic structure of matter, including gases, liquids and solids. Topics include behaviour of gases; thermochemistry; atomic structure and periodic table; chemical bonding and architecture; structure of liquids and solids; frontiers of chemistry. Two and one-half lecture hours per week, one tutorial hour per week, six three-hour laboratory sessions. One term. Three credits. Prerequisites: OAC chemistry, 12U chemistry or SC/CHEM 1500 4.00 or equivalent. Degree credit exclusions: SC/CHEM 1000 6.00, SC/CHEM 1010 6.00, AK/CHEM 2000 6.00.

SC/CHEM 1001 3.00 Chemical Dynamics. (formerly half of SC/CHEM 1000 6.00 - before 2001-2002). This course complements SC/CHEM 1000 3.00 - with emphasis on chemical change and equilibrium. Topics include chemical kinetics; chemical equilibrium; entropy and free energy as driving forces for chemical change; electrochemistry; frontiers in chemistry. Two and one-half lecture hours per week, one tutorial hour per week, six three-hour laboratory sessions. One term. Three credits. Prerequisites: OAC chemistry, 12U chemistry or SC/CHEM 1500 4.00 or equivalent. Degree credit exclusions: SC/CHEM 1000 6.00, SC/CHEM 1010 6.00, AK/CHEM 2000 6.00.

SC/CHEM 1500 4.00 Introduction to Chemistry. An introductory course in chemistry for students needing an adequate preparation for SC/CHEM 1000 6.00. Topics include basic atomic theory, stoichiometry, the periodic table, chemical bonding, equilibria, acids and bases, oxidation-reduction and organic chemistry. Each student is counselled by a faculty adviser to enrol either in this course or in SC/CHEM 1000 6.00 depending on previous chemistry experience. Three lecture hours per week, three laboratory hours and two tutorial hours in alternate weeks. One term. Four

credits. Degree credit exclusions: SC/CHEM 1520 4.00. May not be taken by any student who has taken or is currently taking another university course in chemistry.

SC/CHEM 1509 0.00 Compulsory Tutorial for SC/CHEM 1500 4.00. Students enrolled in SC/CHEM 1500 4.00 must also enrol in this mandatory tutorial. Not open to other students. Two tutorial hours in alternate weeks.

SC/CHEM 2010 3.00 Symmetry, Electronic Structure and Bonding. An introduction to elementary group theory and wavefunctions for atoms and molecules. Topics include descriptions of bonding and the use of symmetry in the construction of molecular orbitals and in the derivation of selection rules for electronic and vibrational spectroscopy. Three lecture hours, one tutorial hour. One term. Three credits. Prerequisites: Both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00; AS/SC/MATH 1013 3.00; AS/SC/MATH 1014 3.00. Prerequisite or corequisite: SC/PHYS 1410 6.00 or SC/PHYS 1010 6.00.

SC/CHEM 2011 3.00 Introduction to Thermodynamics. This course is an introduction to equilibrium chemical thermodynamics. The three laws of thermodynamics and the thermodynamic state functions are described. Many applications are considered, including the operation of heat engines, phase transformations, thermochemistry and chemical reaction equilibria. Three lecture hours, one tutorial hour. One term. Three credits. Prerequisites: AS/SC/MATH 1013 3.00; AS/SC/MATH 1014 3.00. Degree credit exclusion: SC/CHEM 2050 3.00.

SC/CHEM 2020 6.00 Organic Chemistry. (formerly SC/CHEM 2020 5.00 - before Summer 2000) Structure including stereochemistry, physical and chemical properties of simple organic compounds; methods in structure determination; introductory concepts of reaction mechanisms and methods for determination of mechanisms. Two and one-half lecture hours per week, three laboratory hours every second week, one tutorial hour every week. Two terms. Six credits. Prerequisites: Both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00 Degree credit exclusion: SC/CHEM 2020 5.00.

SC/CHEM 2030 4.00 Basic Inorganic Chemistry. The descriptive chemistry of the more common elements is discussed within the context of qualitative inorganic analysis. Principles of ionic equilibria in aqueous solution, elementary coordination chemistry and electrochemical potentials are presented. Three lecture hours, three laboratory hours, one tutorial hour. One term. Four credits. Prerequisites: Both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00.

SC/CHEM 2080 4.00 Analytical Chemistry. Introduction to quantitative chemical analysis and the analytical method; errors and statistical analysis of data; gravimetric and volumetric methods of analysis including acid-base, precipitation, complexation and redox titrimetry, the effect of equilibria on chemical analysis; introduction to potentiometry and spectrophotometry. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: Both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00. Degree credit exclusions: SC/CHEM 2110 5.00, SC/CHEM 2110 4.00.

SC/CHEM 3010 4.00 Physical Chemistry. An introduction to spectroscopy and statistical thermodynamics for atoms and small molecules. Determination and applications of enthalpies of formation, reaction and solution for different systems. Three lecture hours per week, five three-hour laboratories. First term. Four credits. Prerequisites: SC/CHEM 2010 3.00; SC/CHEM 2011 3.00.

SC/CHEM 3011 4.00 Physical Chemistry. This is an introductory course in chemical kinetics as applied primarily to reactions in the gas phase but also in solution and at electrode surfaces. Three lecture hours per week, five three-hour laboratories. Second term. Four credits. Prerequisite: SC/CHEM 2011 3.00.

SC/CHEM 3020 4.00 Organic Chemistry II. A course organizing structural organic chemistry on a mechanistic basis and applying these mechanisms to synthesis and degradation. The application of spectroscopic methods is also incorporated where appropriate. Three lecture hours per week, seven three-hour laboratories. One term. Four

credits. Prerequisites: SC/CHEM 2020 6.00 or SC/CHEM 2020 5.00; SC/CHEM 2030 4.00.

SC/CHEM 3021 4.00 Organic Chemistry III. A course building on SC/CHEM 3020 4.00 and introducing methods for probing mechanisms, base-catalyzed reactions, rearrangements, cyclization, strain, pericyclic reactions and other topics. Three lecture hours per week, eight three-hour laboratories. One term. Four credits. Prerequisite: SC/CHEM 3020 4.00.

SC/CHEM 3030 4.00 Transition Metal Chemistry. The chemistry of the transition metals is discussed from an historical perspective and within the context of modern theories of bonding, structure and spectroscopy. Topics include classical coordination compounds, organometallics, metallocenes, metal carbonyls and bioinorganic chemistry. Three lecture hours per week, seven three-hour laboratories. One term. Four credits. Prerequisites: SC/CHEM 2010 3.00; SC/CHEM 2020 6.00; SC/CHEM 2030 4.00.

SC/CHEM 3031 4.00 Physical Inorganic Chemistry. An introduction to physical and theoretical methods in inorganic chemistry. Topics are selected from the following: atomic structure and spectra, molecular orbital and ligand field theory, bonding, electronic spectroscopy, magnetism of metal complexes, photochemistry, electrochemistry, solid state chemistry, metal-metal bonding. Three lecture hours per week, eight three-hour laboratories. One term. Four credits. Prerequisite: SC/CHEM 3030 4.00.

SC/CHEM 3040 3.00 Computational Chemistry. An introduction to numerical methods for modelling reaction kinetics, thermodymanics and molecular spectra and structure. Operating system commands, symbolic algebra and molecular modelling software are used for computing exercises. Molecular orbitals, the Born-Oppenheimer approximation, and potential energy surfaces are discussed. Two lecture hours, three computer laboratory hours. One term. Three credits. Prerequisites or corequisites: SC/CHEM 2010 3.00; AK/AS/SC/COSC 1540 3.00.

SC/CHEM 3050 3.00 Advanced Biochemistry. A detailed discussion of enzyme structure and function. The chemistry and metabolism of biological molecules. Metabolic regulation at the level of enzyme activity. Knowledge of general concepts of metabolism and of basic aspects of enzyme structure and function is assumed. Three lecture hours. One term. Three credits. Prerequisites: SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00; SC/CHEM 2020 6.00. Prerequisite or corequisite: Three additional chemistry credits at the 2000 or 3000 level (e.g. SC/CHEM 2011 3.00) are strongly recommended.

Cross-listed to: SC/BCHM 3010 3.00 and SC/BIOL 3010 3.00 and SC/CHEM 3050 3.00

SC/CHEM 3051 3.00 Macromolecules of Biochemical Interest. A discussion of the structures and functions of naturally occurring macromolecules, including nucleic acids, proteins, polysaccharides and related macromolecular conjugates. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00. Prerequisite or corequisite: SC/CHEM 3020 4.00.

Cross-listed to: SC/BCHM 3051 3.00 and SC/BIOL 3051 3.00 and SC/CHEM 3051 3.00

SC/CHEM 3060 3.00 Introductory Atmospheric Chemistry. An introductory course linking chemistry and atmospheric science. Topics include atmospheric evolution; biogeochemical cycles; sources, transformations and sinks of atmospheric species; human impacts such as acid rain, photochemical smog and depletion of the ozone layer. Three lecture hours. One term. Three credits. Prerequisites: Both SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00; one of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00, AS/SC/MATH 1505 6.00. Degree credit exclusions: SC/CHEM 3160 3.00.

Cross-listed to: SC/CHEM 3060 3.00 and SC/EATS 3130 3.00

SC/CHEM 3070 3.00 Industrial Chemistry and the Environment. The chemistry of industrial processes is studied together with the impact of their products on the environment. Topics include petroleum refining, the petrochemical industry, polymers, pesticides, dyes and pharmaceuticals. Molecular aspects of toxicology and pharmacology are discussed. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00.

SC/CHEM 3071 3.00 Pharmaceutical Discovery. A practical look into the pharmaceutical industry, providing an overview of the drug discovery process. Topics include choosing disease states to study, pharmacological assays, rational drug design, synthetic and analytical chemistry, toxicology, drug metabolism and clinical trials. Three hours. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00.

Cross-listed to: SC/BCHM 3071 3.00 and SC/BIOL 3071 3.00 and SC/CHEM 3071 3.00

SC/CHEM 3080 4.00 Instrumental Methods of Chemical Analysis. The theory and application of a variety of modern instrumental methods. Topics include basic electronics, signal processing, electroanalytical methods, optical spectroscopy, atomic absorption and emission spectroscopy, chromatography and mass spectrometry. This course covers applications relevant to modern chemical analysis. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/CHEM 2080 4.00; SC/PHYS 1010 6.00 or SC/PHYS 1410 6.00. Degree credit exclusion: SC/CHEM 3110 4.00.

SC/CHEM 3090 3.00 Introduction to Polymer Chemistry. Classification and structure of polymers: molecular weights, synthesis, kinetics, statistics, characterization techniques and thermodynamics. Polymers in the solid state, crystallinity and advanced materials. Three lecture hours per week. One term. Three credits. Prerequisite: SC/CHEM 2020 6.00.

SC/CHEM 4000 4.00 Research Project. An original laboratory or theoretical project, supported by studies of the relevant scientific literature. Detailed guidelines are given in the departmental handbook. Six tutorial hours. One term or equivalent. Four credits. Prerequisites: Only open to Honours students in the final year of study, with permission of the department.

SC/CHEM 4000 8.00 Research Project. An original laboratory or theoretical project, supported by studies of the relevant scientific literature. Detailed guidelines are given in the departmental handbook. 12 tutorial hours. Two terms or equivalent. Eight credits. Prerequisites: Only open to Honours students in the final year of study, with permission of the department.

SC/CHEM 4010 3.00 Introductory Quantum Chemistry. The theory of electronic structure and bonding in molecules in terms of Schroedinger wave mechanics; Pauli exclusion principle; Slater determinants; Born-Oppenheimer separation; variation principle; methods of constructing electronic wave functions for molecules; Hartree-Fock and configuration interaction methods. Three lecture hours. First term. Three credits. Prerequisites: AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00.

SC/CHEM 4021 3.00 Synthetic Organic Chemistry. A course concentrating on strategies of synthesizing complex molecules, with emphasis on carbon-carbon bond-forming reactions, blocking groups, regioselectivity and stereochemical methods. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 4.00.

SC/CHEM 4023 3.00 Physical Organic Chemistry. Advanced topics, including methods for determining mechanisms, the study of reactive intermediates (carbocations, carbanions, carbenes, carbon radicals), acid catalysis and other aspects of mechanistic organic chemistry. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3021 4.00.

SC/CHEM 4025 3.00 Organometallics. Organic synthesis using main group metal-based reagents and transition metal-based catalysts, by surveying recent literature. One term. Three credits. Prerequisites: SC/CHEM 3021 4.00, SC/CHEM 3030 8.00 or SC/CHEM 3031 4.00.

SC/CHEM 4030 3.00 Instrumental Methods in Inorganic Chemistry. Theory and applications of instrumental methods for investigating the structure and properties of inorganic and organometallic compounds. Magnetic resonance techniques (NQR and ESR), ultraviolet-visible, infrared, Raman and resonance Raman spectroscopy are introduced and discussed. Three lecture hours. First term. Three credits. Prerequisite: SC/CHEM 3031 4.00.

SC/CHEM 4031 3.00 Advanced Inorganic Chemistry. (formerly SC/CHEM 4130 3.00 - before Summer 1998) Advanced topics in inorganic chemistry, including ligand field theory, magnetism in dilute and coupled spin systems, NMR of paramagnetic molecules, electron spin resonance spectroscopy, space groups and crystal structure determination, photoelectron and x-ray spectra of inorganic molecules and ions. Three lecture hours. Second term. Three credits. Prerequisite: SC/CHEM 3031 4.00. Degree credit exclusion: SC/CHEM 4130 3.00.

SC/CHEM 4050 3.00 Bioanalytical Chemistry. This course describes modern methods of bioanalytical chemistry in their application to the analysis of biological polymers: proteins, nucleic acids, carbohydrates and lipids. Analytical aspects of genomics and proteomics are considered. Three lecture hours per week. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/BIOL 2020 4.00 or SC/BCHM 2020 4.00 and SC/BIOL 2021 4.00 or SC/BCHM 2021 4.00.

Cross-listed to: SC/BCHM 4050 3.00 and SC/BIOL 4051 3.00 and SC/CHEM 4050 3.00

SC/CHEM 4051 3.00 Biological Chemistry. Bio-organic and bio-inorganic topics: active sites in enzymes and metalloproteins, coenzymes; abiotic models; aromatic natural products, terpenoids and some alkaloid classes. Three lecture hours. One term. Three credits. Prerequisites: SC/CHEM 2020 6.00; SC/CHEM 2030 4.00 is strongly recommended.

Cross-listed to: SC/BCHM 4051 3.00 and SC/CHEM 4051 3.00

SC/CHEM 4060 4.00 Chemistry of the Natural and Polluted Atmosphere. A detailed study of the chemistry of atmospheric trace gases, including stratospheric ozone, tropospheric oxidants, photochemical smog and acid deposition. Computer simulation of chemical reaction mechanisms is used throughout the course. Three lecture hours, two computer laboratory hours. One term. Four credits. Prerequisites: SC/CHEM 3011 4.00; SC/CHEM 3060 3.00 or SC/EATS 3130 3.00.

SC/CHEM 4061 4.00 Transport and Chemistry of Atmospheric Trace Gases. A study of the processes that affect the composition of the atmosphere and the methods used to include these in numerical models. Included are sources, transport, deposition, photochemistry, biogeochemical cycles, one-dimensional computer models and analysis of atmospheric data sets. Three lecture hours, two computer laboratory hours. One term. Four credits. Prerequisites: SC/CHEM 3060 3.00 or SC/EATS 3130 3.00; AK/AS/SC/COSC 1540 3.00; AK/AS/SC/MATH 2270 3.00. Degree credit exclusion: SC/EATS 4170 4.00.

SC/CHEM 4080 3.00 Advanced Analytical Separation Methods. (formerly SC/CHEM 4200D 3.00 - before 2001-2002). Advanced theory and practice of high-resolution separation techniques, especially high-resolution chromatography and capillary electrophoresis, with emphasis on the practical application of advanced theories and the problem of optimizing separation procedures. Analytical procedures as integrated methods. Possibilities and limitations of interfacing sample injection, separation method and detection. Three lecture hours. One term. Three credits. Prerequisite: SC/CHEM 3080 4.00. Degree credit exclusion: SC/CHEM 4200D 3.00.

SC/CHEM 4090 3.00 Topics in Materials Sciences. Exploring the chemistry behind novel materials relevant to electronics, alternative energy sources, life sciences and polymer sciences. One term. Three credits. Prerequisites: SC/CHEM 3010 4.00, SC/CHEM 3030 8.00 or SC/CHEM 3031 4.00.

SC/CHEM 4091 3.00 Frontiers in Electrochemistry. This course will present selected aspects surface electrochemistry, electroncatalysis and electroanalysis. It will introduce new methods and instrumentation employed to understand electrochemical processes at the molecular and atomic levels. This will include scanning probe methods (STM and AFM), IR spectroscopy and x-ray diffraction. Three lecture hours that will include demonstrations when appropriate (no lab required). One term. Three credits. Prerequisites or corequisites: SC/CHEM 3030 4.00; SC/CHEM 3080 4.00 or SC/CHEM 3120/3110 4.00. SC/CHEM 3011 4.00 and SC/CHEM 3031 4.00 are strongly recommended.

SC/CHEM 4092 3.00 X-ray Crystallography. Principles, practical details and computational methods of X-ray crystallographic structure determination. Students carry out an original structure determination from raw reflection data. One term. Three credits. Prerequisites: SC/CHEM 3030 8.00 or SC/CHEM 3031 4.00.

SC/CHEM 4300 3.00 Selected Topics in Chemistry. (formerly SC/CHEM 4060 3.00 - before Summer 1998) By special arrangement through the Chair of the chemistry department, a student may enrol in a reading course under the direction of a member of the chemistry faculty to study in a special area of chemistry. Regular meetings. One term. Three credits.

SC/CHEM 4300 6.00 Selected Topics in Chemistry. (formerly SC/CHEM 4060 6.00 - before Summer 1998) By special arrangement through the Chair of the chemistry department, a student may enrol in a reading course under the direction of a member of the chemistry faculty to study in a special area of chemistry. Regular meetings. Two terms. Six credits.

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Chinese – Department of Languages, Literatures and Linguistics, Arts

Note: For general regulations and enrolment information please see Languages, Literatures and Linguistics in the Courses of Instruction section of this Calendar.

AS/CH 1000 6.00 Elementary Modern Standard Chinese. Introductory course for English speakers who have no knowledge of Chinese. Students are expected to learn to carry on simple everyday conversations in the national language and to read and write approximately 500 Chinese characters. Pattern drills are used primarily in addition to grammatical analysis. Note: Students whose native dialect is Cantonese are directed to AS/CH 3010 6.00.

Language of Instruction: Chinese

AS/CH 2000 6.00 Intermediate Modern Standard Chinese. Continues the work of AS/CH 1000 6.00 so that students can hold discussions on contemporary China and can read and write approximately 1100 characters. Prerequisite: AS/CH 1000 6.00.

Language of Instruction: Chinese

AS/CH 2010 6.00 Chinese for Beginners with Background. Presents three aspects of Modern Standard Chinese - pronunciation, grammar, writing system - lectures, drills, audio tapes and interactive computer programs. Pinyin (Chinese romanization) is used in teaching. Students learn approximately 1,000 characters by the end of the course. Prerequisite: Permission of the department.

Language of Instruction: Chinese

AS/CH 2700 6.00 Introduction to Chinese Literature. Surveys the many genres of Chinese literature from its origins to the present to show the evolution of the literary tradition and its interplay with history, philosophy and politics. Focus is on major works and how to discover their meaning.

Language of Instruction: Chinese/English

AS/CH 2730 6.00 Modern Chinese Fiction. A brief survey of popular traditional narrative and an examination of 20th-century stories and novels from the end of the Qing dynasty through the Republican era. This includes the beginning and the end of bourgeois fiction in China as well as the continuation of more popular traditions. Readings, discussions and term work are in English.

AS/CH 3000 6.00 Advanced Modern Standard Chinese. Reading, writing, discussion, use of dictionaries and translation practice. The student should, with the aid of dictionaries, be able to read and translate newspaper articles from the People's Republic, modern fiction and non-specialist articles. Prerequisite: AS/CH 2000 6.00 or AS/CH 2010 6.00.

Language of Instruction: Chinese

AS/CH 3010 6.00 Modern Standard Chinese for Speakers of Cantonese or Other Dialects. Training in the standard pronunciation, phonetic system and simplified script, and discussions of the debate on language reform and style as embodied in the classics of modern vernacular literature. Prerequisite: Permission of the department; not open to speakers of Mandarin.

Language of Instruction: Chinese

AS/CH 3600 6.00 Lu Xun: Representative Works. This course deals with the creative works of Lu Xun, China's leading 20th-century writer. It focuses on textual analysis of his short stories, prose poems and selected satirical essays. Modern Standard Chinese (Mandarin) is used in class. Prerequisites: AS/CH 3010 6.00 or AS/CH 3000 6.00 plus any of the 2000-level Chinese literature courses.

Language of Instruction: Chinese

AS/CH 3710 6.00 Women Writers in Modern China (in translation). A study of the fiction of the major women writers from the literary revolution of the early 1920s to the present, the development of themes, forms and styles seen in the context of modern Chinese literature and against the background of China's patriarchal tradition. Prerequisite: Any 2000-level Chinese literature course, or AS/HUMA 2930 9.00 or AS/SOSC 2180 9.00 or AK/AS/GL/WMST 2510 9.00.

Language of Instruction: Chinese/English

AS/CH 3790 6.00 Contemporary Chinese Culture Through Literary Texts and Film. Primarily concentrating on representative new wave written works and films, this course explores the relationship between ideology and art in Post-Modern China and stresses new literary/cinematic sensibilities in contemporary Chinese culture.

AS/CH 4700 6.00 Tales of the Outside(rs). This course examines the range of imaginative Chinese literature about the outside(rs) - foreign lands and foreign peoples (including the overseas Chinese communities).

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Classical Studies – Arts

Program Office:
  210 Vanier College, 416-736-5910
Web Address:
  http://www.yorku.ca/classics/
Program Coordinator:
  J. Edmondson, History/Humanities
Affiliated Faculty:
  R. Arthur, Humanities; L. Broadhurst, Humanities; M. Clark, Humanities; N. Denzey, Humanities; J. Edmondson, History/Humanities; T. Gallant, History; P. Gray, Atkinson/Humanities; M. Herren, Atkinson/Humanities; S. Mason, Humanities; G. Metraux, Fine Arts/Visual Arts; G. Naddaf, Philosophy; J. Rives, Humanities; P. Swarney, History/Humanities; J. Trevett, History

The Classical Studies Program offers a broad range of exciting courses in Greek and Roman history, Greek and Roman literature and culture, Greek and Roman art and architecture, Greek philosophy, and in Greek and Latin language. Students normally enter the program by taking AS/HUMA 1100 9.00 or AS/HUMA 1105 9.00 and/or AS/HIST 2100 6.00 and/or AS/LA 1000 6.00 or AS/GK 1000 6.00. (For purposes of meeting program requirements, all foundations courses will count as six credits towards the major or minor.) Students in classical studies are strongly advised to make Greek or Latin a component of their degree program, especially if they are even mildly contemplating graduate studies in classics or ancient history.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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Classics – Arts

Program Office:
  210 Vanier College, 416-736-5910
Web Address:
  http://www.yorku.ca/classics/
Program Coordinator:
  J. Edmondson, History/Humanities
Affiliated Faculty:
  R. Arthur, Humanities; L. Broadhurst, Humanities; M. Clark, Humanities; N. Denzey, Humanities; J. Edmondson, History/Humanities; T. Gallant, History; P. Gray, Atkinson/Humanities; M. Herren, Atkinson/Humanities; S. Mason, Humanities; G. Metraux, Fine Arts/Visual Arts; G. Naddaf, Philosophy; J. Rives, Humanities; P. Swarney, History/Humanities; J. Trevett, History

The Classics Program offers a broad range of exciting courses in Greek and Roman history, Greek and Roman literature and culture, Greek and Roman art and architecture, Greek philosophy, and in Greek and Latin language. The degree program in classics focuses on Greek and Latin language and literature. Students normally enter the program by enrolling in classical studies are strongly advised to make Greek or Latin a AS/GK 1000 6.00 and/or AS/LA 1000 6.00, which are offered by the Depatment of Languages, Literatures and Linguistics.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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Cognitive Science – Arts

Program Office:
  S428 Ross Building, 416-736-5113
Web Address:
  http://www.yorku.ca/cogs/
Program Coordinator:
  E. Thompson, Philosophy
Affiliated Faculty:
  S. Adler, Psychology; R. Allison, Computer Science; K. Andrews, Philosophy; M. Baljko, Computer Science; E. Bialystok, Psychology; M. Desrocher, Psychology; J. Elder, Psychology; R. Fink, Languages, Literatures and Linguistics; C. Green, Psychology; J. Hattiangadi, Philosophy; H. Jackman, Philosophy; M. Jenkin, Computer Science; D. Johnson, Philosophy; J.M. Johnson, Psychology; D. Jopling, Philosophy; Y. Lesperance, Computer Science; S. MacDonald, Atkinson/Psychology; J. Pelham, Philosophy; J. Rich, Psychology; P. Roosen-Runge, Computer Science; A. Russon, Glendon/Psychology; S. Shanker, Atkinson/Philosophy; W. Stuerzlinger, Computer Science; E. Thompson, Philosophy

Cognitive science is the scientific study of the mind and its processes. What is especially exciting about cognitive science is its nature of interdisciplinary cooperation involving psychologists, philosophers, computer scientists, neuroscientists, anthropologists, biologists and linguists. Though researchers from each of these fields have long been studying the nature of thought, emotion, perception, memory, language and other aspects of cognition, cognitive science allows them to take advantage of the strengths and research in other disciplines. Different methodologies, intellectual histories and disciplinary divisions often isolate those with similar goals, and cognitive science aims to bring researchers back together. By approaching questions from a variety of perspectives, the cognitive scientist has a greater chance of finding answers to questions about cognition.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

AS/COGS 3750 3.00 Foundations of Artificial Intelligence. This course examines artificial intelligence (AI) as a framework for modeling and analyzing fundamental ideas about the nature of intelligence and cognition in general. Topics include the exploration of computer models for concepts such as remembering, learning, inference and affect. Prerequisite: At least six credits in philosophy, or permission of the instructor. Note: This course is not open to any student who has successfully completed or who is taking AK/AS/SC/COSC 3402 3.00, AK/

AS/SC/COSC 4401 3.00, or AK/AS/SC/COSC 4402 3.00. Note: Internet access is required for this course.

