

28 Educational Studies

Department of Educational Studies

Administrative Offices:
Education Building, Room 244
3700 McTavish Street
Montreal QC H3A 1Y2

Telephone: (514) 398-4525
Fax: (514) 398-4529

Website: <http://www.education.mcgill.ca/des/default.html>

Graduate Programs:
Duggan House, Room 204
3724 McTavish Street
Montreal QC H3A 1Y2

Telephone: (514) 398-4531
Fax: (514) 398-7436

Chair — Anthony Paré

Director of Graduate Programs — Lynn Butler-Kisber

To contact the academic staff of the Department: telephone (514) 398-6746 followed by an extension number, or fax (514) 398-7436. The administrative office is open Monday to Friday from 08:30 to 16:30. During the first week of classes, the office will remain open until 18:00.

Dr. Butler-Kisber is responsible for academic advising for all graduate programs in the Department. For general information, please initially contact the Graduate Program Coordinator at (514) 398-4531.

28.1 Staff

Emeritus Professors

Patrick X. Dias; B.A., M.A.(Karachi), B.Ed., Ph.D.(Montr.)
Margaret Gillett; B.A., Dip. Ed.(Syd.), M.A.(Russel Sage),
Ed.D.(Col.) (*William C. Macdonald Emeritus Professor of Education*)
Wayne C. Hall; B.A., M.A.(Bishop's) (*William C. Macdonald Emeritus Professor of Education*)
Norman Henchey; B.A., B.Péd., Lic.Péd.(Montr.), Ph.D.(McG.)

Professors

David Dillon; B.A.(St. Columban's), M.S.(S.W. Texas St. Univ.),
Ph.D.(U. of Texas, Austin)
John B. Gradwell; B.A., M.A.(Cal. State), Ph.D.(Iowa)
Bernard Shapiro; B.A.(McG.), M.A.T., Ed.D.(Harv.)
John R. Wolforth; B.Sc.(Sheff.), M.A., Ph.D.(U.B.C.)

Associate Professors

Helen Amoriggi; B.Sc., M.A.(Rhode Island), Ed.D.(Boston)
Gary Anderson; B.Sc., M.A.(McG.), Ed.D.(Harv.)
Clermont Barnabé; B.Péd.(Laval), L.Péd.(Montr.), Ph.D.(S.U.N.Y., Buffalo)
Ann J. Beer; B.A.(Oxon.), M.A.(Tor.), D.Phil.(Oxon.)
Jon G. Bradley; B.A., M.A.(Sir G.Wms.)
Lynn Butler-Kisber; B.Ed., M.Ed.(McG.), Ed.D.(Harv.)
June E. Cooper; B.A.(Acad.), M.Ed.(Stetson)
Winston G. Emery; B.Ed., M.A.(McG.), Ph.D.(Montr.)
Nancy S. Jackson; B.A., M.A., Ph.D.(U.B.C.)
Yarema G. Kelebay; B.A., B.Ed.(Montr.), B.A.(Hons.), M.A.
(Sir G.Wms.), Ph.D.(C'dia) (*joint appt. with Culture and Values*)
Cathrine Le Maistre; B.Sc., Dip.Ed.(Exeter), M.Ed., Ph.D.(McG.)
Charles S. Lusthaus; B.S., M.S.(Canisius), Ph.D.(S.U.N.Y.)
David D. McWethy; B.S., M.A.(Mich. St.), Ph.D.(Iowa St.) (*joint appt. with Educational and Counselling Psychology*)
Christopher S. Milligan; B.A.(Sir G.Wms.), M.Ed.(McG.),
Ed.D.(Tor.)
Claudia A. Mitchell; B.A.(Brandon), M.A.(Mt. St. Vincent),
Ph.D.(Alta.)
Anthony Paré; B.Ed, M.Ed., Ph.D.(McG.)
Howard N. Riggs; B.Ed.(Alta.), M.A., Ph.D.(Minn.)
Phyllis Shapiro; Dip.Ed.(McG.), B.A.(C'dia), M.Ed., D.Ed.(Boston)

Assistant Professors

Brian J. Alters; B.Sc., Ph.D.(USC)
Patricia Boston; B.A., M.A.(C'dia), Ph.D.(McG.)
Sylvia Sklar, Dip. Ed.(McG.), B.A.(C'dia), M.Ed.(McG.)
William Smith; B.A.(Carl.), M.A., Ph.D.(McG.)