Cross-listed to: AS/COGS 3750 3.00 and AS/PHIL 3750 3.00

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Colleges - Refer to Individual College

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Communication Studies – Arts

Program Office:
  3063 Technology Enhanced Learning Building, 416-736-5057
Web Address:
  http://www.yorku.ca/artscomn/
Program Coordinator:
  K. Dowler, Social Science
Affiliated Faculty:
  R. Bowman, Fine Arts/Music; R. Coombe, Social Science; M-L. Craven, Social Science; B. Crow, Social Science; K. Dowler, Social Science, J. Durlak, Social Science; S. Feldman, FIne Arts/Film & Video; F. Fletcher, Environmental Studies/Political Science; D. Hogarth, Social Science; D. Kehoe, Social Science; P. Roosen-Runge, Computer Science; R. Schlesinger, Social Science; B. Seaton, Social Science; A. Siegel, Social Science; D. Skinner, Social Science

Communication studies is offered as an Honours Double Major Interdisciplinary BA program and as a Specialized Honours BA program. The Specialized Honours BA program is a delayed-entry program; admission to the program requires that students achieve a 6.0 (B) average in AS/SOSC 1310 9.00 and at least six other communication studies credits and a cumulative grade point average of at least 5.0 (C+).

The communication studies curriculum consists of four sub-fields that are considered the main themes of the program: interpersonal and organizational communication; critical technology studies; politics and policy; and media, culture and society. The emphasis of the program is academic rather than technical; the aim of the program is to produce graduates who have acquired skills in communications analysis and a synthesis of knowledge in the increasingly complex field of communications.

For specific program requirements and a list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

The program also offers a Specialized Honours BA in information technology and communication studies. For details, please consult the Faculty of Arts Programs of Study section of this Calendar.

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Computer Science – Arts, Atkinson, Pure and Applied Science

Department Office:
  1003 Computer Science and Engineering Building, 416-736-5053
Undergraduate/Graduate Office:
  1003 Computer Science and Engineering Building, 416-736-5334
Chair of the Department:
  P.H. Cribb
Professors:
  E. Arjomandi, P.W. Dymond, M.R.M. Jenkin, G. Tourlakis, J. Tsotsos
Professor Emeritus:
  J.W.H. Liu
Associate Professors:
  M. Aboelaze, R. Allison, J. Amanatides, A. Asif, J. Edmonds, J. Gryz, R. Hornsey, Y. Lesperance, S. MacKenzie, M. Mandelbaum, A. Mirzaian, J. Ostroff, M. Spetsakis, Z. Stachniak, W. Stuerzlinger, A. Toptsis, F. van Breugel, R.M. Wharton, R.P. Wildes, J. Xu
Associate Professors Emeriti:
  J. Mason, J.M. McNamee, P.H. Roosen-Runge
Assistant Professors:
  A. An, S. Datta, P. Godfrey, G.J. Gotshalks, H. Jiang, U. Nguyen, R. Paige, E. Ruppert, W. Stuerzlinger, V. Tzerpos, N. Vlajic, A. Wallis

Senior Lecturers:
  P.H. Cribb, H. Roumani
Lecturer:
  M. Baljko

Computer science is the study of processes involving the storage, transmission and transformation of information in the context of modern electronic technology. Both theoretical and applied areas of computer science are represented in the courses offered by the department. The introductory courses (two for majors, three for non-majors) are concerned largely with programming as the primary tool used for understanding and controlling computation. The higher-level courses deal with theoretical concerns, the practical design of hardware and software, and a variety of application areas.

For specific requirements of programs offered by this department, see the Faculty of Pure and Applied Science Programs of Study section of this Calendar for BSc and BSc Honours programs and the Faculty of Arts Programs of Study section of this Calendar for BA and BA Honours programs. For degree programs offered through the Atkinson Faculty of Liberal and Professional Studies, see the Calendar of that Faculty.

Courses in Computer Science

A supplemental calendar detailing courses and topics to be offered in the next year is available from the department office in March.

For the purpose of satisfying departmental degree requirements, the number of computer science credits taken outside the Department of Computer Science and Engineering may not exceed six credits in core areas (here defined to be 1000- and 2000-level computer science courses, 3000-level computer science courses satisfying the breadth requirement and, for Specialized Honours students, any required 3000- and 4000-level computer science courses) and 12 credits in total.

Course numbering. Computer science courses with 5 as the second digit of the course number may be used to satisfy Faculty degree requirements but do not count as computer science major credits. 3000- and 4000-level computer science courses are divided by number into four areas as follows: theory and numerical computation (second digit is 1), systems (second digit is 2), software development (second digit is 3) and applications (second digit is 4).

Courses in computer science have three class hours a week for one term (three credits - course numbers end in 3.00), unless otherwise indicated.

The Department of Computer Science and Engineering will not permit any student to take more than 12 computer science credits per term in the fall and winter terms and six computer science credits in the summer term. Students who work full-time are strongly advised to take no more than six credits in any term.

For prerequisite purposes, AS/SC/MATH 1000 3.00 or AS/SC/MATH 1013 3.00 may be substituted in lieu of AK/AS/SC/MATH 1300 3.00; AS/SC/MATH 1010 3.00 or AS/SC/MATH 1014 3.00 in lieu of AK/AS/SC/MATH 1310 3.00; AK/AS/SC/MATH 1021 3.00 or AS/SC/MATH 2021 3.00 or AK/AS/SC/MATH 2221 3.00 in lieu of AS/SC/MATH 1025 3.00.

General Prerequisites

All 2000-level computer science courses require the following general prerequisites:

- AK/AS/SC/COSC 1030 3.00 with a grade of at least C+;
- AK/AS/SC/MATH 1019 3.00;

All 3000-level computer science courses require the following general prerequisites:

- AK/AS/SC/COSC 2011 3.00;
- one of AK/AS/SC/COSC 2001 3.00 or AK/AS/SC/COSC 2021 4.00 or AK/AS/SC/COSC 2031 3.00;
- a cumulative grade point average of 4.5 or better over all completed computer science courses;
- AK/AS/SC/MATH 1300 3.00 and AK/AS/SC/MATH 1310 3.00;
- at least one of AS/SC/MATH 1025 3.00, AK/AS/SC/MATH 1090 3.00.

All 4000-level computer science courses require the following general prerequisites:

- AK/AS/SC/COSC 2001 3.00, AK/AS/SC/COSC 2011 3.00, AK/AS/SC/COSC 2021 4.00, AK/AS/SC/COSC 2031 3.00;
- at least 12 credits at the 3000-level in computer science courses;
- a cumulative grade point average of 4.5 or better over all completed computer science courses;
- AK/AS/SC/MATH 1090 3.00.

Note 1: All computer science Honours BA programs, except the Honours Minor BA program, require the successful completion of at least 30 credits which are neither computer science nor mathematics courses.

Note 2: To satisfy computer science degree requirements, AS/MATH 1000 3.00 or AS/MATH 1013 3.00 may be taken instead of AS/MATH 1300 3.00; AS/MATH 1010 3.00 or AS/MATH 1014 3.00 may be taken instead of AS/MATH 1310 3.00; AS/MATH 1021 3.00 or AS/MATH 2221 3.00 may be taken instead of AS/MATH 1025 3.00.

AK/AS/SC/COSC 1019 3.00 Discrete Mathematics for Computer Science. Introduction to abstaction. Use and development of precise formulations of mathematical ideas. Informal introduction to logic; introduction to naïve set theory; induction; relations and functions; big O-notation; recursive definitions, recurrence relations and their solutions; graphs and trees. Three lecture hours per week. Plus drop-in optional problem sessions as well as instructor office hours, as these are announced in each term. Prerequisites: AK/AS/SC/MATH 1190 3.00, or both of 12U advanced functions and introductory calculus and 12U geometry and discrete mathematics. Degree credit exclusions: AK/AS/SC/MATH 2320 3.00.

Cross-listed to: AK/COSC 1019 3.00 and AS/COSC 1019 3.00 and SC/COSC 1019 3.00 and AK/MATH 1019 3.00 and AS/MATH 1019 3.00 and SC/MATH 1019 3.00

AK/AS/SC/COSC 1020 3.00 Introduction to Computer Science I. Conceptual foundations of object-oriented programming, including data types, control structures, class library usage, encapsulation, inheritance and other abstractions; the software development process, specification and implementation, with emphasis on software engineering principles. Three lecture hours and weekly laboratory sessions. Three credits. Prerequisites: One of (1) - (4) below must be met: (1) (New high school curriculum): Advanced functions and introductory calculus, and geometry and discrete mathematics with minimum mathematics average of 75 per cent on the two courses, and no mathematics grade below 65 per cent. (2) (Old high school curriculum): OAC calculus and one other OAC in mathematics (normally finite mathematics or algebra and geometry) with an average grade of 75 per cent in all OAC mathematics and no grade less than 65 per cent. (3) Completion of 6.00 credits from York University mathematics courses (not including AK/MATH 1710 6.00 or courses with second digit 5) with a grade point average of 5.0 (C+) or better over these credits; (4) Completion of AK/MATH 1710 6.00, or 6.00 credits from York University mathematics courses whose second digit is 5, with an average grade point not below 7.0 (B+). Degree credit exclusions: AK/COSC 2200B 3.00, AK/COSC 2410 6.00, AK/COSC 2411 3.00, AK/AS/ITEC 1020 3.00, AK/AS/ITEC 1620 3.00.

Cross-listed to: AK/COSC 1020 3.00 and AS/COSC 1020 3.00 and SC/COSC 1020 3.00

AK/AS/SC/COSC 1030 3.00 Introduction to Computer Science II. This course builds on AK/AS/SC/COSC 1020 3.00 covering class implementation and system design in object-oriented programming, including composition, inheritance, polymorphism and exception handling. Other topics include recursion, searching and sorting and introductory data structures. Prerequisite: AK/AS/SC/COSC 1020 3.00 or AK/COSC 2411 3.00 or AK/AS/ITEC 1020 3.00. Degree credit exclusions: AK/COSC 2410 6.00, AK/COSC 2412 3.00, AK/AS/ITEC 1030 3.00, AK/AS/ITEC 2620 3.00.

Cross-listed to: AK/COSC 1030 3.00 and AS/COSC 1030 3.00 and SC/COSC 1030 3.00

AK/AS/SC/COSC 1520 3.00 Introduction to Computer Use I. An introduction to the use of computers focusing on concepts of computer technology and organization (hardware and software) and the use of applications such as spreadsheets, database and information retrieval tools for problem solving. The course requires extensive laboratory work. This course is designed for students who are not computer science majors.

Students who plan to major in computer science are advised to take AK/AS/SC/COSC 1020 3.00. Degree credit exclusions: AK/COSC 1200 3.00, AK/COSC 1210 3.00. This course is not open to any student who has passed or is taking AK/AS/SC/COSC 1020 3.00 or AK/COSC 2200B 3.00 or AK/COSC 2410 6.00 or AK/COSC 2411 3.00 or AK/AS/ITEC 1020 3.00.

Cross-listed to: AK/COSC 1520 3.00 and AS/COSC 1520 3.00 and SC/COSC 1520 3.00

AK/AS/SC/COSC 1530 3.00 Introduction to Computer Use II. Concepts of computer systems and technology - e.g. software engineering, algorithms, programming languages, theory of computation. Practical work focuses on problem solving using a high-level programming language. The course requires extensive laboratory work. This course is designed for students who are not computer science majors, but may be used as preparation by those who wish to major in computer science but lack programming background. Students who plan to major in computer science must also take AK/AS/SC/COSC 1020 3.00 and AK/AS/SC/COSC 1030 3.00. Degree credit exclusion: AK/AS/SC/COSC 1540 3.00. This course is not open to any student who has passed or is taking AK/AS/SC/COSC 1020 3.00 or AK/COSC 2200B 3.00 or AK/COSC 2410 6.00 or AK/COSC 2411 3.00 or AK/AS/ITEC 1020 3.00.

Cross-listed to: AK/COSC 1530 3.00 and AS/COSC 1530 3.00 and SC/COSC 1530 3.00

AK/AS/SC/COSC 1540 3.00 Computer Use for the Natural Sciences. Introduction to problem solving using computers - top down and modular design; implementation in a procedural programming language - control structures, data structures, subprograms; application to simple numerical methods, modelling and simulation in the sciences; use of library subprograms. Degree credit exclusion: AK/AS/SC/COSC 1530 3.00. This course is not open to any student who has passed or is taking AK/AS/SC/COSC 1020 3.00 or AK/COSC 2200B 3.00 or AK/COSC 2410 6.00 or AK/COSC 2411 3.00 or AK/AS/ITEC 1020 3.00.

Cross-listed to: AK/COSC 1540 3.00 and AS/COSC 1540 3.00 and SC/COSC 1540 3.00

2000-Level Courses

General Prerequisites for Arts, Atkinson and Science students. All 2000-level computer science courses require the following general prerequisites:

- AK/AS/SC/COSC 1030 3.00 with a grade of at least C+;
- AK/AS/SC/MATH 1019 3.00.

AK/AS/SC/COSC 2001 3.00 Introduction to the Theory of Computation. Introduction to the theory of computing, including automata theory, formal languages and Turing machines; theoretical models and their applications in various fields of computer science. The emphasis is on practical applications of the theory and concepts rather than formal rigour. Prerequisites: General prerequisites. Degree credit exclusion: AK/COSC 3431 3.00.

Cross-listed to: AK/COSC 2001 3.00 and AS/COSC 2001 3.00 and SC/COSC 2001 3.00

AK/AS/SC/COSC 2011 3.00 Fundamentals of Data Structures. A study of fundamental data structures and their use in the efficient implementation of algorithms. Topics include abstract data types, lists, stacks, queues, trees and graphs. Prerequisites: General prerequisites. Degree credit exclusions: AK/COSC 3501 3.00, AK/AS/ITEC 2011 3.00.

Cross-listed to: AK/COSC 2011 3.00 and AS/COSC 2011 3.00 and SC/COSC 2011 3.00

AK/AS/SC/COSC 2021 4.00 Computer Organization. Introduction to computer organization and instruction set architecture, covering assembly language, machine language and encoding, addressing modes, single/multicycle datapaths (including functional units and controls), pipelining, memory segments and memory hierarchy. Three lectures hours and three laboratory hours per week. Four credits. Prerequisites: General prerequisites. Degree credit exclusions: AK/COSC 3411 3.00, AK/COSC 3412 3.00, AK/COSC 3460 3.00, AK/AS/ITEC 2021 3.00.

Cross-listed to: AK/COSC 2021 4.00 and AS/COSC 2021 4.00 and SC/COSC 2021 4.00

AK/AS/SC/COSC 2031 3.00 Software Tools. Tools commonly used in the software development process: the C language; shell programming; filters and pipes; version control systems and "make"; debugging and testing. Prerequisites: General prerequisites.

Cross-listed to: AK/COSC 2031 3.00 and AS/COSC 2031 3.00 and SC/COSC 2031 3.00

SC/COSC 2501 1.00 Fortran and Scientific Computing. Covers computer-base problem solving in a variety of scientific and engineering settings. Introduces the FORTRAN programming language and its interface with scientific libraries. Applications are drawn mainly from scientific areas such as numerical methods, processing experimental data, simulation and data visualization. Prerequisite: AK/AS/SC/COSC 1020 3.00 or AK/AS/SC/COSC 1530 3.00. Degree credit exclusion: AK/AS/SC/COSC 1540 3.00.

3000-Level Courses

General Prerequisites for Arts, Atkinson and Science students. Most 3000-level computer science courses require the following general prerequisites, in addition to or including any specifically stated in the course outlines below:

- AK/AS/SC/COSC 2011 3.00;
- at least one of AK/AS/SC/COSC 2001 3.00, AK/AS/SC/COSC 2021 4.00, AK/AS/SC/COSC 2031 3.00;
- a cumulative grade point average of 4.5 or better over all completed computer science courses;
- AK/AS/SC/MATH 1300 3.00 and AK/AS/SC/MATH 1310 3.00;
- at least one of AS/SC/MATH 1025 3.00, AK/AS/SC/MATH 1090 3.00.

SC/COSC 3001 1.00 Organization and Management Seminar in Space and Communication Sciences. A seminar course taught by guest speakers from industry, government and the University. Content changes from year to year, but includes such topics as professional ethics, communications regulations, space law, space science policy, project management, privacy and security issues in computing. One lecture hour in alternate weeks. Two terms. Prerequisite: Eligibility to proceed in the Specialized Honours stream in Space and Communication Sciences beyond the 2000-level requirements, or permission of the course director. Degree credit exclusion: AS/SC/COSC 3002 1.00.

Cross-listed to: SC/COSC 3001 1.00 and SC/EATS 3001 1.00 and SC/PHYS 3001 1.00

AS/SC/COSC 3002 1.00 Organization and Management Seminar. A seminar course taught by guest speakers from industry, government and the University. Content changes from year to year, but includes such topics as professional ethics, communications regulations, project management, privacy and security, legal issues in computing. One lecture hour in alternate weeks. Two terms. One credit. Prerequisites: General prerequisites. Degree credit exclusions: SC/COSC 3001 1.00, SC/EATS 3001 1.00, SC/PHYS 3001 1.00.

Cross-listed to: AS/COSC 3002 1.00 and SC/COSC 3002 1.00

AK/AS/SC/COSC 3101 3.00 Design and Analysis of Algorithms. Review of fundamental data structures. Analysis of algorithms: time and space complexity. Algorithm design paradigms: divide-and-conquer, exploring graphs, greedy methods, local search, dynamic programming, probabilistic algorithms, computational geometry. NP-complete problems. Prerequisites: General prerequisites, including AK/AS/SC MATH 1090 3.00 and AK/AS/SC/COSC 2001 3.00. Degree credit exclusion: AK/COSC 3432 3.00.

Cross-listed to: AK/COSC 3101 3.00 and AS/COSC 3101 3.00 and SC/COSC 3101 3.00

AK/AS/SC/COSC 3121 3.00 Numerical Methods I. An introductory course in computational linear algebra. Topics include simple error analysis, linear systems of equations, non-linear equations, linear least squares and interpolation. Prerequisites: One of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00; one of AK/AS/SC/MATH 1021 3.00, AS/SC/MATH 1025 3.00, AK/AS/SC/MATH 2221 3.00;

one of AK/AS/SC/COSC 1540 3.00 or AK/AS/SC/COSC 2031 3.00. Degree credit exclusion: AK/COSC 3511 3.00.

Cross-listed to: AK/COSC 3121 3.00 and AS/COSC 3121 3.00 and SC/COSC 3121 3.00 and AS/MATH 3241 3.00 and SC/MATH 3241 3.00

AK/AS/SC/COSC 3122 3.00 Numerical Methods II. Algorithms and computer methods for solving problems of differentiation, integration, systems of non-linear equations and matrix eigenvalues. Prerequisite: AS/SC/MATH 3241 3.00 or AK/AS/SC/AS/COSC 3121 3.00.

Cross-listed to: AK/COSC 3122 3.00 and AS/COSC 3122 3.00 and SC/COSC 3122 3.00 and AS/MATH 3242 3.00 and SC/MATH 3242 3.00

AK/AS/SC/COSC 3201 4.00 Digital Logic Design. Theory and design of logic circuits used in digital systems. This is an intermediate level course that uses a Hardware Design Language to illustrate modern design techniques and is supplemented by hardware laboratory exercise (two hours per week). Prerequisites: General prerequisites, including AK/AS/SC/COSC 2021 3.00. SC/PHYS 3150 3.00 is strongly recommended.

Cross-listed to: AK/COSC 3201 4.00 and AS/COSC 3201 4.00 and SC/COSC 3201 4.00

AK/AS/SC/COSC 3211 3.00 Data Communication. This course covers, in some detail, the first three layers in the OSI computer communication model. It concentrates on the data link and network layers. Examples of local area networks and wide area networks are presented in detail. Prerequisites: General prerequisites; including AK/AS/SC/MATH 2090 3.00 and AK/AS/SC/COSC 2021 3.00 or AK/AS/ITEC 2021 3.00. Degree credit exclusions: AK/AS/SC/COSC 3213 3.00, AK/COSC 3409A 3.00.

Cross-listed to: AK/COSC 3211 3.00 and AS/COSC 3211 3.00 and SC/COSC 3211 3.00

AK/AS/SC/COSC 3213 3.00 Computer Networks I. This course introduces the basics of communications and networking. Topics include transmission media; fundamental limits; protocols and hierarchies; the OSI model; encoding of data as signals; error and flow control; medium access; routing; internetworking; transport services; high-level applications. Prerequisites: General prerequisites. Degree credit exclusions: AK/AS/SC/COSC 3211 3.00, AK/AS/SC/COSC 3212 3.00, AK/COSC 3409A 3.00, AK/AS/ITEC 3210 3.00.

Cross-listed to: AK/COSC 3213 3.00 and AS/COSC 3213 3.00 and SC/COSC 3213 3.00

AK/AS/SC/COSC 3215 4.00 Embedded Systems. Introduction to the design of embedded systems using both hardware and software. Topics include microcontrollers; their architecture, and programming; design and implementation of embedded systems using field programmable gate arrays. Lectures (three hours per week), laboratory (two hours per week); four credits. Prerequisites: General prerequisites; AK/AS/SC COSC 3201 4.00.

Cross-listed to: AK/COSC 3215 4.00 and AS/COSC 3215 4.00 and SC/COSC 3215 4.00

AK/AS/SC/COSC 3221 3.00 Operating System Fundamentals. (formerly AK/AS/SC/COSC 3321 3.00 - before Summer 2000) Principles of operating systems. Concurrent processes, CPU scheduling, deadlocks, memory management, file systems, protection and security and case studies. Prerequisites: General prerequisites, including AK/AS/SC/COSC 2021 3.00 or AK/AS/ITEC 2021 3.00; AK/AS/SC/COSC 2031 3.00. Degree credit exclusion: AK/AS/SC/COSC 3321 3.00.

Cross-listed to: AK/COSC 3221 3.00 and AS/COSC 3221 3.00 and SC/COSC 3221 3.00

AK/AS/SC/COSC 3301 3.00 Programming Language Fundamentals. Formal syntax: Backus-Naur form and extensions, syntax diagrams, grammars and parsing; elements of formal language theory; type theory and data structures of algorithmic languages; control structures and their composition. Subprograms: argument-parameter binding mechanisms. Prerequisites: General prerequisites, including AK/AS/SC/COSC 2001 3.00. Degree credit exclusion: AK/COSC 3420 6.00.

Cross-listed to: AK/COSC 3301 3.00 and AS/COSC 3301 3.00 and SC/COSC 3301 3.00

AK/AS/SC/COSC 3311 3.00 Software Design. A study of design methods and their use in the correct implementation, maintenance and evolution of software systems. Topics include design, implementation, testing, documentation needs and standards, support tools. Students design and implement components of a software system. Prerequisites: General prerequisites; including AK/AS/SC/MATH 1090 3.00 and AK/AS/SC/COSC 2001 3.00; AK/AS/SC/COSC 2031 3.00.

Cross-listed to: AK/COSC 3311 3.00 and AS/COSC 3311 3.00 and SC/COSC 3311 3.00

AK/AS/SC/COSC 3341 3.00 Introduction to Program Verification. (formerly AK/AS/SC/COSC 3111 3.00 - before Summer 2000) Application of logic to programs; weakest precondition; semantics of a simple programming language; correctness; development of correctness proofs from specifications; application to software design; performance bounds; transformation and synthesis. Prerequisites: General prerequisites, including AK/AS/SC/MATH 1090 3.00. Degree credit exclusion: AK/AS/SC/COSC 3111 3.00.

Cross-listed to: AK/COSC 3341 3.00 and AS/COSC 3341 3.00 and SC/COSC 3341 3.00

AK/AS/SC/COSC 3401 3.00 Functional and Logic Programming. Students, who are familiar with the procedural and object-oriented approaches offered by Java and C, learn about and contrast functional programming (using a language like Standard ML) and logic programming (using the language Prolog). Prerequisites: General prerequisites, including AK/AS/SC/COSC 2031 3.00; AK/AS/SC MATH 1090 3.00.