Faculty Lecturers

Audrey Berner; B.A., M.Ed.(McG.), Dip. Ed.(Alta.)
Linda Cooper; B.A.(C'dia), M.A.(McM.)
Carolyn Pittenger; B.A., M.A.(SUNY Albany), M.Ed.(McG.)
Judith Ritter; B.A.(Michigan State), M.A.(McG.), Dip.Adult
Ed./ESL(Br.Col.)
Diane Klemphner-Russell; B.Sc.(American U.), M.Ed.(Boston)
Donna Lee Smith; B.A., M.A.(C'dia)
Sharron Wall; B.A., Dip.Human Relations, M.A.(McG.)

Adjunct Professors

Annie Alaku, B.Ed.(McG.) (*Kativik School Board*) (*joint appt. with Educational and Counselling Psychology*)
John S. Allen; M.Sc.(C'dia)
Patrick A. Baker; B.Com., B.A.(Sir G.Wms.), M.Ed.(McG.)
Mary Bear; B.Ed.(Québec)
Luci Bobbish-Salt; B.Ed.(U.Q.A.C.)
Tino Bordonaro; B.A.(Bishop's), M.A.(McG.)
G. Scott Conrod; B.Sc.(Sir G. Wms.), M.Ed.(McG.)
William Corrigan; M.T.M.(C'dia)
Edward Cross; B.A.(Carl.), M.Ed.(McG.)
Elaine Freeland; M.A.(Montr.)
Carol Ann Horn; Dip.Ed., B.Ed.(McG.)
Kaia'titake Jacobs; B.Ed.(Qué.)
Ooloota Maatiusi; B.Ed.(McG.)
Noel Mcdermott; B.A.(Lond.), M.A.(Birming.), M.Phil.(Wat.)
Marianna McVey; B.A.(Carl.), M.A., Ed.D.(Syracuse)
Howard G. Martin; M.Ed.(McG.)
Dan Mason; Ph.D.(Ott.)
Kevin O'Donnell; B.A.(Montr.)
Peesee Pitsiulak; B.Ed.(McG.)
Linda Simon; B.Ed.(Montr.)
Clarence Tomatuk; M.Ed.(McG.)
Gilbert Whiteduck; B.Ed.(Québec), M.Ed.(Carl.)
Doris Winkler; B.A.(Sir G.Wms.), M.Ed.(Harv.)
Vicki Zack; B.A., Dip.Ed.(McG.), M.A.(Montr.), Ph.D.(McG.)

Professional Associate

Marilyn Blaeser; B.Ed.(C'dia), M.A.(Lond.)

28.2 Programs Offered

The Department of Educational Studies is composed of the former Departments of Administration and Policy Studies in Education and Curriculum and Instruction. The Department currently offers M.Ed. and M.A. degrees.

The M.Ed. is intended mainly to serve the needs of educational leaders in schools, colleges and non-formal educational settings who are interested in advanced qualifications to enhance knowledge and improve professional skills.

The M.A. program is research oriented. It involves in-depth study of suitable research topics related to administrative processes and policies, curriculum and instruction, and literacy in formal and informal educational institutions and settings.

Prospective applicants to the Ph.D. (*ad hoc*) program should contact the Department at (514) 398-4531.

28.3 Admission Requirements

Candidates must hold a Bachelor's degree from a recognized university with a minimum standing equivalent to a CGPA of 3.0 out of 4.0, or 3.2 out of 4.0 for the last two full-time academic years.

M.A. Educational Studies (Thesis Option) Curriculum or Leadership Concentration

1. Students should have an honours or a similar good standing in their undergraduate academic work.
2. Normally students should have at least two years of relevant educational experience (teaching or related professional experience).

3. A mastery of spoken and written English is required. For international students, a TOEFL score of 550 is required. The Department reserves the right to interview candidates before the period of initial registration.
4. A personal statement of academic and professional experience and interests and **intended research direction** should be submitted to the Admissions and Review Committee.
5. Two letters of recommendation are required: usually one from a past university-level instructor and one that attests to the student's potential to do research.