Cross-listed to: AK/COSC 3401 3.00 and AS/COSC 3401 3.00 and SC/COSC 3401 3.00

AK/AS/SC/COSC 3402 3.00 Introduction to Concepts of Artificial Intelligence. The concept of artificial intelligence. Interpretation of learning and reasoning as computational processes; simulation using logic and inference rules; analysis of the structure of visual scenes; game playing by computer; natural language analysis and synthesis; domain-independent planning and problem solving. Prerequisites: AK/AS/SC/COSC 3401 3.00; AK/AS/SC/MATH 1090 3.00. Degree credit exclusion: AK/COSC 3551 3.00.

Cross-listed to: AK/COSC 3402 3.00 and AS/COSC 3402 3.00 and SC/COSC 3402 3.00

AK/AS/SC/COSC 3408 3.00 Simulation of Discrete Systems. Introduction to simulating discrete-event systems and queuing problems. Use of probability distributions and random number generation. Model building, testing, use and validation. Application to case studies. Prerequisites: General prerequisites; AK/AS/SC/MATH 2030 3.00 or AK/AS/SC/MATH 2560 3.00. Degree credit exclusions: AK/COSC 3451 3.00, AS/SC/MATH 4930B 3.00.

Cross-listed to: AK/COSC 3408 3.00 and AS/COSC 3408 3.00 and SC/COSC 3408 3.00

AK/AS/SC/COSC 3421 3.00 Introduction to Database Systems. Concepts, approaches and techniques in database management systems (DBMS). Logical model of relational databases. An introduction to relational database design. Other topics such as query languages, crash recovery and concurrency control. Prerequisite: General prerequisites. Degree credit exclusions: AS/SC/COSC 3412 3.00, AK/COSC 3503 3.00, AK/AS/ITEC 3220 3.00, AK/AS/ITEC 3421 3.00.

Cross-listed to: AK/COSC 3421 3.00 and AS/COSC 3421 3.00 and SC/COSC 3421 3.00

AK/AS/SC/COSC 3451 3.00 Signals and Systems. (formerly AK/AS/SC/COSC 4242 3.00 - before Summer 2001) An introduction to the mathematical background in signals and systems required for computer vision and robotics; signal and image processing: sampling, discrete Fourier transform, filtering; linear system theory; Kalman filtering; feedback. Prerequisites: General prerequisites. Degree credit exclusions: AK/AS/SC/COSC 4451 3.00, AK/AS/SC/COSC 4242 3.00, SC/EATS 4020 3.00, AS/SC/MATH 4130B 3.00, AS/SC/MATH 4830 3.00, SC/PHYS 4060 3.00.

Cross-listed to: AK/COSC 3451 3.00 and AS/COSC 3451 3.00 and SC/COSC 3451 3.00

AK/AS/SC/COSC 3461 3.00 User Interfaces. This course introduces user interfaces and the tools and mechanisms to create and prototype them. Students work in small groups and learn how to design user interfaces, how to realize them and how to evaluate the end result. Prerequisite: General prerequisites. Degree credit exclusions: AK/AS/ITEC 3230 3.00, AK/AS/ITEC 3461 3.00. Not open to students who successfully completed AS/SC/COSC 4341 3.00 or AS/SC/COSC 4361 3.00 before Fall 1999.

Cross-listed to: AK/COSC 3461 3.00 and AS/COSC 3461 3.00 and SC/COSC 3461 3.00

AK/AS/SC/COSC 3900 0.00 Internship Co-op Term. Provides qualified students with the opportunity to work in the technology field as part of their Honours degree program. The Internship Co-op Office will coordinate placement of students with a specific internship position. Prerequisites: Successful completion of at least 12 computer science credits at the 3000 level including AK/AS/SC/COSC 3311 3.00 (Software Design) and an overall average of at least B in mathematics and computer science courses completed. To qualify, in the first instance, the student must be enrolled full-time in the computer science Honours program and attend all mandatory preparatory sessions as outlined by the Internship Co-op Office. Note: This course does not count for degree credit in any program. Registration in sections of AK/AS/SC/COSC 3900 0.00 while on an internship placement provides a transcript notation of the student's participation in the internship program. Students are required to register in this course in every term of their work term (internship co-op). Every student registered in the course will be assigned a faculty supervisor who will assess the student's performance during the internship.

Cross-listed to: AK/COSC 3900 0.00 and AS/COSC 3900 0.00 and SC/COSC 3900 0.00

4000-Level Courses

General Prerequisites for Arts, Atkinson and Science students. All 4000-level computer science courses require the following general prerequisites, in addition to or including any specifically stated in the course outlines below:

- AK/AS/SC/COSC 2001 3.00, AK/AS/SC/COSC 2011 3.00, AK/AS/SC/COSC 2021 4.00, AK/AS/SC/COSC 2031 3.00;
- at least 12 credits in computer science at the 3000 level;
- a cumulative grade point average of 4.5 or better over all completed computer science courses;
- AK/AS/SC/MATH 1090 3.00.

SC/COSC 4001 6.00 Space and Communication Sciences Workshop. This course is intended to allow the student to carry out the development of a specific space project, under the supervision of a faculty member, a government scientist or an industrial associate. The equivalent of nine laboratory hours per week for two terms. Prerequisites: Satisfactory completion of the 3000-level courses in the space and communication sciences core. Degree credit exclusion: AK/AS/SC/COSC 4080 3.00.

Cross-listed to: SC/COSC 4001 6.00 and SC/EATS 4001 6.00 and SC/PHYS 4001 6.00

AK/AS/SC/COSC 4080 3.00 Computer Science Project. A project in computer science chosen in consultation with, and supervised by, a member of the department. Prerequisites: General prerequisites; permission of the course director. Normally restricted to students who have taken 36 credits in computer science. Degree credit exclusion: SC/COSC 4001 6.00.

Cross-listed to: AK/COSC 4080 3.00 and AS/COSC 4080 3.00 and SC/COSC 4080 3.00

AK/AS/SC/COSC 4101 3.00 Advanced Data Structures. Amortized and worst-case analysis of data structures. Data structuring paradigms: self-adjustment and persistence. Lists: self-adjustment with the move-to-front heuristic. Search trees: splay trees, finger search trees. Heaps: skew heaps, fibonacci heaps. Union-find trees. Link-and-cut trees.

Multidimensional data structures and dynamization. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3101 3.00.

Cross-listed to: AK/COSC 4101 3.00 and AS/COSC 4101 3.00 and SC/COSC 4101 3.00

AK/AS/SC/COSC 4111 3.00 Automata and Computability. Introduction to more advanced topics in theoretical foundations of computer science, including the study of formal languages and automata, formal models of computation, and computational complexity measures. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3101 3.00. Degree credit exclusion: AK/COSC 4021 3.00.

Cross-listed to: AK/COSC 4111 3.00 and AS/COSC 4111 3.00 and SC/COSC 4111 3.00

AK/AS/SC/COSC 4115 3.00 Computational Complexity. Study of time and space and other computational resources required for efficient solution of classes of computational problems, including P and NP, PSPACE. Proof techniques including diagonalization, simulation, reduction and completeness. Models of computation, nondeterminism, randomness. Intractability. Prerequisites: AK/AS/SC COSC 3101 3.00 and general prerequisites for fourth year.

Cross-listed to: AK/COSC 4115 3.00 and AS/COSC 4115 3.00 and SC/COSC 4115 3.00

AK/AS/SC/COSC 4201 3.00 Computer Architecture. The internal structure and design ideas embodied in many computers and the techniques for evaluating them. Fast arithmetic algorithms, memory system designs, pipeline techniques, input-output subsystems and parallel computing structures. Future trends in computer architecture. Prerequisites: General prerequisites; including AK/AS/SC/COSC 3201 3.00 and AK/AS/SC/COSC 3221 3.00.

Cross-listed to: AK/COSC 4201 3.00 and AS/COSC 4201 3.00 and SC/COSC 4201 3.00

AK/AS/SC/COSC 4211 3.00 Performance Evaluation of Computer Systems. This course introduces the concept of modelling a computer system, using queuing theory techniques and simulation techniques, then it examines the practical applications of these concepts in some case studies. These case studies are chosen to have a practical impact. Prerequisites: General prerequisites; including AK/AS/SC/MATH 2030 3.00; AK/AS/SC/COSC 3211 3.00 or AK/AS/SC/COSC 3213 3.00.

Cross-listed to: AK/COSC 4211 3.00 and AS/COSC 4211 3.00 and SC/COSC 4211 3.00

AK/AS/SC/COSC 4213 3.00 Computer Networks II. This course covers more advanced topics in networking and concentrates on higher-level protocols, security, network programming and applications. Prerequisite: General prerequisites, including AK/AS/SC/COSC 3212 3.00 or AK/AS/SC/COSC 3213 3.00.

Cross-listed to: AK/COSC 4213 3.00 and AS/COSC 4213 3.00 and SC/COSC 4213 3.00

AK/AS/SC/COSC 4214 3.00 Digital Communications. Introduces fundamental principles underlying design and analysis of digital communication systems. Develops mathematical/physical understanding from the information source through the transmitter, channel, receiver and information sink. Topics include baseband transmission, matched filtering, modulation, channel coding and spread spectrum. Three lecture hours. One term. Three credits. Prerequisites: AK/AS/SC/COSC 3213 3.00; AK/AS/SC/COSC 3451 3.00 or SC/EATS 4020 3.00 or SC/PHYS 4250 3.00; AK/AS/SC/MATH 2030 3.00.

Cross-listed to: AK/COSC 4214 3.00 and AS/COSC 4214 3.00 and SC/COSC 4214 3.00

AK/AS/SC/COSC 4221 3.00 Operating System Design. (formerly AK/AS/SC/COSC 4321 3.00 - before Summer 2001) An operating system has four major components: process management, input/output, memory management, file system. This project-oriented course puts OS principles into action: design and implementation of components of an OS, interaction with existing system software (using C under Unix). Prerequisites: General prerequisites, including AK/AS/SC/COSC 3221 3.00. Degree credit exclusion: AK/AS/SC/COSC 4321 3.00.

Cross-listed to: AK/COSC 4221 3.00 and AS/COSC 4221 3.00 and SC/COSC 4221 3.00

AK/AS/SC/COSC 4301 3.00 Programming Language Design. Advanced features of algorithmic languages: modules (packages), exceptions and tasks. A survey of non-algorithmic languages: object-oriented languages, logic programming languages. Introduction to formal semantics. Recent developments in programming language design. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3301 3.00.

Cross-listed to: AK/COSC 4301 3.00 and AS/COSC 4301 3.00 and SC/COSC 4301 3.00

AK/AS/SC/COSC 4302 3.00 Compilers and Interpreters. Principles and design techniques for compilers and interpreters. Compiler organization, compiler writing tools, scanning, parsing, semantic analysis, run-time storage organization, memory management, code generation and optimization. Students implement a substantial portion of a compiler in a project. Prerequisites: General prerequisites; AK/AS/SC/COSC 3301 3.00 is recommended.

Cross-listed to: AK/COSC 4302 3.00 and AS/COSC 4302 3.00 and SC/COSC 4302 3.00

AK/AS/SC/COSC 4311 3.00 System Development. A study of concurrency and communication in system development. Specification, design and implementation of computer systems which continuously interact with other systems. Topics may include object-oriented modelling, formal specification languages, CASE tools. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3221 3.00 or AK/AS/SC/COSC 3311 3.00.

Cross-listed to: AK/COSC 4311 3.00 and AS/COSC 4311 3.00 and SC/COSC 4311 3.00

AK/AS/SC/COSC 4312 3.00 Software Engineering Requirements. This course deals with the elicitation, specification and analysis of software requirements and provides a critical description of available methods and tools, and practical exercises on applying these methods and tools to realistic problems. Three lecture hours per week. One term. Three credits. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3311 3.00.

Cross-listed to: AK/COSC 4312 3.00 and AS/COSC 4312 3.00 and SC/COSC 4312 3.00

AK/AS/SC/COSC 4313 3.00 Software Engineering Testing. An introduction to systematic methods of testing and verification, covering a range of static and dynamic techniques and their use within the development process; emphasizes the view that design should be carried out with verification in mind to achieve overall project goals. Three lecture hours per week. One term. Three credits. Prerequisites: General prerequisites, including AK/AS/SC COSC 3311 3.00.

Cross-listed to: AK/COSC 4313 3.00 and AS/COSC 4313 3.00 and SC/COSC 4313 3.00

AK/AS/SC/COSC 4351 3.00 Real-Time Systems Theory. Specification and verification techniques for real-time systems with many interacting components. Formal design of real-time systems using (a) programming languages with unambiguous semantics of time-related behaviour and (b) scheduling algorithms. Prerequisites: General prerequisites; including one of AK/AS/SC/COSC 3221 3.00, AK/AS/SC/COSC 3311 3.00, AK/AS/SC/COSC 3341 3.00.

Cross-listed to: AK/COSC 4351 3.00 and AS/COSC 4351 3.00 and SC/COSC 4351 3.00

AK/AS/SC/COSC 4352 3.00 Real-Time Systems Practice. Introduction to the correct use and applications of real-time programming languages. Examples of real-time programming languages are studied in detail and applied to the solution of typical real-time programming problems (e.g. communication networks, avionic systems and process control). Prerequisites: General prerequisites; including one of AK/AS/SC/COSC 3221 3.00, AK/AS/SC/COSC 3301 3.00, AK/AS/SC/COSC 3311 3.00.

Cross-listed to: AK/COSC 4352 3.00 and AS/COSC 4352 3.00 and SC/COSC 4352 3.00

AK/AS/SC/COSC 4401 3.00 Artificial Intelligence. Introduction to the main ideas of current machine learning research: induction, abduction, deduction; learning from examples and formal models, Bayes' rule, Solomonoff's idea, Gold paradigm, Valiant model of learning, Rissanen's minimum description length principle; distribution free and unsupervised learning. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3402 3.00.

Cross-listed to: AK/COSC 4401 3.00 and AS/COSC 4401 3.00 and SC/ COSC 4401 3.00

AK/AS/SC/COSC 4402 3.00 Logic Programming. This course is an introduction to fundamental concepts of logic programming and logic programming languages. In the course, the logic programming language PROLOG is discussed and programming techniques and applications are studied. Prerequisites: General prerequisites; including AK/AS/SC/COSC 3401 3.00 and one of AK/AS/SC/COSC 3101 3.00, AK/AS/SC/COSC 3341 3.00.

Cross-listed to: AK/COSC 4402 3.00 and AS/COSC 4402 3.00 and SC/ COSC 4402 3.00

AK/AS/SC/COSC 4411 3.00 Database Management Systems. A study of principles of database management systems. A thorough analysis of theory of normal, relational algebra and calculus and query languages based on these concepts. Other topics: security and integrity issues, concurrency control, distributed systems, query optimization. Prerequisites: General prerequisites; including one of AK/AS/SC/COSC 3421 3.00, AK/AS/ITEC 3421 3.00.

Cross-listed to: AK/COSC 4411 3.00 and AS/COSC 4411 3.00 and SC/ COSC 4411 3.00

AK/AS/SC/COSC 4412 3.00 Data Mining. This course introduces and presents basic concepts of data mining, data mining techniques, models and applications. Topics include association rule mining, classification models, sequential pattern mining and clustering. Prerequisites: General prerequisites for 4000-level courses, including AK/AS/SC COSC 3421 3.00 and one of AK/AS/SC MATH 2030 3.00 or AK/AS/SC MATH 1131 3.00.

Cross-listed to: AK/COSC 4412 3.00 and AS/COSC 4412 3.00 and SC/ COSC 4412 3.00

AK/AS/SC/COSC 4413 3.00 Building E-Commerce Systems. Technological infrastructure for electronic commerce on the Internet. Terminology and architectures. Security and cryptography. Content presentation. Web protocols. Adaptive, intelligent agents and data mining. Vertical applications. Prerequisites: General prerequisites; including AK/ AS/SC/COSC 3212 3.00 or AK/AS/SC/COSC 3213 3.00, AK/AS/SC/ COSC 3221 3.00 or AK/AS/SC/COSC 3421 3.00. Degree credit exclusion: AK/AS/ITEC 4020 3.00.

Cross-listed to: AK/COSC 4413 3.00 and AS/COSC 4413 3.00 and SC/ COSC 4413 3.00

AK/AS/SC/COSC 4421 3.00 Introduction to Robotics. An introduction to robot arms and autonomous vehicles. The course covers control and manipulator theory, robot sensors and navigation. Prerequisite: AS/SC/ MATH 1025 3.00. For computer science majors: General prerequisites for 4000-level computer science courses. For engineering or space and communication science majors: AK/AS/SC/COSC 2011 3.00; AK/AS/SC/ COSC 2031 3.00; corequisite: SC/ENG 4000 6.00.

Cross-listed to: AK/COSC 4421 3.00 and AS/COSC 4421 3.00 and SC/ COSC 4421 3.00

AK/AS/SC/COSC 4422 3.00 Computer Vision. An introductory course in computer vision: high- and low-level vision systems, the measurement and interpretation of visual data, static and dynamic scene analysis. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3121 3.00 or AS/SC/MATH 3241 3.00.

Cross-listed to: AK/COSC 4422 3.00 and AS/COSC 4422 3.00 and SC/ COSC 4422 3.00

AK/AS/SC/COSC 4431 3.00 Computer Graphics. (formerly AK/AS/SC/ COSC 4331 3.00 - before Summer 2001) Algorithms for the creation, manipulation and display of objects in an interactive graphical environment. Prerequisites: General prerequisites; AS/SC/MATH 1025 3.00. Degree credit exclusion: AK/AS/SC/COSC 4331 3.00.

Cross-listed to: AK/COSC 4431 3.00 and AS/COSC 4431 3.00 and SC/ COSC 4431 3.00

AK/AS/SC/COSC 4441 3.00 Human-Computer Interaction. (formerly AK/AS/SC/COSC 4341 3.00 - before Summer 2001) This course introduces the concepts and technology necessary to design, manage and implement interactive software. Students work in small groups and learn how to design user interfaces, how to realize them and how to evaluate the end result. Both design and evaluation are emphasized. Prerequisites: General prerequisites; AK/AS/SC/COSC 3461 3.00. Degree credit exclusion: AK/AS/SC/COSC 4341 3.00.

Cross-listed to: AK/COSC 4441 3.00 and AS/COSC 4441 3.00 and SC/ COSC 4441 3.00

AK/AS/SC/COSC 4461 3.00 Hypermedia and Multimedia Technology. (formerly AK/AS/SC/COSC 4361 3.00 - before Summer 2001) Design and application of computer systems which provide information resources for learning, online-help, conceptual exploration, visualization and entertainment; e.g. hypertext/hypermedia, networked information-servers, systems for collaborative work and virtual reality. One or two topics are discussed in depth using current research literature. Normally offered in alternate years. Prerequisites: General prerequisites, including AK/AS/SC/COSC 3461 3.00 or AK/AS/ITEC 3461 3.00. Degree credit exclusion: AK/AS/SC/COSC 4361 3.00.

Cross-listed to: AK/COSC 4461 3.00 and AS/COSC 4461 3.00 and SC/ COSC 4461 3.00

AK/AS/SC/COSC 4471 3.00 Introduction to Virtual Reality. Introduction to the basic principles of virtual reality and its applications. The necessary hardware and software components of interactive 3D systems as well as human factors are discussed. The material is reinforced by practical assignments and projects. Three lecture hours per week. One term. Three credits. Prerequisites: General prerequisites for 4000-level computer science courses, or SC/ENG 4000 6.00 taken as a corequisite; and AK/AS/SC/COSC 3321 3.00, AK/AS/SC/COSC 3311 3.00, AK/AS/ SC/MATH 1025 3.00.

Cross-listed to: AK/COSC 4471 3.00 and AS/COSC 4471 3.00 and SC/ COSC 4471 3.00

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Computer Science in Liberal Arts – Glendon

Department Office/Bureau du départemen t:
329 York Hall/329 Pavillon York, 416-487-6706
Chair of the Department/Directrice du départemen t:
M. Kant
Professor/Professeur :
E. Roventa
Associate Professor/Professeur agrégée :
M. Kant
Assistant Professor/Professeur Adjoint :
T. Cao-Huu

Courses in Computer Science in Liberal Arts

Note: GL/CSLA 1620 3.00 and GL/CSLA 1630 3.00 are prerequisites for all computer science courses except GL/CSLA 1650 3.00, GL/CSLA 1925 3.00, GL/CSLA 1927 3.00, GL/CSLA 1960 3.00 and GL/CSLA 1970 3.00. Students intending to concentrate in computer science should normally take GL/CSLA 1620 3.00 in their first year. Students who have taken GL/ CSLA 1620 3.00 may not take GL/CSLA 1960 3.00 or GL/CSLA 1970 3.00.

All mathematics requirements must be completed before enrolling in 3000- and 4000-level courses.

N.B. : GL/CSLA 1620 3.00 et GL/CSLA 1630 3.00 sont des cours préalables obligatoires pour tous les cours d'Informatique, sauf pour les cours, GL/CSLA 1650 3.00, GL/CSLA 1925 3.00, GL/CSLA 1927 3.00, GL/CSLA 1960 3.00 et GL/CSLA 1970 3.00. Les étudiants qui ont l'intention de se spécialiser en informatique devraient normalement suivre, durant leur première année, GL/CSLA 1620 3.00. Les étudiants qui ont

déjà suivi GL/CSLA 2960 3.00 ne peuvent pas suivre GL/CSLA 1960 3.00, GL/CSLA 1970 3.00, GL/CSLA 1925 3.00 ou GL/CSLA 1927 3.00.

Toutes les exigences en mathématiques doivent être complétées avant de s'inscrire dans des cours au niveau 3000 ou 4000.

GL/CSLA 1620 3.00 Object-Based Programming. This is a first course on problem solving and algorithm development using Java. It introduces structured programming techniques using primitive data types and APIs to build and implement objects. This course also introduces the object-oriented design of applications using existing classes. Degree credit exclusion: GL/COSC/MODR/ITEC 2960 3.00. Course equivalency: AK/AS/ITEC 1620 3.00.

Cross-listed to: GL/CSLA 1620 3.00 and GL/ITEC 1620 3.00

GL/CSLA 1620 3.00 Programmation par objets I. Ce premier cours sur la résolution de problèmes et la réalisation d'algorithmes à l'aide de Java introduit des techniques de programmation structurées à l'aide de types de données primitives et d'IPA pour construire et utiliser des objets. Ce cours introduit aussi la réalisation d'applications par objets à l'aide de classes existantes. Cours incompatible: GL/COSC/MODR 2960 6.00, GL/COSC/MODR/ITEC 2960 3.00. Équivalence de cours : AK/AS/ITEC 1620 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1620 3.00 and GL/ITEC 1620 3.00

GL/CSLA 1630 3.00 Object-Oriented Programming. This course introduces class implementation either from scratch or by extending an existing class. Inheritance and polymorphism are discussed in detail. Focus on user-interface classes. Object-oriented design (with UML) using existing or newly created classes is further discussed. Prerequisite: GL/CSLA 1620 3.00. Degree credit exclusion: GL/COSC/MODR/ITEC 2970 3.00. Course equivalency: AK/AS/ITEC 1630 3.00.

Cross-listed to: GL/CSLA 1630 3.00 and GL/ITEC 1630 3.00

GL/CSLA 1630 3.00 Programmation par objets II. Ce cours introduit la mise en application de classes, soit en partant des bases, soit en élargissant des classes existantes. Cette mise en application permet une étude approfondie de l'héritage et du polymorphisme et aussi de la réalisation par objets (en UML) à l'aide de classes existantes ou nouvellement créées. Condition préalable : GL/CSLA/ITEC 1620 3.00. Cours incompatibles : GL/COSC/MODR 2970 6.00 et GL/COSC/ITEC/MODR 2970 3.00. Équivalence de cours : AK/AS/ITEC 1630 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1630 3.00 and GL/ITEC 1630 3.00

GL/CSLA 1650 3.00 Elements of Discrete Mathematics. The logic of propositions; truth tables; valid arguments; logic circuits. Set operations; relations on sets; Boolean functions. Counting principles; permutations; combinations; inclusion-exclusion principle; binomial and multinomial coefficients. Recurrence relations of order one and two; mathematical induction. Prerequisites: At least one OAC mathematics credit or its equivalent, or permission of the instructor. Degree credit exclusions: GL/MATH 1630 3.00 and GL/MATH 1640 3.00.

Cross-listed to: GL/CSLA 1650 3.00 and GL/MATH 1650 3.00 and GL/MODR 1650 3.00

GL/CSLA 1925 3.00 The Elements of Logic for Computer Science. This course introduces the fundamental elements of formal logic and its applications in computer science. The subjects covered include: propositional logic, reasoning, automatic deduction, resolution, logic circuits, predicate logic, applications in programming logic. Degree credit exclusion: GL/COSC/MODR 2900 6.00.

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/CSLA 1925 3.00 Éléments de logique pour l'informatique. Ce cours introduit les éléments fondamentaux de la logique formelle et ses applications en informatique. Les sujets abordés incluent: la logique des propositions, raisonnements, déduction automatique, résolution, circuits logiques, la logique des prédicats, applications dans la programmation logique. Cours incompatible: GL/COSC/MODR 2900 6.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1925 3.00 and GL/ITEC 1925 3.00 and GL/MATH 1925 3.00 and GL/MODR 1925 3.00

GL/CSLA 1927 3.00 Mathematical Structures for Computer Science. This course is designed to introduce and analyze some of discrete mathematical topics related to computer science. The subjects covered include sets, relations, recursive relations, mathematical induction, congruence, groups, graphs and trees, Boolean algebra, and complexity of algorithms and big Oh-notation. Prerequisite: GL/ITEC/CSLA/MODR 1925 3.00 or GL/MATH 1650 3.00. Degree credit exclusion: GL/COSC/MODR 2900 6.00.