M.A. Educational Studies (Non-Thesis Option) Curriculum or Leadership Concentration

1. Students should have an honours or a similar good standing in their undergraduate academic work.
2. Normally students should have at least two years of relevant educational experience (teaching or related professional experience).
3. A mastery of spoken and written English is required. For international students, a TOEFL score of 550 is required. The Department reserves the right to interview candidates before the period of initial registration.
4. A personal statement of academic and professional experience and interests should be submitted to the Admissions and Review Committee.
5. Two letters of recommendation are required: usually one from a past university-level instructor and one from a supervisor in an educationally relevant context.

28.4 Application Procedure

Applications will be considered upon receipt of:

1. application form;
2. official transcripts;
3. \$60 applicant fee.

The deadlines for submitting applications are:

- Fall session – March 1
- Winter session – November 1
- Summer session – February 1

For international students, applications must be submitted at least 6 months prior to the official deadline indicated above.

All documentation is to be submitted directly to the Graduate Program Coordinator in the Department of Educational Studies.

28.5 Program Requirements

M.A. Educational Studies (Thesis and Non-Thesis Options)

Curriculum or Leadership Concentration

Graduate students in the Department of Educational Studies explore areas of education with special concern for the relationship between curriculum and educational leadership. The program includes the social, cultural, and ideological factors that influence formal and informal contexts for learning. Particular attention is paid to the content and activity of the curriculum and to the ways in which leadership at local, national, and international levels affects the nature and practice of education.

Curriculum Concentration

This concentration is designed for experienced teachers and other practitioners in educational settings who are interested in pursuing graduate work that has its roots in the field of curriculum and instruction. It draws from the expertise of Department members in broad areas of curriculum studies: language and literacies for learning, pedagogy, media and cultural studies; from expertise in specific curriculum areas: English, Language Arts, Mathematics, Science, Vocational Education and the Social Sciences; from the expertise of those working in the Centre for the Study and Teaching of Writing, and from the various Department members whose funded research investigates areas such as literacy, global education, gender, workplace learning, student engagement, and teacher education.

Leadership Concentration

The Leadership concentration aims to prepare men and women as educational leaders of broad vision and integrity, committed to personal and institutional improvement in schools, adult education centres, non-governmental organizations, and other settings of formal or informal learning. This goal requires the ongoing development of reflective practitioners who have a sense of educational purpose and mission, an understanding of frameworks to guide action, the capacity to anticipate needs, the ability to exercise professional judgment within the realities of policy frameworks, and the ability to both lead and support institutional and organizational change at all levels.

M.A. EDUCATIONAL STUDIES (THESIS OPTION) (45 credits)

Curriculum Concentration

Required Courses (9 credits)

- 411-609 (3) Issues in Educational Studies
- 455-606 (3) Seminar in Curriculum Inquiry
- 411-620 (3) Meanings of Literacy

Complementary Courses (6 credits)

- 411-690 (3) Research Methods
 - 411-692 (3) Qualitative Research Methods
 - 411-679 (3) Interpretive Inquiry
- or equivalent

Elective Courses (6 credits)

Two courses chosen in consultation with an advisor.

Thesis Component – Required (24 credits)

- 411-621 (6) Thesis I
- 411-623 (6) Thesis II
- 411-699 (12) Thesis III

Leadership Concentration

Required Courses (9 credits)

- 411-609 (3) Issues in Educational Studies
- 411-673 (3) Leadership Theory in Education
- 411-610 (3) Leadership in Action

Complementary Courses (6 credits)

- 411-690 (3) Research Methods
 - 411-692 (3) Qualitative Research Methods
 - 411-679 (3) Interpretive Inquiry
- or equivalent

Elective Courses (6 credits)

Two (2) courses chosen in consultation with an advisor.

Thesis Component – Required (24 credits)

- 411-621 (6) Thesis I
- 411-623 (6) Thesis II
- 411-699 (12) Thesis III

M.A. EDUCATIONAL STUDIES (NON-THESIS OPTION) (45 credits)

Curriculum Concentration

Required Courses (12 credits)

- 411-609 (3) Issues in Educational Studies
- 411-690 (3) Research Methods
- 455-606 (3) Seminar in Curriculum Inquiry
- 411-620 (3) Meanings of Literacy

Complementary Courses (15 credits)

Four (4) Curriculum courses

(Chosen in consultation with an advisor and with the approval of Program Director.)

One (1) Leadership course

Elective Courses (6 credits)

Chosen in consultation with an advisor.