Cross-listed to: GL/CSLA 1927 3.00 and GL/ITEC 1927 3.00 and GL/MODR 1927 3.00

GL/CSLA 1960 3.00 Introduction to Computer Usage I. An introduction to computers and their applications for students with no previous background in the subject. Concepts of both hardware and software are discussed, and students are introduced to standard microcomputer-based applications packages. Degree credit exclusion: GL/COSC/MODR/SOSC 1960 6.00.

Cross-listed to: GL/CSLA 1960 3.00 and GL/MODR 1960 3.00 and GL/SOSC 1960 3.00

GL/CSLA 1960 3.00 Introduction à l'application des ordinateurs I. Ce cours a pour but d'initier les étudiants à l'application des ordinateurs. On y enseignera les unités matérielles et fonctionelles de l'ordinateur. On apprendra aussi un système d'exploitation et un nombre de logiciels qui sont populaires sur les micro-ordinateurs. Cours incompatible : GL/COSC/MODR/SOSC 1960 6.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1960 3.00 and GL/MODR 1960 3.00 and GL/SOSC 1960 3.00

GL/CSLA 1970 3.00 Introduction to Computer Usage II. Topics studied include information systems development and database processing, and a survey of common programming languages, including fourth generation languages and object oriented languages. Students will be introduced to programming in a high level language. The course will conclude with a discussion of some of the economic and social issues surrounding computerization. Prerequisite: GL/CSLA 1960 3.00. Degree credit exclusion: GL/COSC/MODR/SOSC 1960 6.00.

Cross-listed to: GL/CSLA 1970 3.00 and GL/MODR 1970 3.00 and GL/SOSC 1970 3.00

GL/CSLA 1970 3.00 Introduction à l'application des ordinateurs II. Ce cours introduit le développement de systèmes d'information et la gestion de base de données. On apprendra la structure et la conception des algorithmes et la programmation en langage de haut niveau. Le cours présente aussi les répercussions économiques et sociales des microprocesseurs. Condition préalable : GL/CSLA 1960 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 1970 3.00 and GL/MODR 1970 3.00 and GL/SOSC 1970 3.00

GL/CSLA 2001 3.00 Introduction to Theory of Computation. Introduction to the theory of computing, including automata theory, formal languages and Turing machines, theoretical models and their applications. (Same as AK/AS/SC/COSC 2001 3.00) Corequisites: GL/CSLA/ITEC 1927 3.00. Degree credit exclusion: GL/COSC 3212 3.00.

GL/CSLA 2001 3.00 Introduction à la théorie de la computation. Introduction à la théorie de la computation, incluant : théorie des automates, langages formels et machines de Turing; modèles théoriques et leurs applications. (Identique à AK/AS/SC/COSC 2001 3.00) Conditions concomitantes : GL/CSLA/ITEC 1927 3.00. Cours incompatible : GL/COSC 3212 3.00.

Language of Instruction: French

GL/CSLA 2010 3.00 Analyse et conception des systèmes d'information. Parmi les sujets abordés dans ce cours citons : système d'information d'organisation et système d'information informatisé, les

différents types de systèmes d'information, le développement en cascade : le développement rapide et le prototypage, le développement orienté objet, modélisation des données, et modélisation des traitements. Conditions préalables : GL/ITEC 1010 3.00 et GL/ITEC 1011 3.00 pour ITEC. Condition concomitante : GL/CSLA 1620 3.00 pour CSLA. Cours incompatible : GL/COSC 3500 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 2010 3.00 and GL/ITEC 2010 3.00

GL/CSLA 2620 3.00 Fundamentals of Data Structures. This course presents elementary abstract data structures: stacks, lists and queues, and associated algorithms. It also introduces the files, data structure for external data storage and different file structures: sequential, index sequential and hashes (direct access files). Prerequisite: GL/CSLA 1630 3.00. Course equivalency: AK/AS/ITEC 2620 3.00. Degree credit exclusion: GL/COSC 3400 6.00 and GL/COSC 3400 3.00.

Cross-listed to: GL/CSLA 2620 3.00 and GL/ITEC 2620 3.00

GL/CSLA 2620 3.00 Principes fondamentaux des structures de données. Ce cours présente des structures de données abstraites élémentaires : piles, queues et listes et les algorithmes associés. Il présente aussi une introduction aux fichiers, structures de données pour le stockage externe et leur organization : sequentiel, sequentiel-indexé et fichiers à accès direct. Condition préalable : GL/CSLA/ITEC 1630 3.00. Cours incompatible : GL/COSC 3400 6.00 et GL/COSC 3400 3.00. Équivalence de cours : AK/AS/ITEC 2620 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 2620 3.00 and GL/ITEC 2620 3.00

GL/CSLA 3210 6.00 Data Processing.

GL/CSLA 3215 3.00 Introduction à l'analyse des algorithmes. Dans la première partie du cours on introduit les concepts fondamentaux de l'analyse d'algorithmes (les types de problèmes, les modèles d'algorithme et les moyens de définir et d'évaluer la complexité de coûts (moyen, meilleur, pire) ainsi que les techniques d'estimation (bornes supérieures et inférieures) sont présentés. Dans la seconde partie du cours, on applique ces techniques aux trois classes d'algorithmes : recherche, sélection, et sondage. Des algorithmes variés seront analysés et comparés dans différents modèles. Le cours va souligner l'application des concepts étudiés au moyen d'un grand nombre d'exemples et de deux travaux pratiques.

Language of Instruction: French

GL/CSLA 3411 3.00 Advanced Data Structures. This course presents advanced abstract structures: trees, search trees, sets, graphs, heaps and their implementation using object oriented programming language. Abstract data structures for external date storage will be correspondingly deepened. Prerequisites: GL/CSLA 1620 3.00, GL/CSLA 1630 3.00, GL/CSLA 2620 3.00. Degree credit exclusion: GL/COSC 3410 3.00.

GL/CSLA 3411 3.00 Cours avancé de structures de données. Ce cours présente des structures de données abstraites avancées: arborescences, arborescences de recherche, ensembles, graphes, tas (monceaux), et leur mise en application utilisant un langage orienté objet. Les structures de données abstraites pour le stockage externe seront corrélativement approfondies. Conditions préalables : GL/CSLA 1620 3.00, GL/CSLA 1630 3.00, GL/CSLA 2620 3.00. Cours incompatible : GL/COSC 3410 3.00.

Language of Instruction: French

GL/CSLA 3461 3.00 Human-Computer Interaction. This course introduces the concepts and technology necessary to design, manage and implement interactive software. Students work in small groups and learn how to design user interfaces, how to realize them and how to evaluate the end result. Equivalent courses: AK/AS/SC/COSC 3461 3.00. Prerequisite: GL/COSC/ITEC 3400 3.00.

Cross-listed to: GL/CSLA 3461 3.00 and GL/ITEC 3461 3.00

GL/CSLA 3510 3.00 Genie des logiciels. Validation des étapes du cycle de vie du logiciel. Gestion de projet. Estimation des coûts. Stratégies de conception, codage, test et maintenance. Techniques de vérification dé programmes. Condition préalable : GL/CSLA 3500 3.00. Cours incompatible : GL/COSC 3500 6.00.

Language of Instruction: French

GL/CSLA 3610 3.00 Computer Organization. This course reviews the fundamental structures in modern processor design. Topics will include computer organization, instruction set design, memory system design and pipelining. Emphasis will be on a quantitative evaluation of design alternatives and an understanding of timing issues. There will be experimentation with LabVIEW (Laboratory Virtual Instrument Engineering Workbench), a graphical programming language for virtual instrumentation and simulation. Prerequisite: GL/CSLA/ITEC 1630 3.00. Degree credit exclusion: GL/COSC 3800 3.00.

Cross-listed to: GL/CSLA 3610 3.00 and GL/ITEC 3610 3.00

GL/CSLA 3610 3.00 L'architecture des ordinateurs. Ce cours présente une revue des composantes fondamentales dans la conception des processeurs modernes. Les sujets inclus sont l'organisation de l'ordinateur, la conception des commandes, la conception de la mémoire et pipeline d'exécution, avec insistance sur l'évaluation quantitative de la conception et d'autres alternatives et compréhension des problèmes de synchronisation. Il y aura une expérimentation avec LabVIEW (Laboratory Virtual Instrument Engineering Workbench), un logiciel de développement d'applications d'instrumentation et de simulation. Condition préalable : GL/CSLA/ITEC 1630 3.00. Cours incompatible : GL/COSC 3800 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 3610 3.00 and GL/ITEC 3610 3.00

GL/CSLA 3620 3.00 DataBase Management Systems I. The course presents some models for the DataBase Management Systems (DBMS). IT concerns the study of the representation of the reality using the entity-relation model, and the relational DataBase Management System and its normalization. The course includes also an introduction to the SQL, a data definition, data manipulation and data control language, currently used in a relational database. Prerequisite: GL/CSLA 3411 3.00. Degree credit exclusion: GL/COSC 4510 3.00.

Cross-listed to: GL/CSLA 3620 3.00 and GL/ITEC 3620 3.00

GL/CSLA 3620 3.00 Systèmes de gestion de bases de données. Ce cours présente différents modèles pour les systèmes de gestion de base de données (SGBD). On étudie la modélisation de la réalité utilisant le modèle entité - relation, le système de gestion de base de données relationnelle et sa normalisation. Le cours comprend aussi une introduction au SQL, langage de définition, manipulation et contrôle de données dans une base de données relationnelle. Condition préalable : GL/CSLA 3411 3.00. Cours incompatible : GL/COSC 4510 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 3620 3.00 and GL/ITEC 3620 3.00

GL/CSLA 3635 3.00 Computer Graphics. This course introduces many important data structures and algorithms to present data visually on a computer in order to provide background to write computer graphics applications. The first half of the course will cover two dimensional computer graphics, raster operations, imaging methods, and user interface design and construction. The second half will include topics related to the three-dimensional computer graphics, such as representation, illumination, shading, visibility determination, rendering and animation. Prerequisite: GL/CSLA/ITEC 2620 3.00. Course equivalency: SC/COSC 4331 3.00.

Cross-listed to: GL/CSLA 3635 3.00 and GL/ITEC 3635 3.00

GL/CSLA 3635 3.00 Graphisme par ordinateur. Ce cours introduit de multiples structures de données et algorithmes essentiels à la représentation graphique de données sur ordinateur. L'objectif est de fournir suffisamment de bases pour écrire des logiciels d'applications graphiques. La première moitié du cours couvrira les applications graphiques à deux dimensions, les opérations "raster", les méthodes pour l'imagerie, ainsi que la conception et l'élaboration des interfaces utilisateur. La seconde partie inclura les sujets relatifs aux applications graphiques à trois dimensions, comprenant les techniques de

représentation, d'éclairage, de traitement des ombres, de détermination des parties visibles, d'élaboration du rendu final, et d'animation. Condition préalable : GL/CSLA 2620 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 3635 3.00 and GL/ITEC 3635 3.00

GL/CSLA 3640 3.00 Computer Hardware. This course studies the design, structure and operation of digital computers. Topics include logic circuits and digital electronics, computer arithmetic, and machine language programming. Consideration of the design interactions between hardware and software system. Prerequisite: GL/CSLA/ITEC 3610 3.00.

Cross-listed to: GL/CSLA 3640 3.00 and GL/ITEC 3640 3.00

GL/CSLA 3640 3.00 Le Matériel Informatique. Ce cours traite de la conception des composantes et de l'utilisation des ordinateurs numériques. Les sujets sont circuits logiques et électronique digitale, logique de Boole, programmation et interaction entre le matériel et le logiciel. Condition préalable : GL/CSLA 3610 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 3640 3.00 and GL/ITEC 3640 3.00

GL/CSLA 3710 3.00 Advanced and Practical Aspects of C/C++ and UNIX/LINUX. The purpose of the course is to present to the students an introduction to UNIX/LINUX operating system, programming in C/C++, and practical software design in the UNIX/LINUX environment using the software tools available under this system. Prerequisite: GL/CSLA/ITEC 1630 3.00. Degree credit exclusion: GL/COSC 3710 6.00.

GL/CSLA 3710 3.00 Aspects avancés et pratiques de C/C++ et UNIX/LINUX. L'objectif de ce cours est de familiariser les étudiants avec le système d'exploitation UNIX/LINUX, la programmation en C/C++, ainsi qu'avec les pratiques courantes de conception de logiciel dans l'environnement UNIX/LINUX en utilisant les outils de conception de logiciel disponibles dans ce système. Condition préalable : GL/CSLA/ITEC 1630 3.00. Cours incompatible : GL/COSC 3710 6.00.

Language of Instruction: French

GL/CSLA 3720 3.00 Object Oriented Programming. The course introduces object-oriented program design using, creating and extending hierarchies of program objects. Programming will be done in C++ and/or Objective C. Prerequisite: GL/CSLA 3410 3.00. Degree credit exclusion: GL/COSC 3710 6.00.

GL/CSLA 3830 3.00 Operating Systems. A discussion of the principles underlying the design of operating systems. Topics covered include the history of operating systems, user interfaces, memory management, process scheduling, file systems, concurrent processing, multiple processors and networks. Other topics addressed include; measuring system performance and assessing system security. Examples will be drawn from commonly used operating systems such as UNIX, MS-DOS and VMS. Prerequisite: GL/CSLA 3411 3.00 and GL/CSLA 3610 3.00. Degree credit exclusion: GL/COSC 4810 6.00(EF.)

GL/CSLA 3830 3.00 Les systèmes d'exploitation. Études des principes qui sous-tendent les systèmes d'exploitation. Histoire des systèmes d'exploitation; les interfaces usager, la gestion de la mémoire, l'ordonnancement des processus, les systèmes de fichiers, les processus concurrents, les multi-processeurs, les réseaux. Autres sujets possibles - les mesures de performance du système, l'évaluation de la sécurité des systèmes d'exploitations couramment utilisés tels que UNIX, MS-DOS et VMS. Condition préalable : GL/CSLA 2620 3.00 et GL/CSLA 3610 3.00.

Language of Instruction: French

GL/CSLA 4100 3.00 Directed Readings in Computer Science. Students at the third and fourth year of their studies who are specializing in computer science may do independent study under the direction of a member of the department and with the approval of the Chair of the department. To this end, he/she must submit to the Chair of the department, a detailed description of study and the evaluation criteria which have been previously approved by the faculty member who has agreed to supervise the course work. Prerequisite: GL/CSLA 1630 3.00.

GL/CSLA 4100 6.00 Directed Readings. Students at the third and fourth year of their studies who are specializing in computer science may do independent study under the direction of a member of the department and with the approval of the Chair of the department. To this end, he/she must submit to the Chair of the department, a detailed description of study and the evaluation criteria which have been previously approved by the faculty member who has agreed to supervise the course work. Prerequisite: GL/CSLA 1630 3.00.

GL/CSLA 4200 3.00 La logique floue pour les affaires, la finance et la gestion. Les concepts de base de la logique floue. Décision dans un contexte imprécis. Le contrôle flou pour les affaires, la finance et la gestion. Études de cas pratiques. Condition préalable : GL/CSLA 1927 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 4200 3.00 and GL/ITEC 4200 3.00

GL/CSLA 4250 3.00 Selected Topics in Computer Science. This course allows students and faculty to explore various topics in computer science which are not included in other course offerings. GL/CSLA 4250 3.00 may be taken more than once for credit with departmental approval. Prerequisites: GL/CSLA 1630 3.00 and nine additional credits depending on topic to be studied and approval from the Chair of department.

GL/CSLA 4300 3.00 Interactive System Design. A study of what makes an interactive system good or bad. The benefits of add-on user interfaces; the user's perceptual and cognitive requirements; an examination of appropriate hardware and software. Students design and implement components of an interactive system.

GL/CSLA 4520 3.00 Les réseaux informatiques. Le cours met l'accent sur l'étude des réseaux numériques à intégration de services (RNIS-ISDN) et sur les réseaux à communication des cellules (les réseaux ATM). Une autre partie du cours est dédiée à TCP/IP, à l'Internet, au Multimedia, au traitement des différents types de commutation, les passerelles et l'interconnexion des réseaux.

Language of Instruction: French

GL/CSLA 4570 3.00 Introduction to Compiler Design. Functions of compilers, processors, preprocessors and translators. Structure of compilers. Lexical and syntactical analysis. Semantic analysis and translation. Object code generation. Error. Diagnostics. (Same as AK/AS/SC/COSC 4302 3.00) Prerequisites: GL/CSLA 2001 3.00, GL/CSLA 3400 3.00. Degree credit exclusion: GL/COSC 3570 3.00.

GL/CSLA 4570 3.00 Introduction à la construction des compilateurs. Les fonctions des compilateurs, processeurs, préprocesseurs et traducteurs. Organisation d'un compilateur. Analyse lexicale et syntaxique, analyse sémantique et traduction. Génération du code objet. Détection d'erreurs. Les étudiants devront mettre en application ces principes dans un projet majeur le développement d'un compilateur pour un langage simple. (Identique à AK/AS/SC/COSC 4302 3.00) Conditions préalables : GL/CSLA 2001 3.00, GL/CSLA 3400 3.00. Cours incompatible : GL/COSC 3570 3.00.

Language of Instruction: French

GL/CSLA 4590 3.00 Computer Simulation. This course introduces students to techniques involved in the simulation of both discrete-event and dynamic continuous systems. Major areas covered include: the generation and use of random numbers, a building of a model, special-purpose simulation languages such as GPSS, case studies. Prerequisite: GL/CSLA 2970 3.00.

GL/CSLA 4600 3.00 Informatique et traduction. Ce cours explorera trois domaines distincts: la traduction automatique (historique et fonctionnement), la traduction assistée (traitement de texte, contrôle orthographique, dictionnaires informatisés, réseaux d'information), l'analyse automatique et la génération d'énoncés en langage naturel. Condition préalable : GL/CSLA 1970 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 4600 3.00 and GL/TRAN 4600 3.00

GL/CSLA 4605 3.00 Issues in Information Technology. A study of the technical, economic and regulatory issues surrounding emerging information technologies. New developments in miniaturization, signal processing, video compression, digital switching and bandwidth capacity have led to the convergence of voice, video and data along what has come to be termed the information highway. These developments are examined from the perspective of the economic and social costs and benefits of alternative technologies and the effect of deregulation on competition and the delivery of services. Job creation and displacement, accessibility, and pricing are also discussed. Prerequisites: GL/CSLA 1960 3.00, GL/CSLA 1970 3.00, GL/ECON 2500 3.00, GL/ECON 2510 3.00 or equivalents and at least six credits at the third year level from one or more of the social sciences. Degree credit exclusions: GL/COSC/SOSC 4610 3.00, GL/ECON 3610 3.00 (Fall/Winter 1994-1995, Fall/Winter 1995-1996, Fall/Winter 1996-1997).

Cross-listed to: GL/CSLA 4605 3.00 and GL/ECON 4605 3.00 and GL/SOSC 4605 3.00

GL/CSLA 4620 6.00 Stage en informatique. Un stage à temps plein de 3 ou 4 mois dans une compagnie d'informatique ou de la technologie de l'information. Soumission d'un rapport technique qui lie des aspects de ce travail aux études d'informatique ou de la technologie de l'information que l'étudiant(e) a fait antérieurement. Conditions préalables : GL/CSLA 3830 3.00, GL/CSLA 2010 3.00 et une moyenne cumulative de B+.

Language of Instruction: French

Cross-listed to: GL/CSLA 4620 6.00 and GL/ITEC 4620 6.00

GL/CSLA 4625 3.00 Data Communications and Networks. This course concerns the theory and applications of data communications; basic principles of telephony and switching; norms and protocols; algorithms used in data communications; LAN (local area network); ISO/OSI norms; SNA; hardware and software for communications. Prerequisite: GL/CSLA 2620 3.00. Degree credit exclusion: GL/COSC 4500 3.00.

Cross-listed to: GL/CSLA 4625 3.00 and GL/ITEC 4625 3.00

GL/CSLA 4625 3.00 Télématique et réseaux. Théorie et applications des communications informatiques; principes de téléphonie et de commutation; normes et protocoles; algorithmes de contrôle de la circulation; réseaux locaux; normes ISO/OSI, SNA, et matériels/logiciels de communications. Conditions préalables : GL/CSLA 1630 3.00, GL/CSLA 3610 3.00 et GL/CSLA 3830 3.00. Cours incompatible : GL/COSC 4500 3.00.

Language of Instruction: French

Cross-listed to: GL/CSLA 4625 3.00 and GL/ITEC 4625 3.00

GL/CSLA 4630 3.00 Internet Programming. This course introduces JavaScript to build dynamic interfaces on the Web, PERL language to construct and manipulate persistent objects on the Web, presents the Client-Server model and teaches the use of middleware to query a database on the Web. Prerequisite: GL/CSLA 1630 3.00. Degree credit exclusion: GL/COSC/ITEC 3010 3.00 (Fall 2001).

Cross-listed to: GL/CSLA 4630 3.00 and GL/ITEC 4630 3.00

GL/CSLA 4630 3.00 Programmation Internet. Le cours aborde le langage JavaScript et son utilisation pour construire des interfaces dynamiques sur le Web, ainsi que le langage PERL et à son utilisation pour la construction des objets persistants sur le Web, présente le modèle client-serveur et intérroge une base de données utilisant une couche médiatrice. Condition préalable : GL/CSLA 1630 3.00. Cours incompatible : GL/COSC/ITEC 3010 3.00 (Automne 2001).

Language of Instruction: French

Cross-listed to: GL/CSLA 4630 3.00 and GL/ITEC 4630 3.00

GL/CSLA 4635 3.00 Computer Algorithms and Techniques for Imaging Cognition. This course offers an introduction to techniques and computer algorithms for functional brain imaging as well as recent development in cognitive neuropsychology. It examines how theories of normal cognitive functioning can be informed by evidence from brain-damaged patients and how converging evidence may be obtained from functional neuro-imaging techniques. Programming exercises will use data sets from current experiments. Prerequisites: GL/CSLA/ITEC 2620 3.00 plus six credits at the 3000 and six credits at the 4000 level in psychology or permission of the instructor.

Cross-listed to: GL/CSLA 4635 3.00 and GL/ITEC 4635 3.00 and GL/PSYC 4635 3.00

GL/CSLA 4635 3.00 Algorithmes et techniques informatiques pour l'imagerie cognitive. Ce cours offre une introduction aux techniques et algorithmes de l'imagerie fonctionnelle du cerveau aussi bien qu'une présentation des dernières réalisations en neuropsychologie cognitive. Il analyse les théories du fonctionnement cognitif normal et des mesures prélevées sur des patients atteints de lésions cérébrales, et la convergence avec les résultats obtenus à partir des techniques de l'imagerie fonctionnelle du cerveau. Les exercices de programmation prévus utiliseront les données d'expérimentations en cours. Conditions préalables : GL/CSLA/ITEC 2620 3.00 plus six crédits au niveau 3000 et six crédits au niveau 4000 en Psychologie ou la permission du professeur.

Language of Instruction: French

Cross-listed to: GL/CSLA 4635 3.00 and GL/ITEC 4635 3.00 and GL/PSYC 4635 3.00

GL/CSLA 4640 3.00 Computer Networks. This course studies ISDN (Integrated Service Digital Network); the ATM (Asynchronous Transfer Mode) Protocol Reference Model; Internet and its networking protocol TCP/IP (Transmission Control Protocol/Internet Protocol); transfer of multimedia content; packet and data switching; gateways and network interconnections. Prerequisite: GL/CSLA 4625 3.00. Degree credit exclusion: GL/COSC 4520 3.00.

Cross-listed to: GL/CSLA 4640 3.00 and GL/ITEC 4640 3.00

GL/CSLA 4645 3.00 Introduction to Bioinformatics A. The course introduces students to elements of computational molecular biology such as nucleotides, amino acids, DNA, proteins, transcription and translation. We will present DNA alignment algorithms such as pair wise alignment, local and global, as well as multiple alignments. The students will use the Internet to access biological databases and learn how these can be used for the molecular structure prediction. Prerequisite: GL/CSLA/ITEC 2620 3.00. Degree credit exclusions: GL/COSC/ITEC 4010 3.00 (Fall/Winter 2001-2002 and Fall/Winter 2002-2003).

Cross-listed to: GL/CSLA 4645 3.00 and GL/ITEC 4645 3.00

GL/CSLA 4647 3.00 Introduction to Bioinformatics B. The course introduces students to the use of Perl language for bioinformatics: to represent and manipulate DNA sequences, to build restriction maps using regular expressions to simulate the DNA mutations, to generate random DNA. We will present the implementation in Perl of data structures and algorithms for text processing that are used in bioinformatics. Prerequisite: GL/CSLA/ITEC 2620 3.00.

Cross-listed to: GL/CSLA 4647 3.00 and GL/ITEC 4647 3.00

GL/CSLA 4700 3.00 Programmation Logique (PROLOG). Ce cours est une introduction à la programmation logique et à la programmation logique par contraintes. Le langage de programmation PROLOG est présenté (prédicats prédéfinis, retour arrière, "coupure" etc.) et sont discuté divers techniques de programmation, des éléments de méta-interpréteurs en PROLOG et des applications. Condition préalable : GL/CSLA 1630 3.00. Cours incompatible : GL/COSC 4700 6.00.

Language of Instruction: French

GL/CSLA 4710 3.00 Éléments d'intelligence artificielle. Le cours fait un tour d'horizon des principaux problèmes actuels de ce domaine en pleine expansion; les concepts de base et les méthodes de l'intelligence artificielle, représentation des connaissances, inférence, systèmes experts, raisonnements et incertitude, compréhension du langage naturel etc. Condition préalable : GL/CSLA 4700 3.00.

Language of Instruction: French

GL/CSLA 4715 3.00 Management of Uncertainty in Expert System Design. This course is a self-contained presentation of state-of-the-art methodologies and approaches to management of uncertainty in expert systems design. It deals with knowledge representation, search, inference

and reasoning under uncertainty issues. Prerequisites: GL/CSLA 3411 3.00 or SC/COSC 2011 3.00 and GL/CSLA 4700 3.00 or SC/COSC 4402 3.00. Degree credit exclusion: GL/COSC 4710 3.00.

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Creative Writing – Arts

Program Office:
210 Vanier College, 416-736-5910
Web Address:
http://www.yorku.ca/human/undergrad/Programs/CreativeWriting/
Program Coordinator:
P. Uppal
Affiliated Faculty:
S. Swan, R. Teleky, P. Uppal

Creative writing is a delayed-entry Honours BA program, and may be pursued as a single major, double major or minor. Students who wish to apply for admission to the program are strongly advised to take one of the following courses among their first 30 University credits:

- AS/EN 1200 6.00
- AS/EN 1250 3.00
- AS/EN 1300 6.00
- AS/EN 1350 3.00
- AS/HUMA 1100 9.00
- AS/HUMA 1105 9.00
- AS/HUMA 1170 9.00
- AS/HUMA 1980 9.00

Note: A maximum of six credits from the courses listed above will count for creative writing major or minor credit.

Students wishing to major or minor in the Creative Writing Program should apply for admission to AS/HUMA 2900 9.00 at the end of their first year of study. For admission to AS/HUMA 2900 9.00 students should submit a 10-15 page portfolio of poetry and prose fiction (fragments of stories will suffice) by April. Students will be eligible to enrol in AS/HUMA 2900 9.00 only after portfolios have been accepted by the Creative Writing Committee.

Students must successfully complete AS/HUMA 2900 9.00 or its equivalent before applying for admission to the Creative Writing Program as a major or minor. Students taking AS/HUMA 2900 9.00 who wish to obtain full admission to the program as a major or minor should submit a 15-20 page portfolio of poetry and prose fiction following completion of AS/HUMA 2900 9.00. Students may also apply for full admission after their first 48 credits and before completion of their first 78 credits by presenting a portfolio containing work in both poetry and prose fiction as evidence of writing experience to that provided by AS/HUMA 2900 9.00. In either case, applicants must also fill out a Creative Writing Program application form. Acceptance of the portfolio by the Creative Writing Committee constitutes full admission to the Honours Major or Honours Minor program.

It is strongly recommended that students in the Honours BA program combine creative writing with another major or minor. Students admitted to the Honours Major or Honour Minor program should attend the advising session provided by the Creative Writing Program, which is normally held in the spring. Please consult the program office for more information.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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Criminology – Arts

Program Office:
S741 Ross Building, 416-736-2100, ext. 66272
Web Address:
http://www.arts.yorku.ca/sosc/criminology/
Program Coordinator:
G. Kellough, Social Science
Affiliated Faculty:
M. Beare, Sociology; D. Brock, Sociology; S. Dimock, Philosophy; J. Gibbons, Social Science/Sociology; L. Green, Philosophy/Osgoode; D.C. Hay, History/Osgoode; L. Jacobs, Social Science; G. Kellough,

Social Science; D. Martin, Osgoode; P. Oliver, History; A. Pratt, Social Science/Sociology; A. Propper, Sociology; R. Schuller, Psychology; J. Sheptycki, Social Science; L. Visano, Atkinson/Social Science; R. Weisman, Social Science; K. White, Social Science

The interdisciplinary Program in Criminology focuses on the analysis of crime, criminality, social control and regulation and the criminal justice system. As well as providing students with a thorough grounding in the history, debates, issues and critiques of the field, the program curriculum is intended to encourage a critical interdisciplinary analysis of how crime, criminality and the criminal justice system have been constructed, represented and administered legally, politically, economically and culturally.

Students in the program are required to complete a series of core program courses that focus on areas or topics central to criminology, such as criminal law and procedure, criminological theory, the criminal justice system, policing, the court system, penology, corrections and alternative forms of justice. In addition to the program core, criminology majors select courses from a variety of departments and disciplines which address topics, issues and concerns relevant to criminology, and which allow students to explore particular stands of criminology based on their individual interests.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

Courses in Criminology

Note: For purposes of meeting program requirements, all foundations courses will count as six credits towards the major.

AS/CRIM 1650 9.00 Introduction to Criminology. This course is an introduction to criminology through a critical investigation of the processes and structures that designate criminality and delinquency; the relationship between control and consent; the administration of justice, and; the contexts (cultural, political and economic) for legal contests. (This course is affiliated with McLaughlin College.) Degree credit exclusion: AS/SOCI 1011 6.00. Note: Students must achieve a grade of at least B (6.0) in this course (or equivalent) in order to be permitted to continue as a major in criminology, or to pursue additional criminology courses at the 2000, 3000 and 4000 levels. Under exceptional circumstances, non-majors who have not obtained a grade of at least B (6.0) may apply for special consideration to enrol in a criminology course for which AS/CRIM/SOSC 1650 9.00 (or equivalent) is a prerequisite. This application should be made to the Criminology Program coordinator.

Cross-listed to: AS/CRIM 1650 9.00 and AS/SOSC 1650 9.00

AS/CRIM 2650 6.00 Theories of Criminology. This course introduces students to competing theories of criminology and the history of criminology as a field of study. Biological, psychological and sociological theories of crime are compared and contrasted, as well as contemporary theories including symbolic interactionism and critical criminology. Prerequisite: AS/CRIM/SOSC 1650 9.00 (or equivalent), with a grade of at least B (6.0).

Cross-listed to: AS/CRIM 2650 6.00 and AS/SOSC 2650 6.00

AS/CRIM 2651 3.00 Criminal Law and Procedure. This course is an introduction to the fundamental and competing principles of jurisprudence and the Criminal Code of Canada. Consideration is given to the various steps in the judicial system, including investigation, indictment, adjudication, sentencing and corrections. Prerequisite: AS/CRIM/SOSC 1650 9.00 (or equivalent), with a grade of at least B (6.0).

Cross-listed to: AS/CRIM 2651 3.00 and AS/SOSC 2651 3.00

AS/CRIM 3651 3.00 Policing and the Community. This course moves from the historical roots of Canadian policing into the present. Canada's unique policing structure is discussed and compared with international policing structures. Political and economic forces behind policing and the symbolism of the police are also considered. Prerequisite: AS/CRIM/SOSC 1650 9.00 (or equivalent), with a grade of at least B (6.0).

Cross-listed to: AS/CRIM 3651 3.00 and AS/SOCI 3651 3.00

AS/CRIM 3652 3.00 Corrections and Alternative Forms of Justice. This course explores the historical roots of corrections and alternative forms of justice. Topics include various philosophies of punishment and social control, as well as the influences that have helped to determine penal policies and practices, particularly in Canada. Prerequisite: AS/CRIM/SOSC 1650 9.00 (or equivalent), with a grade of at least B (6.0).

Cross-listed to: AS/CRIM 3652 3.00 and AS/SOCI 3652 3.00

AS/CRIM 4650 6.00 Criminology Honours Seminar. This course engages in an in-depth analysis of a particular topic or theme relevant to criminology. The focus of the course will vary from year to year, depending upon student and faculty interest in specific topics. Prerequisite: AS/CRIM/SOSC 1650 9.00 (or equivalent), with a grade of at least B (6.0).

Cross-listed to: AS/CRIM 4650 6.00 and AS/SOSC 4650 6.00

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Dance – Fine Arts

Department Office:
240 Joan and Martin Goldfarb Centre for Fine Arts, 416-736-5137
Chair of the Department:
P. Reed Doob
Professors:
P. Reed Doob, S. Odom, H. Small, M.J. Warner
Associate Professors:
A.R. Blewchamp, K. Bowes-Sewell, N. De Shane, N.S. Fisher-Stitt, D. Krasnow, M.E. Manley
Assistant Professors:
C. Anderson, D. Callison, S. Porter, C. Wootten
Adjunct Professors:
D. Grossman, G. Lum, M. Thakkar

Programs of Study

The Department of Dance offers a comprehensive education in dance as a performing art leading to a BA (90 credits), BFA Honours (120 credits), or BA Specialized Honours (120 credits) degree. Throughout the program BFA students participate intensively in studio courses involving ballet and modern technique, conditioning for dancers, improvisation, music, composition/choreography, repertory, dance production, pedagogy and somatic education. Special performance opportunities are available through the York Dance Ensemble. Critical, analytical and writing skills are fully developed in the areas of dance studies and dance history, movement analysis, kinesiology and injury prevention, dance writing, dance ethnology and anthropology. BA Specialized Honours majors focus on dance studies, examining the role of dance in human societies, and in their final year undertake a capstone project. The BA Specialized Honours is particularly appropriate for those who wish to undertake a double major combining dance with another field. The program is enriched by distinguished guest lecturers, master teachers and choreographers, performances, films, workshops and the integration of new technologies. The emphasis in the department is to prepare people for careers and graduate work in dance and other fields.

A placement evaluation is required of all entering BFA students. Applicants for that degree must have had some training in either ballet or modern dance. See details in section on Faculty of Fine Arts evaluations. Advancement to second, third and fourth level dance technique courses is by juried audition only.

Through the joint five-year National Ballet School/York University diploma degree program students can combine study towards a BFA Honours in dance with the Teacher Training Program at the National Ballet School. Students interested in this joint program will be expected to declare their interest in the first year of study.

Dance majors are eligible to apply for the Concurrent Program of the Faculty of Education at the end of the first year of study.

A dance minor program is available for students who are majoring in another discipline in the Faculties of Arts, Environmental Studies, Fine Arts or Pure and Applied Science. The minor requires the equivalent of 30 credits in dance theory and practice.

Courses in Dance

FA/DANC 1205 2.25 Ballet Technique. Introductory course in ballet. Emphasizes integrated movement, alignment, classical ballet vocabulary, artistic expression, as well as the creative process. Required of all dance majors. Five hours. Corequisite: FA/DANC 1215 2.25.

FA/DANC 1206 2.25 Ballet Technique. Introductory course in ballet. Emphasizes integrated movement, alignment, classical ballet vocabulary, artistic expression, as well as the creative process. Required of all dance majors. Five hours. Prerequisite: FA/DANC 1205 2.25. Corequisite: FA/DANC 1216 2.25.

FA/DANC 1207 2.25 Ballet Technique. A continuation of work begun in FA/DANC 1205 2.25 in ballet. Emphasizes integrated movement, alignment, classical ballet vocabulary, artistic expression, as well as the creative process. Five hours. Note: Open by permission of the department only.

FA/DANC 1208 2.25 Ballet Technique. A continuation of work begun in FA/DANC 1206 2.25 in ballet. Emphasizes integrated movement, alignment, classical ballet vocabulary, artistic expression as well as the creative process. Five hours. Note: Open by permission of the department only.

FA/DANC 1215 2.25 Modern Technique. Introductory course in modern dance. Emphasizes integrated movement, alignment, modern dance vocabulary, artistic expression, as well as the creative process. Required of all dance majors. Five hours. Corequisite: FA/DANC 1205 2.25.

FA/DANC 1216 2.25 Modern Technique. Introductory course in modern dance. Emphasizes integrated movement, alignment, modern dance vocabulary, artistic expression, as well as the creative process. Required of all dance majors. Five hours. Prerequisite: FA/DANC 1215 2.25. Corequisite: FA/DANC 1206 2.25.

FA/DANC 1217 2.25 Modern Technique. A continuation of work begun in FA/DANC 1215 2.25 in modern dance. Emphasizes integrated movement, alignment, modern dance vocabulary, artistic expression, as well as the creative process. Five hours. Note: Open by permission of the department only.

FA/DANC 1218 2.25 Modern Technique. A continuation of work begun in FA/DANC 1216 2.25 in modern dance. Emphasizes integrated movement, alignment, modern dance vocabulary, artistic expression, as well as the creative process. Five hours. Note: Open by permission of the department only.

FA/DANC 1220 1.50 Improvisation. An introduction to theory and practice in improvisation with a focus on the creative process in dance. Required of all dance majors. Open only to dance majors and minors. Three hours. Corequisite: Enrolment in dance technique.

FA/DANC 1270 3.00 Dance Production. An introduction to the fundamentals of lighting design and stagecraft for dance, this course is taught with FA/THEA 1100 3.00 Stagecraft I. Lighting design, costume design, stage management, sound, front of house management or publicity may be covered. Course includes crew work on department productions. Theatre majors and dance majors attend the same lecture and separate labs. Required of all dance majors. Open only to dance majors and minors. Three hour lecture or lab each term. Degree credit exclusions: FA/THEA 1100 3.00, FA/THEA 1510 3.00.

FA/DANC 1320 1.50 Conditioning for Dancers. A practical introduction to the fundamentals of physical conditioning for dancers. Injury prevention will be emphasized through applications of imagery, release, alignment, stretch and strength techniques and movement re-education. Required of all first-year dance majors. Open only to dance majors and minors. Three hours. Corequisite: Enrolment in dance technique.

FA/DANC 1340 3.00 Introduction to Dance Studies. An exploration of contemporary themes and issues in dance using current approaches to research and theory. Required of all dance majors and minors. Four hours. Open to non-majors with departmental permission.

FA/DANC 1500 6.00 The Dance Experience (Lecture/Studio). Studio and theoretical work in a variety of movement techniques especially designed for the non-major student. Not open to dance majors. Two hours studio, one and one-half hours lecture. Note: May include improvisations, presentation of individual or group projects, reading, films, guest speakers and attendance at live performances. Audition not required.

FA/DANC 2205 2.25 Ballet Technique. Ballet technique for dance majors. Ongoing training develops artistic expression, classical ballet vocabulary, musicality and performance skills. Required of dance majors seeking the BFA degree. Prerequisite: FA/DANC 1206 2.25 and permission of the department. Corequisite: FA/DANC 2215 2.25.

FA/DANC 2206 2.25 Ballet Technique. Ballet technique for dance majors. Ongoing training develops artistic expression, classical ballet vocabulary, musicality and performance skills. Required of dance majors seeking the BFA degree. Five hours. Prerequisite: FA/DANC 2205 2.25. Corequisite: FA/DANC 2216 2.25.

FA/DANC 2207 2.25 Ballet Technique. A continuation of work begun in FA/DANC 2205 2.25. Ongoing training in ballet to develop artistic expression, classical ballet vocabulary, musicality and performance skills. Five hours. Note: Open by permission of the department only.

FA/DANC 2208 2.25 Ballet Technique. A continuation of work begun in FA/DANC 2206 2.25. Ongoing training in ballet to develop artistic expression, classical ballet vocabulary, musicality and performance skills. Five hours. Note: Open by permission of the department only.

FA/DANC 2215 2.25 Modern Technique. Modern dance technique for dance majors. Ongoing training develops artistic expression, modern dance vocabulary, musicality and performance skills. Required of dance majors seeking the BFA degree. Five hours. Prerequisite: FA/DANC 1216 2.25 and permission of the department. Corequisite: FA/DANC 2205 2.25.

FA/DANC 2216 2.25 Modern Technique. Modern dance technique for dance majors. Ongoing training develops artistic expression, modern dance vocabulary, musicality and performance skills. Required of dance majors seeking the BFA degree. Five hours. Prerequisite: FA/DANC 2215 2.25. Corequisite: FA/DANC 2206 2.25.

FA/DANC 2217 2.25 Modern Technique. A continuation of work begun in FA/DANC 2215 2.25. Ongoing training in modern to develop artistic expression, modern dance vocabulary, musicality and performance skills. Five hours. Note: Open by permission of the department only.

FA/DANC 2218 2.25 Modern Technique. A continuation of work begun in FA/DANC 2216 2.25. Ongoing training in modern to develop artistic expression, modern dance vocabulary, musicality and performance skills. Five hours. Note: Open by permission of the department only.

FA/DANC 2225 3.00 Dance Composition I. Introductory study of the basic principles of dance composition; both practical movement studies and analytic/critical work will be employed to explore the creative process and to begin to develop the craft and skills of choreography. Required of all dance majors. Four and one-half hours. Prerequisite: FA/DANC 1205 2.25, FA/DANC 1206 2.25, FA/DANC 1215 2.25 and FA/DANC 1216 2.25 or permission of the instructor. Corequisite: Current enrolment in dance technique, or permission of the instructor.

FA/DANC 2226 3.00 Dance Composition II. Further study of the basic principles of dance composition; development of studies toward completed works, and examination of production and performance as it relates to choreography. Continued analytic/critical work of choreographed dances. Four and one-half hours. Prerequisite: FA/DANC 2225 3.00. Corequisite: Current enrolment in dance technique or permission of the instructor.

FA/DANC 2320 3.00 Dance Kinesiology. An introduction to the field of dance kinesiology, and the analysis of movement from a scientific perspective. Correct and efficient movement patterns for dance technique are discussed through the examination of the muscular/skeletal system and its functions. Study includes identification of common muscle imbalances that impede good alignment, and the optimal execution of dance technique. Required of all dance majors. Required of all Honours BFA Dance majors. Open to non-majors. Prerequisite or corequisite: One of SC/NATS 1610 6.00, SC/NATS 1620 6.00, SC/NATS 1650 6.00, AS/SC/KINE 2031 3.00.

FA/DANC 2340 3.00 Dance History. An examination of the religious, social, cultural, political and performative functions of dance in Western and non-Western history. Required of all dance majors and minors. Four hours. Open to non-majors with departmental permission.

FA/DANC 2355 3.00 Music for Dancers I. Combined theoretical studies and studio work which emphasize an integrated approach to music and dance. Development of skills relating to rhythm, music notation, musical form and style, through movement and library projects and listening assignments. Required of all dance majors. Open to non-majors by permission of the course director. Three hours.

FA/DANC 2510A 3.00 Introduction to World Dance Practices: Sub-Saharan Africa. Study of selected dances of west, central, east and southern Africa such as Ghanaian social dance and Yoruba ritual, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or permission of the instructor; more advanced students will be placed in FA/DANC 3510A 3.00, Intermediate African Dance.

FA/DANC 2510B 3.00 Introduction to World Dance Practices: North Africa, Middle East, Central Asia and Diaspora. Study of selected dances from Morocco, Egypt, Israel, Iran and Azerbaijan, including belly dancing, folk and dervish dances, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or permission of the instructor; more advanced students will be placed in FA/DANC 3510B 3.00, Intermediate North African and Middle Eastern Dance.

FA/DANC 2511A 3.00 Introduction to World Dance Practices: Sub-Saharan Africa. Sub-Saharan Africa and Diaspora: study of selected dances of west, central, east and southern Africa such as Ghanaian social dance and Yoruba ritual, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or permission of the instructor; more advanced students will be placed in FA/DANC 3510A 3.00, Intermediate African Dance.

FA/DANC 2511B 3.00 Introduction to World Dance Practices: North Africa, Middle East, Central Asia and Diaspora. North Africa, Middle East, Central Asia and Diaspora: study of selected dances from Morocco, Egypt, Israel, Iran and Azerbaijan, including belly dancing, folk and dervish dances, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or permission of the instructor; more advanced students will be placed in FA/DANC 3510B 3.00, Intermediate North African and Middle Eastern Dance.

FA/DANC 2540 3.00 Dance and Popular Culture. The 20th century produced a mass market for dances and dance images that reflected and changed social norms and expectations. This course investigates, interprets and analyzes the position of 20th-century popular dance entertainment in Western culture. Open to fine arts majors and minors, or by permission of the department.

FA/DANC 3205 1.50 Ballet Technique. Ballet technique for dance majors. Ongoing training develops artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Prerequisite: FA/DANC 2206 2.25, and permission of the department. Corequisite: FA/DANC 3215 3.00.

FA/DANC 3206 1.50 Ballet Technique. Ballet technique for dance majors. Ongoing training develops artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Prerequisite: FA/DANC 3205 1.50. Corequisite: FA/DANC 3216 3.00.

FA/DANC 3207 1.50 Ballet Technique. A continuation of work begun in FA/DANC 3205 1.50. Ongoing training in ballet to develop artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Note: Open by permission of the department only.

FA/DANC 3208 1.50 Ballet Technique. A continuation of work begun in FA/DANC 3206 1.50. Ongoing training in ballet to develop artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Note: Open by permission of the department only.

FA/DANC 3215 3.00 Modern Technique. Modern dance technique for dance majors. Ongoing training develops artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Prerequisite: FA/DANC 2216 2.25, and permission of the department.

FA/DANC 3216 3.00 Modern Technique. Modern dance technique for dance majors. Ongoing training develops artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Prerequisite: FA/DANC 3215 3.00.

FA/DANC 3217 3.00 Modern Technique. A continuation of work begun in FA/DANC 3215 3.00. Ongoing training in modern to develop artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Note: Open by permission of the department only.

FA/DANC 3218 3.00 Modern Technique. A continuation of work begun in FA/DANC 3216 3.00. Ongoing training in modern to develop artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Note: Open by permission of the department only.

FA/DANC 3220 3.00 Choreography. Selected projects in choreography with continued work in structure and forms, and an increased focus on development of individual interests and style. Continued work in production, performance and criticism as related to choreography. Four and one-half hours. Prerequisite: A grade of B+ or higher in FA/DANC 2226 3.00 or permission of the course director. Corequisite: Current enrolment in dance technique.

FA/DANC 3235 3.00 Repertory/Reconstruction I. The first course in the study and performance of original or reconstructed choreographic works in a rehearsal and presentation setting. Rehearsal time outside of the course meetings will be scheduled close to performance dates. Four and one-half hours. Corequisite: Current enrolment in dance technique.

FA/DANC 3236 3.00 Repertory II. The second course in the study and performance of original or reconstructed choreographic works in a pre-professional rehearsal and presentation setting. The course provides opportunity to work closely with an experienced choreographer or recreator and to bring the work to a performance level. Rehearsals outside of the course meetings will be scheduled close to performance dates. Four and one-half hours. Corequisite: Current enrolment in dance technique.

FA/DANC 3240 3.00 Dance Ensemble Apprenticeship. An enriched performance/production experience for highly motivated third-year dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and out-of-town performances. Ensemble apprentices will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. Students in FA/DANC 3240 are expected to continue with FA/DANC 4245/4246 Dance Ensemble in the following year. A minimum of six hours per week, both fall and winter terms. Prerequisite: Admission is by juried audition. Corequisites: Performers must be enrolled in FA/DANC 3205 1.50, FA/DANC 3206 1.50, FA/DANC 3215 3.00 and FA/DANC 3216 3.00.

FA/DANC 3240 6.00 Dance Ensemble Apprenticeship. An enriched performance/production experience for highly motivated third-year dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and out-of-town performances. Ensemble apprentices will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. Students in FA/DANC 3240 are expected to continue with FA/DANC 4245/4246 Dance Ensemble in the following year. A minimum of six hours per week, both fall and winter terms. Prerequisite: Admission is by juried audition. Corequisites: Performers must be enrolled in FA/DANC 3205 1.50, FA/DANC 3206 1.50, FA/DANC 3215 3.00 and FA/DANC 3216

3.00. With permission of the instructor students may take this course for six credits.

FA/DANC 3280 3.00 Jazz Dance I. Introduction and practice of jazz dance technique reflecting North American culture. Styles of jazz dance that may be covered in different years include Broadway, funk, street lyrical, hip hop and theatre dance. Open to non-majors with permission of the instructor.

FA/DANC 3320 3.00 Somatic Education. Experiential and theoretical study of selected approaches to somatic education, such as Bartenieff Fundamentals, Feldenkrais Movement Awareness, Alexander Technique and Ideokinesis and Pilates-based exercise. Studio/lecture, projects, demonstrations. Four hours. Prerequisite or corequisite: One of SC/NATS 1610 6.00, SC/NATS 1620 6.00, SC/NATS 1650 6.00, AS/SC/KINE 2031 3.00.

FA/DANC 3321 3.00 Prevention and Care of Dance Injuries. An examination of prevention, recognition and treatment of dance injuries. Specific study of proper versus improper technique and its correlation to resultant injuries. Follow-up remedial procedures and therapeutic modalities to enhance healing are also studied. May be offered in extended or normal format. Prerequisite or corequisite: One of: SC/NATS 1610 6.00, SC/NATS 1620 6.00, SC/NATS 1650 6.00, AS/SC/KINE 2031 3.00 and FA/DANC 2320 3.00.