Project Component – Required (12 credits)

- 411-625 (6) Project I
- 411-627 (6) Project II

Leadership Concentration**Required Courses** (12 credits)

- 411-609 (3) Issues in Educational Studies
 411-690 (3) Research Methods
 411-673 (3) Leadership Theory in Education
 411-610 (3) Leadership in Action

Complementary Courses (15 credits)

Four (4) Leadership courses
 (Chosen in consultation with an advisor and with the approval of Program Director.)

One (1) Curriculum course

Elective Courses (6 credits)

Chosen in consultation with an advisor.

Project Component – Required (12 credits)

- 411-625 (6) Project I
 411-627 (6) Project II

M.A. ADMINISTRATION AND POLICY STUDIES IN EDUCATION

(48 credits)

(This program is no longer offered to new students.)

Required Courses (9 credits)

- 411-612 (3) Foundations of Administration and Policy Studies in Education I
 411-613 (3) Foundations of Administration and Policy Studies in Education II
 411-690 (3) Research Methods

Complementary Course (3 credits)

- 411-691 (3) Quantitative Research Methods
 or 411-692 (3) Qualitative Research Methods

Elective Courses (12 credits)

4 graduate courses chosen in consultation with an advisor.

Thesis Component – Required (24 credits)

- 411-621 (6) Thesis I
 411-623 (6) Thesis II
 411-699 (12) Thesis III

M.Ed. ADMINISTRATION AND POLICY STUDIES IN EDUCATION

(45 credits)

(This program is no longer offered to new students.)

Required Courses (15 credits)

- 411-612 (3) Foundations of Administration & Policy Studies I
 411-613 (3) Foundations of Administration & Policy Studies II
 411-690 (3) Research Methods
 411-695 (3) Policy Studies in Education
 423-614 (3) Sociology of Education

Complementary Courses (6 or 12 credits)

At least one course from Applications

- 411-625 (6) Special Project
 411-634 (12) Monograph Preparation and Presentation
 411-683 (6) Advanced Practicum

Elective Courses (18 or 24 credits)**M.Ed. CURRICULUM STUDIES** (45 credits)

(This program is no longer offered to new students.)

Required Courses (33 credits)

Departmental Core:

- 455-604 (3) Literacy and Learning Across the Curriculum
 455-605 (3) Research Methods
 455-606 (3) Seminar in Curriculum Inquiry

Curriculum Studies:

- 455-602 (3) Foundations of Curriculum
 455-614 (3) Numeracy Across the Curriculum
 455-613 (6) Selected Readings in Curriculum

Complementary Courses (12 credits)

12 credits selected from the following:

- 425-601 (3) Contemporary Issues in Post-Elementary Education
 425-602 (3) Special Studies in Subject Area I

- 425-604 (3) Special Studies in Subject Area II
 425-631 (3) Principles, Practices and Trends in Vocational Education
 425-651 (3) Mathematics Curriculum Issues
 425-671 (3) Issues in Science Curriculum
 425-681 (3) Social Sciences Secondary Curriculum
 433-635 (3) Mathematics Elementary Curriculum
 433-660 (3) Social Sciences Curriculum
 433-661 (3) Global Education
 448-607 (3) Issues in Educational Technology
 455-603 (3) Reading Course (6 credits)
 455-615 (3) Discourse in Teacher Education
 455-616 (3) Reading Course
 455-636 (3) Issues in Pedagogical Practices
 455-637 (3) Gender, Genre, and Schooling
 455-638 (3) Science in Elementary Curriculum

Research Monograph – Required (12 credits)

- 455-690 (12) Monograph Preparation and Presentation

M.Ed. LITERACY STUDIES (45 credits)

(This program is no longer offered to new students.)