FA/DANC 3330 3.00 The Canadian Dance Mosaic. This course examines dance as a human phenomenon that both reflects and shapes culture. Through readings, films, lectures, discussions and guest artists, students are introduced to a variety of dance forms from different traditions represented in Canadian society. The course examines the place of dance in its own cultural setting as well as approaching issues facing dance in Canada as a multi-ethnic society. Open to non-majors. Two hours lecture, one hour lab. Degree credit exclusions: FA/DANC 2390 3.00 taken in 1991-1992 or 1993-1994, FA/DANC 3390 3.00 taken in 1994-1995, FA/DANC 2330 3.00 taken in 1995-1996.

FA/DANC 3370 3.00 Dance Pedagogy. Methods and materials associated with teaching dance technique to the adolescent and the adult. The lecture/studio portion of the course is augmented by assisting or observing a series of dance classes. Four hours plus practicum. Prerequisite or corequisite: One of SC/NATS 1610 6.00, SC/NATS 1620 6.00, SC/NATS 1650 6.00 or AS/SC/KINE 2031 3.00.

FA/DANC 3380 3.00 Dance Therapy. An introduction for the upper-level student to the professional field of dance therapy. The intention is to develop a basic understanding of the interrelationship between psychological states and their body expression. Lecture/demonstrations, in-class presentations and a clinical tour. Three hours. Prerequisites: AS/PSYC 1010 6.00 or AS/PSYC 2110 3.00 or AS/PSYC 2130 3.00 or equivalents, or permission of the course director.

FA/DANC 3510A 3.00 Intermediate World Dance Practices: Sub-Saharan Africa. Study of selected dances of west, central, east and southern Africa such as Ghanaian social dance and Yoruba ritual, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or FA/DANC 2510 3.00 or FA/DANC 2511 3.00 or permission of the instructor.

FA/DANC 3510B 3.00 Intermediate World Dance Practices: North Africa, Middle East, Central Asia and Diaspora. Study of selected dances from Morocco, Egypt, Israel, Iran and Azerbaijan, including belly dancing, folk and dervish dances, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or FA/DANC 2510 3.00 or FA/DANC 2511 3.00 or permission of the instructor.

FA/DANC 3511A 3.00 Intermediate World Dance Practices: Sub-Saharan Africa. Sub-Saharan Africa and Diaspora: study of selected dances of west, central, east and southern Africa such as Ghanaian social dance and Yoruba ritual, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/

discussion. Prerequisite: FA/DANC 1500 6.00 or FA/DANC 2510 3.00 or FA/DANC 2511 3.00 or permission of the instructor.

FA/DANC 3511B 3.00 Intermediate World Dance Practices: North Africa, Middle East, Central Asia and Diaspora. Study of selected dances from Morocco, Egypt, Israel, Iran and Azerbaijan, including belly dancing, folk and dervish dances, with attention to their cultural contexts. Different regions selected for study in different years. Open to non-majors. Studio/discussion. Prerequisite: FA/DANC 1500 6.00 or FA/DANC 2510 3.00 or FA/DANC 2511 3.00 or permission of the instructor.

FA/DANC 3530 3.00 Ecstatic Dance: From Rituals to Raves. This course will examine various cultures where ecstatic dance is vital to the life of the community. The significance of ecstatic dance in today's North American society will be observed through postmodern ecstatic dance rituals such as raves. Open to non-majors. Prerequisite for non-majors: FA/DANC 1500 6.00 The Dance Experience or permission by the department.

FA/DANC 3550A 3.00 World Dance Studies: Sub-Saharan Africa I. Survey of dance forms of Sub-Saharan Africa. Study of factors influencing the development of dance, its social, religious and/or political functions, aesthetic standards, cultural significance and historical roots. Different regions are selected for study in different years. Open to non-majors. Lecture/studio. Three hours.

FA/DANC 3550B 3.00 World Dance Studies: North Africa, Middle East, Central Asia and Diaspora I. Survey of dance forms of North Africa, Middle East, Central Asia and Diaspora. Study of factors influencing the development of dance, its social, religious and/or political functions, aesthetic standards, cultural significance and historical roots. Different regions are selected for study in different years. Open to non-majors. Lecture/studio. Three hours.

FA/DANC 3551A 3.00 World Dance Studies: Sub-Saharan Africa II. Survey of dance forms of Sub-Saharan Africa. A continuation of FA/DANC 3550A 3.00. Study of factors influencing the development of dance, its social, religious and/or political functions, aesthetic standards, cultural significance and historical roots. Different regions are selected for study in different years. Open to non-majors. Lecture/studio. Three hours.

FA/DANC 3551B 3.00 World Dance Studies: North Africa, Middle East, Central Asia and Diaspora II. Survey of dance forms of North Africa, Middle East, Central Asia and Diaspora. A continuation of FA/DANC 3550B 3.00. Study of factors influencing the development of dance, its social, religious and/or political functions, aesthetic standards, cultural significance and historical roots. Different regions are selected for study in different years. Open to non-majors. Lecture/studio. Three hours.

FA/DANC 4205 1.50 Ballet Technique. Ballet technique for dance majors. Ongoing training refines artistic expression classical ballet vocabulary, musicality and athleticism. Optional for all dance majors. Four hours. Prerequisites: FA/DANC 3206 1.50 and permission of the department.

FA/DANC 4206 1.50 Ballet Technique. Ballet technique for dance majors. Ongoing training refines artistic expression, classical ballet vocabulary, musicality and athleticism. Optional for all dance majors. Four hours. Prerequisite: FA/DANC 4205 1.50.

FA/DANC 4207 1.50 Ballet Technique. A continuation of work begun in FA/DANC 4205 1.50. Ongoing training in ballet to refine artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Note: Open by permission of the department only.

FA/DANC 4208 1.50 Ballet Technique. A continuation of work begun in FA/DANC 4206 1.50. Ongoing training in ballet to refine artistic expression, classical ballet vocabulary, musicality and athleticism. Four hours. Note: Open by permission of the department only.

FA/DANC 4215 3.00 Modern Technique. Modern dance technique for dance majors. Ongoing training refines artistic expression, modern dance vocabulary, musicality and athleticism. Optional for all dance majors. Six

hours. Prerequisites: FA/DANC 3216 3.00 and permission of the department.

FA/DANC 4216 3.00 Modern Technique. Modern dance technique for dance majors. Ongoing training refines artistic expression, modern dance vocabulary, musicality and athleticism. Optional for all dance majors. Six hours. Prerequisite: FA/DANC 4215 3.00.

FA/DANC 4217 3.00 Modern Technique. A continuation of work begun in FA/DANC 4215 3.00. Ongoing training in modern to refine artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Note: Open by permission of the department only.

FA/DANC 4218 3.00 Modern Technique. A continuation of work begun in FA/DANC 4216 3.00. Ongoing training in modern to refine artistic expression, modern dance vocabulary, musicality and athleticism. Six hours. Note: Open by permission of the department only.

FA/DANC 4220 3.00 Choreography. Selected projects in choreography with an emphasis on interdisciplinary productions, and continued work on structure and form. Increased focus on the development of individual interests and style in choreography. Designed for highly motivated creative individuals. The course requires students to commit themselves to pre-performance and performance schedules related to productions of their work. Lectures/presentations/performances. Four and one-half hours. Prerequisites: For dance majors, a grade of B+ or higher in FA/DANC 2226 3.00 and permission of the course director. This course is open to other qualified third or fourth year Fine Arts students by permission of the course director only.

FA/DANC 4221 3.00 Interactive Dance Studio: Explorations in Electronically Mediated Performance. This interdisciplinary studio course explores interactive dance contexts. Through the creation of electronically mediated performance environments, students in dance and new media art collaborate to merge movement and technology. Prerequisite: FA/FACS 3931 3.00 or FA/DANC 3220 3.00 or FA/DANC 4220 3.00 or permission of the course director.

Cross-listed to: FA/DANC 4221 3.00 and FA/FACS 4932 3.00

FA/DANC 4245 3.00 Dance Ensemble I. An enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and out-of-town performances. Ensemble members will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit by permission of the course director. Students in FA/DANC 4245 3.00 are expected to continue with FA/DANC 4246 3.00. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: Admission is by juried audition. Open to other fine arts majors by permission of the course director. Corequisite: Performers must be enrolled in FA/DANC 4205 1.50 and FA/DANC 4215 3.00.

FA/DANC 4245 4.50 Dance Ensemble I. An enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and out-of-town performances. Ensemble members will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit by permission of the course director. Students in FA/DANC 4245 4.50 are expected to continue with FA/DANC 4246 4.50. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: Admission is by juried audition. Open to other fine arts majors by permission of the course director. Corequisite: Performers must be enrolled in FA/DANC 4205 1.50 and FA/DANC 4215 3.00.

FA/DANC 4245 6.00 Dance Ensemble I. An enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and out-of-town performances. Ensemble members

will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit by permission of the course director. Students in FA/DANC 4245 6.00 are expected to continue with FA/DANC 4246 6.00. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: Admission is by juried audition. Open to other fine arts majors by permission of the course director. With Permission of the instructor, students may take this course for six credits. Corequisite: Performers must be enrolled in FA/DANC 4205 1.50 and FA/DANC 4215 3.00.

FA/DANC 4246 3.00 Dance Ensemble II. The continuation of FA/DANC 4245 3.00, an enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and possible out-of-town performances. Ensemble members will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit, by permission of the course director. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: FA/DANC 4245 3.00/6.00/9.00. Corequisite: Performers must be enrolled in FA/DANC 4206 1.50 and FA/DANC 4216 3.00.

FA/DANC 4246 4.50 Dance Ensemble II. The continuation of FA/DANC 4245 4.50, an enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and possible out-of-town performances. Ensemble members will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit, by permission of the course director. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: FA/DANC 4245 3.00/4.50/6.00 and permission of the instructor. Corequisite: Performers must be enrolled in FA/DANC 4206 1.50 and FA/DANC 4216 3.00.

FA/DANC 4246 6.00 Dance Ensemble II. The continuation of FA/DANC 4245 3.00, an enriched performance/production experience for highly motivated upper-level dance majors wishing to concentrate on the performance and/or production areas. Students are required to commit to an intensive schedule, including evening rehearsals and possible out-of-town performances. Ensemble members will focus on one or more aspects of dance company activity, which include performance, choreography, tour management, production support and publicity. This course may be repeated for credit, by permission of the course director. With permission of the instructor, students may take this course for six credits. Due to the heavy rehearsal schedule, there is a minimum of 12 hours per week. Prerequisite: FA/DANC 4245 3.00/6.00/9.00 and permission of the instructor. Corequisite: Performers must be enrolled in FA/DANC 4206 1.50 and FA/DANC 4216 3.00.

FA/DANC 4250A 3.00 The Choreographic Process. Selected projects in choreography with an emphasis on movement research and the exploration of a broad range of creative approaches to dance. Continued work on issues of composition and form as well as increased focus on the development of individual choreographic interests. Creation of innovative choreographic material is the primary focus. Issues of performance, production and criticism as related to choreography is also addressed. Prerequisite: FA/DANC 2226 3.00.

FA/DANC 4280 3.00 Jazz Dance II. A continuation of work begun in FA/DANC 3280 3.00 Jazz Dance I, with emphasis on artistic expression. Styles of jazz dance that may be covered are Broadway, funk, street, lyrical, hip hop and theatre dance. A theoretical component will involve the study of historical and cultural aspects of the North American jazz dance vernacular. Four Hours. Prerequisite: FA/DANC 3280 3.00 Jazz Dance I or permission of the instructor. Open to non-majors.

FA/DANC 4285 3.00 Indian Dance: Movement, Repertoire and Fusion. An introduction to the practice and theory of classical East Indian dance with reference to various styles. The course presents an integrated approach to rhythmics and movements of Indian dance for those with previous movement training. Open to non-majors with permission of the course director. Four hours studio lab/lecture per week. Prerequisites: FA/DANC 1206 2.25 and FA/DANC 1216 2.25, or prior training in a classical Indian music or dance form and permission of the course director. Degree credit exclusion: FA/DANC 4390C 3.00.

FA/DANC 4310 3.00 Dance Writing. This seminar focuses on reading selected historical and contemporary writing about dance, and it provides practical experience in critical, journalistic and promotional writing. Four hours. Prerequisites: FA/DANC 1340 3.00 and FA/DANC 2340 3.00 or equivalents. Open to non-majors with permission of the course director.

FA/DANC 4320 3.00 Motor Learning and Motor Control for Dance. Examines motor learning and neuromuscular patterning for dance practice. Investigates current theories of motor development through childhood and adolescence, with a particular emphasis on pedagogical and training concerns. Explores the inter-relationship of creativity and motor development in dance. Prerequisites: FA/DANC 2320 3.00 Dance Kinesiology, or consent of instructor.

FA/DANC 4330 3.00 Anthropology of Dance in Canada. A survey of classical, folk, tribal and social dance traditions within the Canadian cultural context. Open to non-majors. Four hours. Prerequisites: FA/DANC 3330 3.00 or equivalent and third- or fourth-year standing, or permission of the course director.

FA/DANC 4340 3.00 Topics in Historical or Cultural Dance Style. Practical and theoretical studies in historical or cultural dance style from a historical or ethnological perspective. The study of style in movement as it reflects a culture or a period of history is a central issue in dance scholarship. Methodologies of describing, recording and interpreting movement patterns in context are emphasized. Topics are announced each year in the spring. Open to non-majors. Four hours. Prerequisites: FA/DANC 3330 3.00 or equivalent and third- or fourth-year standing, or permission of the course director.

FA/DANC 4345 3.00 Canadian Dance History. An investigation of selected periods, people, cultural, social and political events in the development of Canadian dance during the 19th and 20th centuries. Prerequisites: FA/DANC 2340 3.00, and third- or fourth-year standing, or permission of the course director.

FA/DANC 4370 1.50 Mentoring Practicum. A course for fourth-year dance majors designed to develop practical teaching skills through mentoring and coaching entering students in the Department of Dance. Students create and implement individual programs through observation, analysis and communication. For 2002-2004 only, students entering the dance program before 2001 may opt to take this course for 1.50 credits. Prerequisites: FA/DANC 3205 1.50 and FA/DANC 3206 1.50, or FA/DANC 3215 3.00 and FA/DANC 3216 3.00; and FA/DANC 3321 3.00 or FA/DANC 3320 3.00. Corequisite: Current enrolment in dance technique.

FA/DANC 4370 3.00 Mentoring Practicum. A course for fourth-year dance majors designed to develop practical teaching skills through mentoring and coaching entering students in the Department of Dance. Students create and implement individual programs through observation, analysis and communication. Prerequisites: FA/DANC 3205 1.50 and FA/DANC 3206 1.50, or FA/DANC 3215 3.00 and FA/DANC 3216 3.00; and FA/DANC 3321 3.00 or FA/DANC 3320 3.00. Corequisite: Current enrolment in dance technique.

FA/DANC 4375 3.00 Dance and the Child I. Theories, tools and applications for teaching dance to children (ages three-six). Three hours lecture/studio, two hours practicum. Prerequisites: FA/DANC 2206 2.25, FA/DANC 2216 2.25, and AS/PSYC 2110 3.00 or AS/PSYC 3410 3.00, or permission of the course director.

FA/DANC 4376 3.00 Dance and the Child II. Theories, tools and applications for teaching dance to children (ages seven-12). Three hours lecture/studio, two hours practicum. Prerequisites: FA/DANC 2206 2.25, FA/DANC 2216 2.25, and AS/PSYC 2110 3.00 or AS/PSYC 3410 3.00, or permission of the course director.

FA/DANC 4380 3.00 Creativity Studies and the Performing Arts. An integrated course examining current theories, methodologies and findings in creativity studies literature, applying them to individual or collaborative research projects on creativity in the performing arts, with a focus on dance. Open to fourth-year fine arts majors by permission of the instructor.

FA/DANC 4400 3.00 Senior Projects. Students develop one or a series of self-directed interlinked projects, which may consist of research or field studies on a topic of interest (theoretical or creative) leading to a major piece of writing, a performance, an internship or some combination of these activities. By application to the department. Adjudication of the credit weighting of each project will be made by the department, based on the proposal. A supervisory committee may be established for projects involving more than six credits. Prerequisite: Fourth-year standing.

FA/DANC 4400 4.50 Senior Projects. Students develop one or a series of self-directed interlinked projects, which may consist of research or field studies on a topic of interest (theoretical or creative) leading to a major piece of writing, a performance, an internship or some combination of these activities. By application to the department. Adjudication of the credit weighting of each project will be made by the department, based on the proposal. A supervisory committee may be established for projects involving more than six credits. Prerequisite: Fourth-year standing.

FA/DANC 4400 6.00 Senior Projects. Students develop one or a series of self-directed interlinked projects, which may consist of research or field studies on a topic of interest (theoretical or creative) leading to a major piece of writing, a performance, an internship or some combination of these activities. By application to the department. Adjudication of the credit weighting of each project will be made by the department, based on the proposal. A supervisory committee may be established for projects involving more than six credits. Prerequisite: Fourth-year standing.

FA/DANC 4400 9.00 Senior Projects. Students develop one or a series of self-directed interlinked projects, which may consist of research or field studies on a topic of interest (theoretical or creative) leading to a major piece of writing, a performance, an internship or some combination of these activities. By application to the department. Adjudication of the credit weighting of each project will be made by the department, based on the proposal. A supervisory committee may be established for projects involving more than six credits. Prerequisite: Fourth-year standing.

FA/DANC 4400 12.00 Senior Projects. Students develop one or a series of self-directed interlinked projects, which may consist of research or field studies on a topic of interest (theoretical or creative) leading to a major piece of writing, a performance, an internship or some combination of these activities. By application to the department. Adjudication of the credit weighting of each project will be made by the department, based on the proposal. A supervisory committee may be established for projects involving more than six credits. Prerequisite: Fourth-year standing.

FA/DANC 4401 3.00 Independent Studies. Students develop one or a series of interlinked self-directed research projects, which may consist of research on a topic of interest (theoretical or creative) leading to a major piece of writing, thesis or series of essays. By application to the department. Adjudication of the appropriate credit weighting will be made by the department, based on the proposal. May be repeated for credit.

FA/DANC 4401 4.50 Independent Studies. Students develop one or a series of interlinked self-directed research projects, which may consist of research on a topic of interest (theoretical or creative) leading to a major piece of writing, thesis or series of essays. By application to the department. Adjudication of the appropriate credit weighting will be made by the department, based on the proposal. May be repeated for credit.

FA/DANC 4401 6.00 Independent Studies. Students develop one or a series of interlinked self-directed research projects, which may consist of research on a topic of interest (theoretical or creative) leading to a major piece of writing, thesis or series of essays. By application to the department. Adjudication of the appropriate credit weighting will be made by the department, based on the proposal. May be repeated for credit.

Design – Fine Arts at York, Sheridan Institute of Technology and Advanced Learning

Department of Design, York University:
4008 Technology Enhanced Learning Building, 416-736-5885
Chair of the Department:
D. Newgren
Professor Emeritus:
A. Tomcik
Associate Professors:
W. Janczak, D. Newgren, A. Oak, D. Scadding
Assistant Professors:
J. Hadlaw, A. Norwood, W. Wong
Department of Design, Sheridan Institute of Technology and Advanced Learning:
A100 Sheridan-Trafalgar, 905-845-9430, ext. 2579
Associate Dean:
M. Large
Design Program Coordinator:
B. Tsang
Professors:
A. Iarocci, M.A. Maruska, E. Naus, B. Ross, D. Whitton

Program of Study

The Honours bachelor of design program, which provides a professional education in a humanistic context, is jointly run by the design departments of York University and Sheridan Institute of Technology and Advanced Learning. Students in the joint bachelor of design Honours program enrol in courses at both institutions. The design degree (the first in Ontario) replaces the former bachelor of fine arts – design stream offered by the Visual Arts Department at York University and the Diploma in Graphic Design offered by Sheridan Institute of Technology and Advanced Learning. The joint program offers a comprehensive, intensive and professional education in communication design and a curriculum that reflects the distinct theoretical, research and practicum focus and needs of the design profession and the emerging standards of the Registered Graphic Designers of Ontario. Students in the program benefit from small studio/practicum classes, design studies classes and an internship program. The design practicum courses focus on three major areas of design: communications, information and interactive/multimedia design; the design courses provide an integrated approach to design history, research and theory, design management and critical issues in design.

For information on supplementary evaluation requirements and program requirements, please refer to the Faculty of Fine Arts section of this Calendar.

Courses in Design

FA/YSDN 1001 3.00 Visual Language. The elements and principles of design comprising our visual language are examined and explored on the two-dimensional level through various exercises and projects. This operational form language is developed via tactile and computer application processes. Required course for design major. For students not in the BDes program, compulsory and voluntary supplementary fees apply. Note: Students should have basic computer literacy skills as defined by the Faculty of Fine Arts.

FA/YSDN 1002 3.00 Design and Image. The processes of creating representational, graphic and abstract images in the context of visual communication design is examined. Different methods, tactile materials and computer application processes of generating and manipulating images are investigated with consideration given to form and content of images, as well as to their potential for the communication of ideas. Required course for design major. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply. Students should have basic computer literacy skills as defined by the Faculty of Fine Arts.

FA/YSDN 1003 3.00 3D Design. The elements and principles of three-dimensional design are examined and applied through various exercises and projects. Communication of three-dimensional concepts through two-

dimensional representations and three-dimensional prototypes is introduced and developed. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply. Available to non-majors by permission of the Department of Design.

FA/YSDN 1004 3.00 Design and Colour. Colour perception, systems or classification and the nature of light, pigment and colour materials are studied through a series of tactile and computer exercises and projects. The creative use of colour using a variety of materials and processes, and the use of colour in various periods is investigated. Note: Available to non-majors by permission of the Department of Design. For students not in the BDes program, compulsory and voluntary supplemental fees apply. Students should have basic computer literacy skills as defined by the Faculty of Fine Arts.

FA/YSDN 1005 3.00 Typography 1. An introduction to the history and development of letters, letterforms and the typography system as practiced in contemporary print and electronic design. The typographic vocabulary, system of measurement, prioritization of information and issues of readability and legibility are introduced. Required course for design major. Prerequisite: FA/YSDN 1001 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 2002 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 1006 3.00 Interactivity Design 1. The forms of interactivity are examined and explored through designing visual representations of the human computer interface based on the introduction of the developing theories and models of interaction. Required course for design major. Prerequisite: FA/YSDN 1001 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 1101 3.00 Critical Issues in Design. An introduction to the cultural, practical, technological and contextual issues facing designers today by examining works and readings from our day in the various fields of design. Required course for design major. Note: Available to non-majors by permission of the Department of Design. For students not in the BDes program, compulsory and voluntary supplemental fees apply. Students should have basic computer literacy skills as defined by the Faculty of Fine Arts.

FA/YSDN 1109A 3.00 Communications in the Urban Environment. This course will focus on the urban environment as a resource for developing and reinforcing a critical design vocabulary and awareness of visual and behavioural structural diversity - formal, stylistic and functional effects will be addressed. For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2001A 3.00 Visualization Methods. This course offers an in-depth study of graphic visualization systems, mechanical drawing devices and visual theory. Supervised studio time will strengthen students' observation, rapid sketching and visualizing abilities. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2003 3.00 Typography 2. A further investigation into the history, principles and application of contemporary typographic systems and issues of readability and legibility in print and electronic communication design. Required course for design major. Prerequisite: FA/YSDN 1005 3.00 (formerly FA/YSDN 2002 3.00), or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2004 3.00 Communication Design 1. This practicum course concentrates on building skills in two-dimensional visual communication design. Various communication and learning theories are integrated into the design process assisting students to develop a multi-disciplined approach to design. Required course for design major. Prerequisites: FA/YSDN 1001 3.00, FA/YSDN 1002 3.00 and FA/YSDN 1005 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 2004 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2005 3.00 Interactivity Design 2. The introduction of a general system model to provide a theoretical foundation for systematic solving of design problems is developed. Research, analysis, synthesis and evaluation processes with related methods are employed to develop electronic based communications. Prerequisite: FA/YSDN 1006 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2006 3.00 Design and Perception. An examination of the perception of visual information and communication on three distinct levels: representational, symbolic and abstract. Visual concepts of proximity, similarity and figure/ground relationships are examined. Introduction to basic communication models, perception theories and symbiotics provide a theoretical foundation for the studio problems. Prerequisites: FA/YSDN 1001 3.00 (formerly FA/VISA 2041 3.00) and FA/YSDN 1002 3.00 (formerly FA/VISA 2044 3.00) or permission of the course director. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2007 3.00 Typography 3. A continued in-depth investigation into contemporary explorations and applications of typographic principles, information theories, history and various approaches to solving visual communication problems. Letterpress printing and digital processes are investigated. Required course for design major. Prerequisites: FA/YSDN 1005 3.00 and FA/YSDN 2003 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 3002 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2102 6.00 History of Design. Functional objects, past and present, and their relationship to the process of design, conditions of the time, the problems met, important influences and the importance to our time are examined. The primary focus is from the industrial revolution to today with required reading and much critical looking at our own environment. Required course for design major. Prerequisite: FA/YSDN 1101 3.00, FA/VISA 1040 3.00 or FA/VISA 1000 3.00 or permission of the Design Department. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

Cross-listed to: FA/VISA 2910 6.00 and FA/YSDN 2102 6.00

FA/YSDN 2103 3.00 Research in Design. An identification and examination of the various aspects of conducting original survey research in support of the problem-solving process utilized in contemporary visual communication design. Required course for design major. Prerequisite: FA/YSDN 1101 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 2104 3.00 Design Thinking: Creative and Critical Pathways. This studies course examines the similarities and differences between creative and critical thinking. Both types of thinking are required in the design process to provide the student with the theory and operational skills necessary to improve their design process and problem-solving abilities. This course counts as a free elective for BDes majors. Prerequisite: FA/YSDN 1101 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 2101A 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3003 3.00 Typography 4. This course furthers the students' knowledge of the typographic principles initiated in Typography 3. The investigation of typography in various media to communicate with impact on the audience is emphasized through font creation and type in motion. Required course for design major. Prerequisites: FA/YSDN 2007 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3004 3.00 Communication Design 2. A continued investigation into two dimensional print-oriented design problems. Various communication and learning theories are integrated into the design process assisting students to develop a multi-disciplined approach to design. Prerequisite: FA/YSDN 2004 3.00 or permission of the Department

of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3005 3.00 Design and Systems. A continued investigation into complex problem solving which emphasizes the application of systemic design methods. Individual and team problem-solving techniques are utilized to identify and analyze problems, develop content, specify functions, evaluate solutions and produce prototypes at the system level. Prerequisite: FA/YSDN 3006 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3006 3.00 Design and Information Architecture. Students broaden their knowledge and understanding of the conceptual principles of organizational structures and methodologies involved in the presentation of information in virtual environments. In a series of projects, students explore various types of data and structural organization models of information. Prerequisites: FA/YSDN 2005 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3007 3.00 Information Design 1. The relevant theories and methodologies which allow the designer to prioritize, simplify and creatively visualize a wide range of complex textural and visual information are examined and applied. Prerequisite: FA/YSDN 2003 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3008 3.00 Information Design 2. A further and extended investigation into the relevant theories and methodologies which allow the designer to prioritize, simplify and creatively visualize a wide range of complex textual and visual information. Prerequisite: FA/YSDN 3007 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3009 3.00 Time-based Communication. This course focuses upon the visual grammar and language syntax of time-based communication and motion graphics and explores concepts and techniques involved in the integration of images, typography, digital video and audio into vibrant and persuasive communication environments. Prerequisites: FA/YSDN 1006 3.00 and FA/YSDN 2005 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3010 3.00 Package Design. This specialized practicum course focuses on the principles, vocabulary and contemporary production of package design. An historical overview and current design strategies in the context of the retail environment will be investigated. Prerequisites: FA/YSDN 1003 3.00 and FA/YSDN 3004 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 4001B 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3011 3.00 Editorial Design. This course will focus on the design of print and electronic editorial documents. Students will investigate the relationship between type, illustration, photo and graphic imagery. Prerequisites: FA/YSDN 3004 3.00 and FA/YSDN 3003 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3101A 3.00 History and Development of Typography. This course will explore the historic development of typographic form - the origins of alphabet from 3000 BC to the present. This includes the study of historical/cultural periods, typographic classifications and exploration of contemporary typography. For students not in the BDes program, compulsory and voluntary supplementary fees apply. Prerequisite/corequisite: FA/YSDN 2102 6.00 or permission of the Department of Design.

FA/YSDN 3102 3.00 Contemporary Problems in Design. An identification and examination of the various roles that design and designers play in the solving of visual and cultural problems in today's rapidly changing society. Prerequisite: FA/YSDN 2103 3.00 or permission

of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3104 3.00 Design for Public Awareness: Investigation, Identification and Integration in Design Communication. This design studies course focuses upon the contribution of design to public awareness of social issues. Students learn that responsible designers also have social responsibilities, and have the opportunity to be of service to marginalized populations. Students will be introduced to the role(s) of graphic agitation, interventions, major and alternative modes of public address and culture jamming. Prerequisites: FA/YSDN 1101 3.00, FA/YSDN 2102 6.00, FA/YSDN 2103 3.00.

FA/YSDN 3105 3.00 Self, Society and Design. Examines the practices, images and objects of graphic design in relation to issues of personal agency and wider social structure, and so places visual and material culture in the context of concerns which are central to the social sciences of (primarily) anthropology, sociology and social psychology. Prerequisite: FA/YSDN 2103 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 3106 3.00 Image and Influence: Graphics in the 20th Century. Explores the relationships between graphic design and art in the 20th century, with particular attention to the associations between pictorial Modernism and the use of image and text in graphic design. Prerequisite: FA/YSDN 2102 6.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4001A 3.00 Advanced Package Design. A continued in-depth examination of the conceptualization and creation of effective package structures and graphics in relation to contemporary society and the realities of professional practice. For students not in the BDes program, compulsory and voluntary supplementary fees apply. Prerequisite: FA/YSDN 3010 3.00 or permission of the Department of Design.

FA/YSDN 4002 3.00 Type Explorations. A continued in-depth investigation into contemporary explorations and applications of typographic principles, information theories, history and various approaches to solving visual communication problems. Print, digital and environmental/broadcast distribution processes are investigated. Prerequisite: FA/YSDN 3003 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4003 3.00 Interactive System Design. An advanced investigation into systems - intuitive and learned - that support human activities via interactive communication and distribution networks. An understanding of these communication/distribution methods working in reciprocal fashion from users to the computer and back, is presented. Prerequisites: FA/YSDN 3005 3.00 and FA/YSDN 3102 3.00, or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4004 6.00 Design Workshop. Students develop a series of self-directed projects using a multidisciplined approach in solving two-dimensional, three-dimensional and interactive digital design problems. The student proposal is adjudicated by a department committee. Required course for design major which can only be taken in their graduating year. Prerequisites: All required practicum and studies courses or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4005 3.00 Book Design. This advanced level practicum course explores the structuring of bound, print-oriented long text information documents. The history, anatomy, structural dynamics and an investigation of the contemporary private and commercial press/publishing process of the printed book is examined. Prerequisite: FA/YSDN 3004 3.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 4001A 3.00. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4007 3.00 Corporate Identity Design. This course will focus on the design of a corporate identity system for an organization. The system will involve the design of graphic identifiers, typography, selected applications and supporting documents. Prerequisites: FA/YSDN 3004 3.00 and FA/YSDN 3003 3.00 or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4102 3.00 Design Management. This course examines the theories and practice of design management in contemporary organizations. Through case studies and presentations by visiting speakers, students learn to construct practical working models of management systems. Projects require students to demonstrate investigative, analytical, organizational and business-oriented communication skills. Prerequisite: Students must have fourth-year standing in the BDes program or permission of the Department of Design. Note: For students not in the BDes program, compulsory and voluntary supplementary fees apply.

FA/YSDN 4103 3.00 Design Internship. Lectures introduce students to current design business practices, legal requirements and ethics. Full-time participation is required for three weeks in an approved professional design environment. Required course for design major. Prerequisite: Third-year standing in the BDes or permission of the Department of Design.

FA/YSDN 4104 3.00 Professional Aspects of Design. The areas of professional responsibility, accreditation, presentation techniques, portfolio preparation, branding and promotion will culminate in the planning and mounting of a graduation exhibition. Required course for design major. Corequisite: FA/YSDN 4004 6.00 or permission of the Department of Design. Degree credit exclusion: FA/YSDN 3103 3.00.

FA/YSDN 4900 3.00 Independent Studies: Design Practicum. An individualized study program for highly motivated students in their final year of study who wish to pursue specific and intensive independent practicum projects under the supervision of a faculty member on topics not available in other courses in the department. No more than one independent study course may be taken in any given year. Compulsory and voluntary supplementary fees may apply. Prerequisites: A 4000-level studio practicum in the media area being proposed, an overall major average of 7.0 (B+) and permission of the department. Note: Applications are available in the spring for the following academic session. Applications must include written support of faculty supervisor prior to submission to the department for approval.

FA/YSDN 4900 6.00 Independent Studies: Design Practicum. An individualized study program for highly motivated students in their final year of study who wish to pursue specific and intensive independent practicum projects under the supervision of a faculty member on topics not available in other courses in the department. No more than one independent study course may be taken in any given year. Compulsory and voluntary supplementary fees may apply. Prerequisite: A 4000-level studio practicum in the media area being proposed, an overall major average of 7.0 (B+), and permission of the department. Note: Applications are available in the spring for the following academic session. Applications must include written support of faculty supervisor prior to submission to the department for approval.

FA/YSDN 4901 3.00 Independent Studies: Design Studies. An individualized study program for highly motivated students in their final year of study who wish to pursue specific and intensive independent studies projects under the supervision of a faculty member on topics not available in other courses in the department. No more than one independent study course may be taken in any given year. Compulsory and voluntary supplementary fees may apply. Prerequisites: Completion of at least 18 credits in design studies, an overall major average of 7.0 (B+), and permission of the department. Note: Applications are available in the spring for the following academic session. Applications must include written support of faculty supervisor prior to submission to the department for approval.

FA/YSDN 4901 6.00 Independent Studies: Design Studies. An individualized study program for highly motivated students in their final year of study who wish to pursue specific and intensive independent studies projects under the supervision of a faculty member on topics not available in other courses in the department. No more than one independent study course may be taken in any given year. Compulsory and voluntary supplementary fees may apply. Prerequisites: Completion of at least 18 credits in design studies, an overall major average of 7.0 (B+), and permission of the department. Note: Applications are available in the spring for the following academic session. Applications must include written support of faculty supervisor prior to submission to the department for approval.

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Drama Studies – Glendon

Program Coordinator/Coordonnateur du programm e:
   R.S. Wallace
Professors/Professeurs :
   A. Baudot, J. Escobar, R.S. Wallace, G.B.Shand, C.D. Zimmerman
Associate Professor/Professeure agrégé e:
   J. Couchman
Associate Professors Emeriti/Professeurs agrégés émérite s:
   J.-C. Jaubert, H. Porré, E.S. Rump

Courses in Drama Studies

GL/DRST 2200 6.00 Smoke and Mirrors. An Introduction to Technical Theatre. This course aims to give students an introduction to the various aspects of theatrical production, including scenery, lighting, sound, properties, publicity and production stage management. Students will apply their new skills to support at least one Glendon drama studies production.

GL/DRST 2610 3.00 Western Theatre: Masked Beginnings. A performance-based study of major theatrical achievements, including their modes of presentation, from early Greece to the European Renaissance.

Cross-listed to: GL/DRST 2610 3.00 and GL/EN 2610 3.00 and GL/HUMA 2610 3.00

GL/DRST 2612 3.00 Western Theatre: From Early Modern to Naturalism. A performance-based study of major theatrical achievements, including their modes of presentation, from the early modern period to the early 20th century.

Cross-listed to: GL/DRST 2612 3.00 and GL/EN 2612 3.00 and GL/HUMA 2612 3.00

GL/DRST 2630 6.00 20th-Century Drama in Europe and North America. This study of 20th-century drama in Europe and North America relates the practice of theatrical production to the literary features of plays within historical and cultural contexts. In most years students must participate in a class production. Degree credit exclusion: GL/EN 2530 6.00.

Cross-listed to: GL/DRST 2630 6.00 and GL/EN 2630 6.00

GL/DRST 2645 6.00 Par delà le réalisme : l'art dramatique français au XXe siècle. Étude de la production et de la théorie théâtrale au XXe siècle en France et au Québec. La première partie du cours explore tout particulièrement des réalisations qui illustrent l'anti-réalisme à la fois dans les textes et dans la production théâtrale. La seconde partie du cours est consacrée à la production d'une pièce au Théâtre Glendon étudiée dans la première partie.

Language of Instruction: French

Cross-listed to: GL/DRST 2645 6.00 and GL/FRAN 2645 6.00 and GL/HUMA 2645 6.00

GL/DRST 3100 3.00 Individual Studies. Students do independent reading and research together with written assignments under the guidance of a member of the college. All individual studies in drama studies at Glendon are subject to specific regulations which the program will supply on request. (Since there is no assurance that a proposed project will be accepted, students are encouraged to enrol in another course until a decision is made concerning the proposal.)

GL/DRST 3100 6.00 Individual Studies. Students do independent reading and research together with written assignments under the guidance of a member of the college. All individual studies in drama studies at Glendon are subject to specific regulations which the program will supply on request. (Since there is no assurance that a proposed project will be accepted, students are encouraged to enrol in another course until a decision is made concerning the proposal.)

GL/DRST 3100 6.00 Travail individuel. Tout étudiant choisit un programme d'étude individuelle qu'il mènera à bien sous la direction d'un professeur du collège. Attention : Tous les « Travaux individuels » offerts dans le cadre d'Études d'arts dramatiques à Glendon sont régis par des règlements précis, que le secrétariat du programme tient à la disposition des étudiants. (Étant donné qu'il n'existe aucune garantie que ce projet soit accepté, on conseille vivement à l'étudiant de s'inscrire dans un autre cours jusqu'à ce qu'une décision soit prise.)

Language of Instruction: French

GL/DRST 3600 3.00 La dramaturgie du XVIIe siècle. Ce cours porte sur le théâtre du « Grand Siècle ». Seront étudiées certaines oeuvres de Corneille, Molière et Racine aussi bien que quelques pièces baroques et les théories de Boileau sur le théâtre. Cours incompatible: GL/FRAN 3250 3.00.

Language of Instruction: French

Cross-listed to: GL/DRST 3600 3.00 and GL/FRAN 3600 3.00

GL/DRST 3602 6.00 Opéra et histoire. "L'opéra est la mise en scène de nos désirs." C'est aussi le lieu où s'affrontent des enjeux divers: politiques, sociaux, idéologiques. A travers l'écoute attentive — enracinée dans l'Histoire — de plusieurs opéras célèbres, on se propose d'étudier la relation existant entre cette forme d'art et nos fantasmes individuels ou collectifs.

Language of Instruction: French

Cross-listed to: GL/DRST 3602 6.00 and GL/HUMA 3602 6.00

GL/DRST 3610 3.00 Théâtre québécois. Étude structurale et thématique de certaines oeuvres des auteurs les plus marquants du théâtre québécois.

Language of Instruction: French

Cross-listed to: GL/DRST 3610 3.00 and GL/FRAN 3610 3.00

GL/DRST 3615 6.00 Contemporary Women Playwrights. This course studies selected plays by contemporary American, British and Canadian women playwrights. Primary methodology is close reading. Attention will also be paid to how theatrical and cultural contexts and material circumstances are embedded in the representations of gender. Degree credit exclusions: GL/EN/WMST 3011 6.00 (2000-2001), GL/EN/CDNS 3010 6.00/WMST 3800 6.00 (1998-1999), GL/CDNS/WMST 4012 3.00 (Fall 1995).

Cross-listed to: GL/CDNS 3615 6.00 and GL/DRST 3615 6.00 and GL/EN 3615 6.00 and GL/WMST 3615 6.00

GL/DRST 3620 6.00 Reading Shakespeare. A study of a representative selection of Shakespeare's playtexts, with particular attention to how we produce their meanings. Prerequisite: Six credits in literature or drama studies. Degree credit exclusion: GL/EN 3420 6.00.

Cross-listed to: GL/DRST 3620 6.00 and GL/EN 3620 6.00

GL/DRST 3625 3.00 Early English Drama: The Middle Ages. The early development of English drama from the Biblical cycles of the medieval craft guids, and the moralities and interludes, through to the humanist drama of the early 16th century. Degree credit exclusion: GL/EN 3520 3.00(EN).

Cross-listed to: GL/DRST 3625 3.00 and GL/EN 3625 3.00

GL/DRST 3630 3.00 Early English Drama: Shakespeare's Contemporaries. Major comedies and tragedies from the flowering of the London professional theatre between 1576 and 1642. Prerequisite: GL/EN 2510 6.00 or equivalent, or permission of the instructor. Degree credit exclusion: GL/EN 3525 3.00(EN).

Cross-listed to: GL/DRST 3630 3.00 and GL/EN 3630 3.00

GL/DRST 3640 6.00 L'art dramatique : texte et production. Le but du cours est d'apporter des connaissances générales sur le théâtre et d'amener les participants à explorer leurs possibilités d'expression créatrice. Ils auront de plus l'occasion de se familiariser concrètement avec toutes les disciplines d'une production théâtrale lors d'un spectacle public.

Language of Instruction: French

Cross-listed to: GL/DRST 3640 6.00 and GL/HUMA 3640 6.00

GL/DRST 3650 3.00 Théâtre français du XXe siècle. Étude de la dramaturgie française au 20e siècle, des développements dans le théâtre et de la place du théâtre dans les grands mouvements intellectuels et culturels du siècle. Lecture de pièces choisies d'auteurs tels que Paul Claudel, Jean Anouilh, Albert Camus, Jean-Paul Sartre, Eugène Ionesco, Jean Genêt, Samuel Beckett.

Language of Instruction: French

Cross-listed to: GL/DRST 3650 3.00 and GL/FRAN 3650 3.00

GL/DRST 3950 6.00 English-Speaking Theatre in Canada. A study of the development and present state of the English-speaking theatre in Canada, focusing on the major companies and the emergence of contemporary Canadian drama.

Cross-listed to: GL/DRST 3950 6.00 and GL/EN 3950 6.00 and GL/HUMA 3950 6.00

GL/DRST 3955 6.00 Approaches to Theatre. This course will introduce students to theatre by the study of theoretical and practical approaches to production. First-term classes and workshops will culminate in a second-term production.

Cross-listed to: GL/DRST 3955 6.00 and GL/EN 3955 6.00 and GL/HUMA 3955 6.00

GL/DRST 4100 3.00 Individual Studies. Students do independent reading and research together with written assignments under the guidance of a member of the college. All individual studies in drama studies at Glendon are subject to specific regulations which the program will supply on request. (Since there is no assurance that a proposed project will be accepted, students are encouraged to enrol in another course until a decision is made concerning the proposal.)

GL/DRST 4100 6.00 Individual Studies. Students do independent reading and research together with written assignments under the guidance of a member of the college. All individual studies in drama studies at Glendon are subject to specific regulations which the program will supply on request. (Since there is no assurance that a proposed project will be accepted, students are encouraged to enrol in another course until a decision is made concerning the proposal.)

GL/DRST 4100 6.00 Travaux individuel. Tout étudiant choisit un programme d'étude individuelle qu'il mènera à bien sous la direction d'un professeur du collège. Attention : tous les « Travaux individuels » offerts dans le cadre d'Études d'arts dramatiques à Glendon sont régis par des règlements précis, que le secrétariat du programme tient à la disposition des étudiants. (Étant donné qu'il n'existe aucune garantie que ce projet soit accepté, on conseille vivement à l'étudiant de s'inscrire dans un autre cours jusqu'à ce qu'une décision soit prise.)

Language of Instruction: French

GL/DRST 4612 3.00 Théâtre du XVIIIe siècle. Ce cours se veut une étude de l'évolution du théâtre au XVIIIe siècle : ses enjeux, ses querelles et ses tentatives de refléter des reálités nouvelles, comme la lutte philosophique, la montée de la bourgeoisie et les valeurs contestataires qui vont préparer la Révolution française. Condition préalable : GL/FRAN 2335 6.00. Cours incompatible : GL/FRAN 4600 3.00.

Language of Instruction: French

Cross-listed to: GL/DRST 4612 3.00 and GL/FRAN 4612 3.00

GL/DRST 4615 3.00 Théâtre du XIXe siècle. Étude du théâtre du XIXe siècle dans ses principales manifestations : le Romantisme qui conteste le

code esthétique du classicisme; le théâtre sentimental et la comédie bourgeoise qui reflète la nouvelle classe dominante; le théâtre naturaliste et la farce, puis le renouveau du genre à la fin du siècle. Condition préalable : GL/FRAN 2335 6.00. Cours incompatible : GL/FRAN 4600 3.00.

Language of Instruction: French

Cross-listed to: GL/DRST 4615 3.00 and GL/FRAN 4615 3.00

GL/DRST 4635 6.00 Cinema in Spain and Latinoamerica. The course studies major accomplishments in Spanish film, from the cinema of Luis Buñuel to the main trends in contemporary Spain. The course also studies a selection of Latin American cinema, including recent films from Mexico, Argentina and Cuba. Films with English subtitles. Prerequisite: GL/SP 2240 6.00 and GL/SP 2300 6.00 or permission from the Department of Hispanic Studies.

Cross-listed to: GL/DRST 4635 6.00 and GL/HUMA 4635 6.00 and GL/SP 4635 6.00

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Earth and Space Science and Engineering – Pure and Applied Science

Department Office:
   102 Petrie, 416-736-5245
Chair of the Department:
   J.R. Miller
Distinguished Research Professor:
   J.C.McDonnell
Professors:
   K.D. Aldridge, Q. Cheng, G.T. Jarvis, I.C .McDade, J.R. Miller, P.A. Taylor
Professors Emeriti:
   G.G. Shepherd, D.E. Smylie
Associate Professors:
   M.A. Jenkins, G.P. Klaassen, D.V. Michelangeli, S.D. Pagiatakis, A.M.K. Szeto, V. Tao, J.A. Whiteway
Assistant Professor:
   B. Hu

The Department of Earth and Space Science and Engineering offers interdisciplinary instruction in applied science areas dealing with the solid Earth and the atmosphere. Several distinct streams of instruction are offered.

In the Earth Science Stream, students obtain a strong background in the physics and chemistry of the solid Earth and the techniques of mineral and petroleum exploration. It is important for the earth science student planning a career in exploration to gain practical experience working in the area during summer periods prior to graduation.

In the Atmospheric Science Stream, students obtain solid grounding in the physics, chemistry and dynamics of the atmosphere.

The department offers a Specialized Honours Applied Science degree Stream in Space and Communication Sciences, developed to meet the needs of rapidly expanding technologies in these fields.

In cooperation with the Chemistry Department, the department offers an Honours Double Major Applied Science degree Stream in Atmospheric Chemistry that explores the interaction of chemistry and dynamics within the atmosphere and its impact on the global environment.

The course requirements of programs in Earth and Atmospheric Science are given in the Faculty of Pure and Applied Science Programs of Study section of this Calendar (for the Atmospheric Chemistry and Space and Communication Sciences streams, see separate entries in the Faculty of Pure and Applied Science Programs of Study section of this Calendar).

The department also offers certificates in Geographic Information Systems and Remote Sensing and in Meteorology, which are described in the Faculty of Pure and Applied Science Undergraduate Degree and Certificate Programs section of this Calendar.

Courses in Earth and Atmospheric Science

The prerequisites and corequisites stated indicate the standard of preparation with which admission is usually automatic. Admission to any course should otherwise be determined in consultation with a program adviser.

SC/EATS 1010 3.00 The Dynamic Earth and Space Geodesy. An overview of modern geophysics: origin of the Earth, impact cratering, internal structure and rheology, earthquakes, plate tectonics, geomagnetism. Space geodetic positioning techniques such as VLBI, SLR and GPS are introduced as means of detecting and monitoring tectonic movements. One term. Three credits. Prerequisites: One of OAC calculus, OAC algebra and geometry, 12U advanced functions and introductory calculus, 12U geometry and discrete mathematics, or AS/SC/MATH 1515 3.00; OAC physics or 12U physics or SC/PHYS 1510 4.00. Degree credit exclusion: SC/EATS 1010 6.00.

SC/EATS 1011 3.00 Introduction to Atmospheric Science. The origin, composition and vertical structure of the Earth's atmosphere and those of other planets. The present global atmospheric circulation. Weather systems, measurements and weather maps; atmospheric chemistry; the ozone layer and atmospheric pollution. Three lecture hours per week, five three-hour laboratory sessions. One term. Three credits. Prerequisites: OAC calculus, OAC algebra and geometry, 12U advanced functions and introductory calculus, geometry and discrete mathematics or AS/SC/MATH 1515 3.00; OAC physics or 12U physics or SC/PHYS 1510 4.00. Degree credit exclusion: SC/EATS 1010 6.00.

SC/EATS 2010 3.00 Introductory Meteorology. An introduction to atmospheric radiation and thermodynamics, clouds and precipitation. Vertical soundings and an introduction to the analysis and interpretation of tephigrams. Atmospheric motion on the global, synoptic, meso- and micro-scales. Two lecture hours and three laboratory hours, or three lecture hours per week; one tutorial hour in alternate weeks. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1540 3.00; AS/SC/MATH 1013 3.00 and AS/SC/MATH 1014 3.00, or equivalents; SC/PHYS 1010 6.00 or SC/PHYS 1410 6.00.

SC/EATS 2030 3.00 Geophysics and Space Science. Seismic waves, earthquake fault plane solutions, tectonics on a sphere, geochronology, paleomagnetism, Earth's magnetic field, its origin and deformation by solar winds. VLBI measurements of fluctuations of Earth rotation, gravitational perturbations of satellite orbits, planetary exploration and communications issures. three lecture hours and a one-hour computer laboratory. One term. Three credits. Prerequisites: AS/SC/MATH 1014 3.00; SC/PHYS 1010 6.00, or a minimum grade of C in SC/PHYS 1410 6.00.

SC/EATS 2050 4.00 Mineralogy and Petrology. Introduction to the study of geology, minerals, rocks and structural geology. Physical and chemical properties of commonly occurring rock-forming minerals. Origin of commonly occurring igneous rocks. Interpretation of textures and geneses of these rocks. Three lecture hours and a laboratory session. One term. Four credits. Prerequisites: OAC Chemistry or 12U Chemistry or SC/CHEM 1500 4.00, and OAC Physics or 12U Physics or SC/PHYS 1510 4.00; or AS/SC/GEOG 1400 6.00 or AK/GEOG 2510 6.00.