Required Courses (21 credits)

Departmental Core:

- 455-604 (3) Literacy and Learning Across the Curriculum
 455-605 (3) Research Methods
 455-606 (3) Seminar in Curriculum Inquiry

Literacy Studies:

- 455-607 (3) Foundations of Literacy
 455-608 (6) Selected Reading in Literacy
 455-635 (3) Advanced Written Communication

Complementary Courses (12 credits)

selected from the following:

- 455-603 (6) Reading Course
 455-609 (3) Drama and Literacy
 455-610 (3) Literature: Children/Young Adults
 455-611 (3) Issues in Adult Literacy
 455-612 (3) Media Literacy
 455-616 (3) Reading Course
 455-617 (3) Special Topics in Literacy Studies
 455-621 (3) Trends and Issues in Literacy Studies
 455-623 (3) Emergent Literacy
 455-627 (3) Responding to Texts
 455-628 (3) Literacy in Multilingual Settings
 455-629 (3) Writing: Theory, Research, and Practice
 455-630 (3) Assessment of Literacy
 455-631 (3) Individual Assessment in Literacy
 455-633 (3) Practicum in Literacy
 455-634 (3) Supervision of Literacy Programs
 455-642 (3) Language Development

Research Monograph – Required (12 credits)

- 455-690 (12) Monograph Preparation and Presentation

28.6 Courses

The course credit weight is given in parentheses (#) after the course title.

- Denotes courses not offered 2000-01.

411-603 READING COURSE. (6) Independent study of an approved topic with the guidance of a faculty advisor.

411-606 EDUCATIONAL LEADERSHIP ISSUES. (3) Critical analysis and appraisal of leadership issues across geographic, linguistic, racial, gender and cultural contexts from a comparative perspective. Students will analyze their own experience.

● **411-608 COMPUTER TECHNOLOGY IN EDUCATION.** (3) (Prerequisite: 432-200 or equivalent (determined by the instructor).)

411-609 ISSUES IN EDUCATIONAL STUDIES. (3) The purpose is to explore critically the contemporary trends, issues, historical contexts and implications in curriculum and leadership through processes that engage students with each other and various members of the Department.

411-610 LEADERSHIP IN ACTION. (3) Teaching of the use of reflective practice as a means of developing individual theories of action in educational settings. It provides students with the knowledge, skills and attitudes necessary to engage in processes that can improve individual and organizational performance. Special emphasis will be given to communication, problem solving and decision-making.

● **411-612 FOUNDATIONS OF ADMINISTRATION & POLICY STUDIES IN ED. I.** (3)

● **411-613 FOUNDATIONS OF ADMINISTRATION & POLICY STUDIES IN ED. II.** (3)

411-616 READING COURSE. (3) Independent study of an approved topic with the guidance of a faculty advisor.

● **411-618 EDUCATION IN QUÉBEC.** (3)

411-620 MEANINGS OF LITERACY. (3) Investigation of basic issues related to definitions of literacy. Issues include new directions in literacy and education, the need for non-print literacies in contemporary life, and the challenges these changes present for educators.

411-621 THESIS I. (6) Departmental seminar to guide students through the process of developing a thesis proposal, identifying a supervisor, research sites and participants, and considering ethical issues.

411-623 THESIS II. (6) Continuation of 411-621.

411-625 PROJECT I. (6) Theoretical or practical project under the supervision of a departmental faculty member to explore and analyze an area of interest relevant to the concentration in leadership or curriculum.

411-627 PROJECT II. (6) Extension of Project I or new project.

411-628 EDUCATION RESOURCE MANAGEMENT. (3) An exploration of the concepts and skills necessary to manage the human and financial resources of small organizations (schools, NGOs, departments). Among the areas to be explored are labour contracts, supervision, grantsmanship, use of volunteers, managing site-based budgets.

● **411-629 QUALITY OF WORKING LIFE IN EDUCATIONAL INSTITUTIONS.** (3)

● **411-630 POLICY ISSUES IN WORKPLACE LEARNING.** (3)

● **411-634 MONOGRAPH PREPARATION AND PRESENTATION.** (4) (2)

● **411-635 FISCAL ACCOUNTABILITY IN EDUCATION.** (3)

● **411-637 MANAGING EDUCATIONAL CHANGE.** (3)

● **411-640 CURRICULUM THEORY.** (3)

● **411-642 CURRICULUM DESIGN.** (3)

411-644 CURRICULUM DEVELOPMENT AND IMPLEMENTATION. (3) Processes of planning, developing, implementing and adapting curricula in various learning systems.

● **411-645 PRACTICUM IN THE SUPERVISION OF INSTRUCTION.** (3)

411-646 PLANNING AND EVALUATION. (3) Knowledge and skills development in educational planning and monitoring at the service delivery unit (school, non-governmental organization, adult education centre). Areas of study include strategic management, results-based management, log frame analysis, systems assessment, stakeholders analysis, and fourth generation evaluation.