SC/EATS 2060 3.00 Economic Geology and Ore Genesis. Mining geology. Morphology of the principal types of ore deposits. Fluid inclusions, wall rock alteration, stable isotope and radioactive isotope studies, zoning and timing of mineralization, concepts of ore deposit formation, classification of ore deposits, metallogenic provinces and epochs. Three lecture hours per week. One term. Three credits. Prerequisite: SC/EATS 2050 4.00. Degree credit exclusion: SC/EATS 4040 3.00.

SC/EATS 2470 3.00 Introduction to the Mechanics of Fluids and Solids. (formerly SC/EATS 2470 4.00 - before 2000-2001) Introductory tensor algebra and calculus. Stress and strain analysis. Symmetry of stress tensor, equilibrium conditions. Lagrangian and Eulerian descriptions of strain. Physical interpretation of stress, strain and strain rate tensors. Conservation laws in continua. Consistency and compatibility considerations. Constitutive relations. Two lecture hours and a tutorial or problems laboratory session. One term. Three credits. Prerequisites: AK/

AS/SC/COSC 1540 3.00; AS/SC/MATH 1025 3.00; AS/SC/MATH 2015 3.00; SC/PHYS 1010 6.00, or a minimum grade of C in SC/PHYS 1410 6.00. Degree credit exclusion: SC/EATS 2470 4.00.

SC/EATS 2610 2.00 Introductory Geomatics and Space Engineering. Introduction to geodesy and geomatics engineering: surveying, geodesy, hydrography, space geodesy and geodynamics, photogrammetry and digital mapping. A survey of communications, remote sensing and geodetic satellites, their engineering characteristics, payloads, and use; features of Low Earth Orbiter (LEO) missions. One and one-half lecture hours per week, one and one-half laboratory hours per week. One term. Two credits. Prerequisites: SC/EATS 1010 3.00; SC/PHYS 1010 6.00; or permission of the course instructor.

Cross-listed to: SC/EATS 2610 2.00 and SC/ENG 2110 2.00

SC/EATS 2620 4.00 Fundamentals of Surveying. Coordinate systems, conventions and transformations. First and second geodetic problem: trig sections, traverses, eccentricities, areas. Distance measurements, angular measurements, heights. Topographic mapping and property surveys. Route surveying. Introduction to other surveys: alignment, deformation surveys for buildings, bridges, dams, tunnels, pipelines. Three lecture hours per week and three laboratory hours per week. One term. Four credits. Prerequisites: SC/EATS 1010 3.00; SC/MATH 1014 3.00; SC/MATH 1025 3.00; SC/EATS 2610 2.00 or SC/ENG 2110 2.00; or permission of the course instructor.

Cross-listed to: SC/EATS 2620 4.00 and SC/ENG 2120 4.00

SC/EATS 2630 3.00 Field Surveys. A two-week field camp comprising field and office work that simulate professional practice. Students participate in organizational, planning, scheduling and logistical aspects of field operations, instrument familiarization and testing, establishment of geodetic control, and land boundary, highway and construction surveys. Two-week field surveys. No lecture. Three credits. Prerequisite: SC/EATS 2620 4.00 or SC/ENG 2120 4.00.

Cross-listed to: SC/EATS 2630 3.00 and SC/ENG 2130 3.00

SC/EATS 3001 1.00 Organization and Management Seminar in Space and Communication Sciences. A seminar course taught by guest speakers from industry, government and the University. Content changes from year to year, but includes such topics as professional ethics, communications regulations, space law, space science policy, project management, privacy and security issues in computing. One lecture hour in alternate weeks. Two terms. Prerequisite: Eligibility to proceed in the Specialized Honours stream in Space and Communication Sciences beyond the 2000-level requirements, or permission of the course director. Degree credit exclusion: AS/SC/COSC 3002 1.00.

Cross-listed to: SC/COSC 3001 1.00 and SC/EATS 3001 1.00 and SC/PHYS 3001 1.00

SC/EATS 3010 2.00 Introductory Applied Geophysics. Students are introduced to the theory and operation of the instruments of applied geophysics. As well as the traditional applications to mineral and petroleum exploration, the use of geophysical instruments in engineering and environmental monitoring is described. Two lecture hours. Second term. Two credits. Prerequisites: SC/EATS 2030 3.00; AK/AS/SC/COSC 1540 3.00 or equivalent programming experience. Corequisites: SC/EATS 3020 3.00; SC/EATS 3180 3.00.

SC/EATS 3011 1.00 Applied Geophysics Field School. A one-week field school is held on campus (usually in May) and includes instruction in field geology and mapping, orienteering and practical exercises in the in-field use of geophysical instruments. One credit. Prerequisites: SC/EATS 3010 2.00; SC/EATS 3020 3.00; SC/EATS 3180 3.00.

SC/EATS 3020 3.00 Global Geophysics and Geodesy. Studies of isostatic equilibrium and glacial rebound; seismic tomography and spherical harmonic representation of gravity and the geoid; Earth rotation and geodesy; geothermal heat flow and mantle convection. Three lecture hours. One term. Three credits. Prerequisites: SC/EATS 2030 3.00; SC/EATS 2470 3.00 or SC/PHYS 2010 3.00; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00; SC/PHYS 2020 3.00.

SC/EATS 3030 3.00 Atmospheric Radiation and Thermodynamics. Applications of basic thermodynamic principles to dry and moist atmospheric situations. Solar (short wave) and terrestrial (long wave) radiation with respect to absorption and scattering processes involving atmospheric atoms, molecules, aerosol particles and clouds. Three lecture hours. One term. Three credits. Prerequisites: AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00; SC/PHYS 1010 6.00, or a minimum grade of C in SC/PHYS 1410 6.00.

Cross-listed to: SC/EATS 3030 3.00 and SC/PHYS 3080 3.00

SC/EATS 3040 3.00 Atmospheric Dynamics I. Dynamics of large-scale weather systems. Development of the equations of motion, geostrophy, thermal wind, vorticity and divergence, Ekman layers and the quasi-geostrophic theory. Three lecture hours. One term. Three credits. Prerequisites: SC/EATS 2010 3.00; SC/EATS 2470 3.00 or SC/PHYS 2010 3.00; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00.

SC/EATS 3130 3.00 Introductory Atmospheric Chemistry. An introductory course linking chemistry and atmospheric science. Topics include atmospheric evolution; biogeochemical cycles; sources, transformations and sinks of atmospheric species; human impacts such as acid rain, photochemical smog and depletion of the ozone layer. Three lecture hours. One term. Three credits. Prerequisites: SC/CHEM 1001 3.00; one of AS/SC/MATH 1010 3.00, AS/SC/MATH 1014 3.00, AK/AS/SC/MATH 1310 3.00, AS/SC/MATH 1505 6.00. Degree credit exclusions: SC/CHEM 3160 3.00.

Cross-listed to: SC/CHEM 3060 3.00 and SC/EATS 3130 3.00

SC/EATS 3140 4.00 Sedimentology and Structural Geology. Weathering, clastic rocks, diagenesis, mudrocks, carbonates, evaporites, orthographic construction, structural contours, stereographic projection, faults, folds, fabric analysis. Normally offered in alternate years. Three lecture hours, three laboratory hours. One term. Four credits. Prerequisites: SC/EATS 2030 3.00; SC/EATS 2050 4.00.

SC/EATS 3180 3.00 Seismology. Theory and applications of the propagation of seismic waves in the Earth; laboratory and computer exercises where appropriate; practical exercises as required. Two lecture hours and a laboratory session. One term. Three credits. Prerequisites: SC/EATS 2030 3.00; SC/EATS 2470 3.00 or SC/PHYS 2010 3.00; AK/AS/SC/COSC 1540 3.00 or equivalent FORTRAN programming experience; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00.

SC/EATS 3280 3.00 Physics of the Space Environment. An introduction to the physical processes of the upper atmosphere, the ionosphere, the magnetosphere and the heliosphere, and the interactions that occur with space vehicles that traverse these regions of space. Prerequisites: SC/PHYS 2020 3.00; SC/PHYS 2040 3.00.

Cross-listed to: SC/EATS 3280 3.00 and SC/PHYS 3280 3.00

SC/EATS 3300 3.00 Geographical Information Systems (GIS) and Spatial Analysis. The fundamental concepts and techniques of GIS are presented along with detailed discussion of computer implementation. The emphases include database management and map analysis/spatial modelling. PC ArcView with Spatial Analyst extension GIS programs are used for hands-on exercises. Normally offered in alternate years. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1540 3.00 or AK/AS/SC/COSC 1030 3.00 or AK/AS/SC/COSC 1520 3.00; AK/AS/SC/MATH 2560 3.00 or AS/SC/GEOG 2420 3.00 or AK/AS/SC/MATH 1131 3.00; AS/SC/MATH 1025 3.00 or AS/SC/MATH 1013 3.00; both SC/EATS 1010 3.00 and SC/EATS 1011 3.00, or SC/EATS 2030 3.00, or AS/SC/GEOG 1400 6.00, or AK/GEOG 2510 6.00, or permission of the instructor.

SC/EATS 3610 4.00 Geodetic Concepts. Geodesy. Reference systems, frames and datums; time systems; the natural system of coordinates; terrestrial, celestial and orbital coordinate systems. Coordinate system transformations. Relative three dimensional positioning; the inertial frame of reference. Positions on the ellipsoid and mapping plane. Height systems. Three lecture hours and three hours of laboratory exercises per week. One term. Four credits. Prerequisites: SC/EATS 2610 2.00 or SC/ENG 2110 2.00; SC/EATS 2620 4.00 or SC/ENG

2120 4.00; AK/AS/SC/MATH 2015 3.00; AK/AS/SC/COSC 2501 1.00. Corequisite: SC/EATS 3620 4.00 or SC/ENG 3120 4.00.

Cross-listed to: SC/EATS 3610 4.00 and SC/ENG 3110 4.00

SC/EATS 3620 4.00 Adjustment Calculus. Minima and maxima of functions, Weierstrass theorem, Lagrange multipliers. Quadratic forms. Observables, observations, parameters and mathematical models. The least squares principle; weight matrix and variance factor; parametric, condition and combined adjustments. Three lecture hours and three hours of laboratory exercises per week. One term. Four credits. Prerequisites: AK/AS/SC/MATH 1025 3.00; AK/AS/SC/MATH 2015 3.00; SC/EATS 2620 4.00 or SC/ENG 2120 4.00; AK/AS/SC/COSC 2501 1.00. Corequisite: SC/EATS 3610 4.00 or SC/ENG 3110 4.00.

Cross-listed to: SC/EATS 3620 4.00 and SC/ENG 3120 4.00

SC/EATS 3630 4.00 Analysis of Overdetermined Systems. Hilbert space and statistics. Statistical testing and assessment of observations, parameters and mathematical models. Optimal design. Generalized adjustment, problems with constraints and singularities, step-by-step procedures, Kalman filtering, least-squares collocation. Three lecture hours and three hours of laboratory exercises per week. One term. Four credits. Prerequisites: AS/SC/GEOG 2420 3.00, SC/EATS 3610 4.00 or SC/ENG 3110 4.00, SC/EATS 3620 4.00 or SC/ENG 3120 4.00.

Cross-listed to: SC/EATS 3630 4.00 and SC/ENG 3130 4.00

SC/EATS 3640 4.00 Geodetic Surveys. Instrument systems and procedures for high-precision geodetic surveys. High-precision surveys in engineering physics; geodetic network densification, adjustment and analysis; procedures for deformation surveys and strain analysis. Establishment and observation of control networks for construction and monitoring of large engineering structures. Three lecture hours and three hours of laboratory exercises hours per week. One term. Four credits. Prerequisites: SC/EATS 2620 4.00 or SC/ENG 2120 4.00, SC/EATS 2630 3.00 or SC/ENG 2130 3.00, SC/EATS 3610 4.00 or SC/ENG 3110 4.00; SC/EATS 3620 4.00 or SC/ENG 3120 4.00. Corequisite: SC/EATS 3630 4.00 or SC/ENG 3130 4.00.

Cross-listed to: SC/EATS 3640 4.00 and SC/ENG 3140 4.00

SC/EATS 3650 4.00 Photogrammetry. Image and object space. Direct and inverse problems of projective and similarity coordinate transformations. Collinearity and coplanarity. Orientation procedures. Measurement and correction of image coordinates. Stereomodel formation and error analysis. Analog, analytical, independent model, strip and block adjustments. Image rectification. DEM generation. Digital Mapping Applications. Project planning. Three lecture hours and three hours of laboratory exercises per week. One term. Four credits. Prerequisites: SC/EATS 2620 4.00 or SC/ENG 2120 4.00; SC/EATS 3620 4.00 or SC/ENG 3120 4.00. Corequisite: SC/EATS 3630 4.00 or SC/ENG 3130 4.00.

Cross-listed to: SC/EATS 3650 4.00 and SC/ENG 3150 4.00

SC/EATS 3660 3.00 Advanced Field Surveys. A two-week camp comprising field and laboratory work. It involves organizational, planning, scheduling and logistical aspects of high precision field operations related to engineering physics, establishment and observation of control networks for construction and monitoring large engineering structures. Two week field surveys. No lectures. Prerequisite: SC/EATS 3640 4.00 or SC/ENG 3140 4.00.

Cross-listed to: SC/EATS 3660 3.00 and SC/ENG 3160 3.00

SC/EATS 4000 3.00 Research Project. A major written report or thesis on field measurements, laboratory research or computer modelling in the Earth or atmospheric sciences. Work is supervised by a faculty member. Open to exceptional students. One term. Three credits. Prerequisite: Written permission of the department Chair.

SC/EATS 4000 6.00 Research Project. A major written report or thesis on field measurements, laboratory research or computer modelling in the Earth or atmospheric sciences. Work is supervised by a faculty member. Open to exceptional students. Two terms. Six credits. Prerequisite: Written permission of the department Chair.

SC/EATS 4001 6.00 Space and Communication Sciences Workshop. This course is intended to allow the student to carry out the development of a specific space project, under the supervision of a faculty member, a government scientist or an industrial associate. The equivalent of nine laboratory hours per week for two terms. Prerequisites: Satisfactory completion of the 3000-level courses in the space and communication sciences core. Degree credit exclusion: AK/AS/SC/COSC 4080 3.00.

Cross-listed to: SC/COSC 4001 6.00 and SC/EATS 4001 6.00 and SC/PHYS 4001 6.00

SC/EATS 4010 6.00 Applications of Geophysics and Interpretation Theory. Seismic, gravity and electromagnetic methods in applied geophysics and their interpretation. Mining and petroleum exploration, engineering, hydrological and environmental applications of geophysics are included. The laboratory involves instrumental surveys on campus and reduction and interpretation of previous field school measurements. Normally offered in alternate years. Two lecture hours and a laboratory session. Two terms. Six credits. Prerequisites: SC/EATS 3010 2.00; SC/EATS 3011 1.00; SC/EATS 3020 3.00; SC/EATS 3180 3.00.

SC/EATS 4020 3.00 Time Series and Spectral Analysis. Treatment of discrete sampled data by linear optimum Wiener filtering, minimum error energy deconvolution, autocorrelation and spectral density estimation, discrete Fourier transforms and frequency domain filtering and the Fast Fourier Transform algorithm. Three lecture hours. One term. Three credits. Prerequisites: AK/AS/SC/COSC 1540 3.00 or equivalent FORTRAN programming experience; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00. Degree credit exclusions: AK/AS/SC/COSC 4242 3.00, AK/AS/SC/COSC 4451 3.00, AS/SC/MATH 4130B 3.00, AS/SC/MATH 4930C 3.00.

Cross-listed to: SC/EATS 4020 3.00 and AS/MATH 4830 3.00 and SC/MATH 4830 3.00 and SC/PHYS 4060 3.00

SC/EATS 4050 3.00 Synoptic Meteorology I. Analysis of mid-latitude synoptic scale weather systems: an introduction to storm tracks, fronts and air masses, and diagnostic methods. Analysis and interpretation of surface weather maps and upper-air charts. Two lecture hours, three laboratory hours. Fall term. Three credits. Prerequisite or corequisite: SC/EATS 3040 3.00.

SC/EATS 4051 3.00 Synoptic Meteorology II. Synoptic and mesoscale weather systems with emphasis on prediction: focus on forecasting with emphasis on the interpretation of numerical weather prediction models such as the GEM, MC2 and SEF models. Satellite and radar image interpretation for nowcasting. Two lecture hours, three laboratory hours. Winter term. Three credits. Prerequisite: SC/EATS 4050 3.00.

SC/EATS 4120 3.00 Cloud Physics and Radar Meteorology. Thermodynamics of cloud processes. Buoyancy and convection. Weather radar. Storms and associated precipitation. Cloud droplet formation and growth of ice crystals. Snow, graupel and hail. Microphysical processes and climate. Normally offered in alternate years. Three lecture hours. One term. Three credits. Prerequisite or corequisite: SC/EATS 3030 3.00.

SC/EATS 4130 3.00 Atmospheric Dynamics II. The theory and behaviour of Rossby, baroclinic and internal gravity waves in the atmosphere, including their origin, structure and propagation. Barotropic and baroclinic instability and the global circulation of the atmosphere. Normally offered in alternate years. Three lecture hours. One term. Three credits. Prerequisite: SC/EATS 3040 3.00.

SC/EATS 4140 3.00 Numerical Weather Prediction. The development of computational techniques for the solution of problems in atmospheric dynamics. The construction of numerical models for the prediction of weather. Three lecture hours per week, eight three-hour laboratory sessions. One term. Three credits. Prerequisites: SC/EATS 3040 3.00; AK/AS/SC/COSC 1540 3.00 or equivalent FORTRAN programming experience. Prerequisite or corequisite: SC/EATS 4130 3.00 strongly recommended.

SC/EATS 4160 3.00 Climate and Climate Change. The Earth's climate and the general circulation of the atmosphere. Climate models. Long-term stability of the Earth's climate. Anthropogenic impact on the climate,

carbon dioxide and other climate change issues. Normally offered in alternate years. Three lecture hours. One term. Three credits. Prerequisite: SC/EATS 2010 3.00 or SC/EATS 3040 3.00 or permission of the instructor.

SC/EATS 4220 3.00 Remote Sensing of the Earth's Surface. Principles used in extracting physical information about the Earth's surface using remote sensing. Remote sensing in the visible, short-wave infrared, thermal infrared and microwave regions is discussed in terms of potential applicability to forestry, agriculture, water resources and geology. Two lecture hours, three laboratory hours. One term. Three credits. Prerequisite(s): SC/PHYS 2020 3.00, or SC/PHYS 2060 3.00, or both SC/PHYS 2211 1.00 and SC/PHYS 2212 1.00.

SC/EATS 4230 3.00 Remote Sensing of the Atmosphere. An introduction to and summary of the area of remote sensing of the atmosphere from space platforms and from the ground. Topics include atmospheric radiation, atmospheric spectroscopy, inversion theory, instrumentation, satellites, space platforms and future technology. Three lecture hours per week, occasional laboratory sessions. One term. Three credits. Prerequisites: SC/EATS 2010 3.00 or SC/PHYS 2060 3.00; AS/SC/MATH 1025 3.00; AS/SC/MATH 2015 3.00; AK/AS/SC/MATH 2270 3.00. Prerequisite or corequisite: SC/EATS 3030 3.00 or permission of the course director.

SC/EATS 4240 3.00 Storms and Weather Systems. The study of mesoscale circulations and precipitating storm systems. Basic governing equations and instabilities. Nature and evolution of isolated convection, thunderstorms, mesoscale convective systems, precipitation bands, extratropical cyclones, fronts and frontogenesis, hurricanes, blizzards, polar lows and orographic storms. Normally offered in alternate years. Three lecture hours. One term. Three credits. Prerequisites or corequisites: SC/EATS 3040 3.00; SC/EATS 4120 3.00.

SC/EATS 4400 3.00 Geographical Information Systems (GIS) and Data Integration. Project-oriented geomatics course using GIS systems (Arc/Info and S-PLus or SPSS for UNIX) and various techniques (map algebraic, statistical, fuzzy logic, AI, neural network and fractal/multifractal) for integrating diverse dataset (geological, geophysical, geochemical, remote sensing and GPS). Normally offered in alternate years. Two lecture hours, two laboratory hours. One term. Three credits. Prerequisite: One of SC/EATS 3300 3.00, AS/SC/GEOG 3180 3.00, AS/SC/GEOG 4340 3.00, ES/ENVS 3520 3.00, ES/ENVS 4520 3.00, or permission of the instructor.

SC/EATS 4610 3.00 Global Positioning Systems. Positioning by space vehicles. Coordinate systems and transformations. GPS, GLONASS, GALILEO, Satellite Laser Ranging, Very Long Baseline Interferometry. Positioning of moving vehicles and platforms: marine, land, airborne and space vehicles. GPS/INS integration. Real time kinematic applications. Three lecture hours weekly and three hours of laboratory exercises every other week. One term. Three credits. Prerequisites: SC/EATS 3020 3.00; SC/EATS 3610 4.00, SC/EATS 3620 4.00, or permission of the course director.

Cross-listed to: SC/EATS 4610 3.00 and SC/ENG 4110 3.00

SC/EATS 4620 3.00 Physical and Space Geodesy. Local treatment of the Earth's gravity field. Boundary value problems. Normal and disturbing potential, the normal gravity formula. Geoid, geoidal undulations, deflections of the vertical. Stokes and Vening Meinesz formulae. Gravimetry and gravity reductions. Height systems. Tides. Gravity space missions. Three lecture hours weekly and three hours of laboratory exercises every other week. One term. Three credits. Prerequisites: SC/EATS 3020 3.00; SC/EATS 3610 4.00; SC/EATS 3620 4.00; SC/EATS 4610 3.00.

Cross-listed to: SC/EATS 4620 3.00 and SC/ENG 4120 3.00

SC/EATS 4630 3.00 Digital Imaging and Applications. Digital imaging from remote platforms. Image processing and analysis, including radiometric and geometric corrections and geometric enhancements, multispectral classification, digital photogrammetry fundamentals, workstations, potogrammetric processing. Two lecture hours and three hours of laboratory exercises per week. One term. Three credits. Prerequisites: SC/EATS 3650 4.00; SC/EATS 4220 3.00.

Cross-listed to: SC/EATS 4630 3.00 and SC/ENG 4130 3.00

SC/EATS 4640 3.00 Digital Terrain Models and Lidar Applications. Digital Terrain Modeling concepts. Mathematical techniques in data acquisition, processing, storage, manipulation and applications. DTM. Surface representation using moving averages, linear projection and Kriging techniques. Grid resampling methods and search algorithms. DTM derivatives and applications. LIDAR systems and applications. Two lecture hours and three hours of laboratory exercises per week. One term. Three credits. Prerequisites: SC/EATS 2620 4.00; SC/EATS 3620 4.00.

Cross-listed to: SC/EATS 4640 3.00 and SC/ENG 4140 3.00

SC/EATS 4650 3.00 Hydrography. Hydrography and its role in offshore management. Elements of oceanography, tides and water levels, seabed and sea water properties. Underwater acoustics. Bathymetric and imaging methods. Marine positioning and navigation. Three lecture hours and three hours of laboratory exercises per week. One term. Three credits. Prerequisite: SC/EATS 4610 3.00.

Cross-listed to: SC/EATS 4650 3.00 and SC/ENG 4150 3.00

SC/EATS 4660 3.00 Cadastral Surveys and Land Registration Systems. Cadastral systems, survey law and the role of the professional land surveyor. The Dominion Lands Survey System and Land Surveys Acts and Regulations. Cadastral surveys, including surveys of Canada lands for aboriginal land claims and coastal boundaries. Land registration systems in Canada. Three lecture hours and three hours of laboratory exercises per week. One term. Three credits. Prerequisite: SC/EATS 2620 4.00 or SC/ENG 2120 4.00.

Cross-listed to: SC/EATS 4660 3.00 and SC/ENG 4160 3.00

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East Asian Studies – Arts

Program Office:
   030C Founders College, 416-736-5148
Web Address:
   http://www.yorku.ca/easp/
Program Coordinator:
   P. Giordan, Languages, Literatures and Linguistics
Affiliated Faculty:
   A. Acharya, Political Science; B.N. Cham, Glendon/Political Science; M. Gewurtz, History/Humanities; P. Giordan, Languages, Literatures and Linguistics; T. Goossen, Humanities; S. Henders, Political Science; T. Hyun, Humanities; P. Kelly, Geography; J. Kim, History; B. Luk, History; D.P. Lumsden, Anthropology; C.J. McMillan, Schulich/Administrative Studies; J.A. Nagata, Anthropology; N. Ota, Languages, Literatures and Linguistics; S. Otto, Fine Arts/Music; A. Schlosser, Fine Arts/Theatre; A. Schrauwers, Anthropology; J. Van Esterik, Social Science; P. Van Esterik, Anthropology; B.T. Wakabayashi, History; X. Xueqing, Languages, Literatures and Linguistics

The East Asian Studies Program offers a broadly based approach to the study of the peoples and civilizations of East Asia. It is a rich and flexible program of study that brings together courses from the academic disciplines of the humanities, social sciences, languages and literature and fine arts. The East Asian Studies Program offers a number of undergraduate degree program choices: within the general guidelines and requirements of each, a student can choose from a rich array of course offerings every year to create a combination which best serves her/his academic interests and career aspirations. Students should consult the coordinator when designing their programs of study.

For specific program requirements and the list of program courses, please consult the Faculty of Arts Programs of Study section of this Calendar.

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