● **411-653 INSTITUTIONAL EVALUATION.** (3)

● **411-654 CASE STUDIES.** (3)

● **411-659 PROGRAM EVALUATION.** (3)

● **411-660 COMMUNITY RELATIONS IN EDUCATION.** (3)

● **411-664 EDUCATION AND LAW.** (3)

● **411-669 POLICY ISSUES IN CANADIAN EDUCATION.** (3)

● **411-671 THE PRINCIPALSHIP.** (3)

411-673 LEADERSHIP THEORY IN EDUCATION. (3) Concepts of leadership and the role of leadership in educational settings.

411-674 ORGANIZATION THEORY AND EDUCATION. (3) Contemporary organization theories and their implications for education and the management of learning environments.

411-675 SPECIAL TOPICS I. (3) Important current issues in the field of Educational Studies. (Content varies from year to year.)

● **411-676 ORGANIZING NON-FORMAL LEARNING.** (3)

411-677 SPECIAL TOPICS II. (3) Important current issues in the field of Educational Studies. (Content varies from year to year.)

411-679 INTERPRETIVE INQUIRY. (3) Focus on issues of voice, reflectivity, and representation when using interpretive frameworks in qualitative research.

411-681 PRACTICUM IN ADMINISTRATIVE STUDIES. (3) Field studies and applied research, including the preparation of a research report.

411-682 PRACTICUM IN POLICY STUDIES. (3) (Prerequisite: Completion of required courses.) Field studies and applied research, including the preparation of a research report.

411-683 ADVANCED PRACTICUM. (6) (Prerequisite: Completion of required courses.) A field experience in which the intern performs a relevant professional role under supervision.

411-690 RESEARCH METHODS. (3) Students will develop a critical understanding of quantitative and qualitative research in the field of Educational Studies. Students will learn about the purposes and types of research, the research process and how to evaluate and use research information.

● **411-691 QUANTITATIVE RESEARCH METHODS.** (3)

411-692 QUALITATIVE RESEARCH METHODS. (3) Theoretical and practical exploration of the foundations of qualitative methods, with emphasis on underlying principles.

411-693 SCHOOL IMPROVEMENT APPROACHES. (3) Analysis of action research approaches used to improve school performance.

● **411-695 POLICY STUDIES IN EDUCATION.** (3)

● **411-699 THESIS III.** (12)

● **425-601 CONTEMPORARY ISSUES IN POST-ELEMENTARY EDUCATION.** (3)

● **425-602 SPECIAL STUDIES IN THE SUBJECT AREA I.** (3)

● **425-604 SPECIAL STUDIES IN THE SUBJECT AREA II.** (3)

● **425-631 PRINCIPLES, PRACTICES AND TRENDS IN VOCATIONAL EDUCATION.** (3)

● **425-651 MATHEMATICS CURRICULUM ISSUES.** (3)

425-671 ISSUES IN SCIENCE CURRICULUM. (3) Exploration of current research in science curricula, teaching methods, and conceptual change, and investigation of the relevant historical changes in science and science education. Students will probe these issues in relation to their interface with society, technology, work views, philosophy of science and philosophy of education.

● **425-681 SOCIAL SCIENCES SECONDARY CURRICULUM.** (3)

● **433-635 MATHEMATICS ELEMENTARY CURRICULUM.** (3)

433-655 SPECIAL TOPICS IN CURRICULUM STUDIES. (3) A detailed examination of a selected topic. The content will vary from year to year and will be announced prior to registration.

● **433-660 SOCIAL SCIENCES CURRICULUM.** (3)

433-661 GLOBAL EDUCATION. (3) Examines various theoretical and conceptual frameworks of global education; includes the historical development of global education and relationships to such associated subject areas as peace, multicultural and human rights education. Considers the design and delivery of global education in the school curriculum, and the effect of technology on global education.

● **448-607 ISSUES IN EDUCATIONAL TECHNOLOGY.** (3)

455-500 TUTORING WRITING. (3) Theory and practice of teaching writing through one-on-one conferencing. Focus on composition theory and research, rules of English usage, and tutorial teaching strategies. Practical experience offered through work in Writing Tutorial Service. Relevant for anyone who teaches or will teach in English at any level and in any subject.

● **455-602 FOUNDATIONS OF CURRICULUM.** (3)

455-603 READING COURSE. (6) Individualized guided study of a topic in the teaching of the candidates' specialties selected according to their interest and teaching experience.

455-604 LITERACY AND LEARNING ACROSS THE CURRICULUM. (3) Examination of the central role of language in learning across the curriculum: the processes by which pupils acquire information and understanding and the ways in which teaching must take account of these processes: learning through talk, learning by writing, learning from text.

455-605 RESEARCH METHODS. (3) Examination of current research and the implications for program design and development at the early childhood, elementary and secondary levels of education.

455-606 SEMINAR IN CURRICULUM INQUIRY. (3) Students will be introduced to debates that are current in curriculum studies which centre on the appropriate emphasis to be accorded to traditions of schooling. To join the debate, students will need to explore the nature of a variety of traditions and the concomitant curricular manifestations and approaches to pedagogy.

- **455-607 FOUNDATIONS OF LITERACY.** (3)

455-608 SELECTED READINGS IN LITERACY. (6) This course serves as a tutorial course that would normally involve the monograph supervisor. Students would concentrate their reading in an area pertinent to the monograph.

455-609 DRAMA AND LITERACY. (3) This course explores a range of approaches to the use of improvised drama in classrooms as a learning medium across the curriculum, with particular reference to the nature, use, and development of literacy.

455-610 LITERATURE: CHILDREN/YOUNG ADULTS. (3) An examination of the growth of children's literature from the Middle Ages to modern times, with special emphasis on its reflection of social, cultural, psychological and historical events, issues and norms of the times. Particular emphasis is given to its implications for school programs.

- **455-611 ISSUES IN ADULT LITERACY.** (3)

455-612 MEDIA LITERACY. (3) The course examines the nature and possibilities of media literacy education in schooling, including both the development of students' ability to critically analyze the mass, visual, electronic media in society as well as the development of their own ability to utilize various new media for their own communication.

- **455-613 SELECTED READINGS IN CURRICULUM.** (6)

- **455-614 NUMERACY ACROSS THE CURRICULUM.** (3)

455-615 DISCOURSE IN TEACHER EDUCATION. (3) This course provides a framework for graduate work in teacher education. Students will examine and critique the theoretical and professional literature and research on teacher education. By drawing from recent work in cultural studies, biography, pedagogical knowledge, and feminist pedagogy, students will be able to situate the literature both historically and culturally.

455-616 READING COURSE. (3) Individualized guided study of a topic in the teaching of the candidates' specialties selected according to their interest and teaching experience.

- **455-617 SPECIAL TOPICS IN LITERACY STUDIES.** (3)

- **455-621 TRENDS AND ISSUES IN LITERACY STUDIES.** (3)

- **455-622 MODELS OF READING AND WRITING.** (3)

- **455-623 EMERGENT LITERACY.** (3)

- **455-624 DEVELOPMENT OF MATURE READING.** (3)

455-627 RESPONDING TO TEXTS. (3) An examination of current theory and research on response to texts and implications for classroom practice at the elementary, secondary, and post-secondary levels. A special emphasis on the processes involved in reading texts, theories of audiences, and researching and assessing response to texts.

- **455-628 LITERACY IN MULTILINGUAL SETTINGS.** (3)

- **455-629 WRITING: THEORY, RESEARCH, AND PRACTICE.** (3)

- **455-630 ASSESSMENT OF LITERACY.** (3)

- **455-631 INDIVIDUAL ASSESSMENT IN LITERACY.** (3)

- **455-633 PRACTICUM IN LITERACY.** (3)

- **455-634 SUPERVISION OF LITERACY PROGRAMS.** (3)

455-635 ADVANCED WRITTEN COMMUNICATION. (3) Rhetorical practices and principles that remain constant across disciplines: generating and organizing ideas; setting goals; planning; considering readers; editing and revising. Students will analyze and produce texts that use the formats, rhetorical strategies, styles, genres, and other conventions of their disciplines.

- **455-636 ISSUES IN PEDAGOGICAL PRACTICES.** (3)

455-637 GENDER, GENRE, AND SCHOOLING. (3) This course addresses the influences of gender on language and learning, with particular attention to the role of curriculum, pedagogy, and texts in reflecting and giving shape to pupils' learning in the classroom.

- **455-638 SCIENCE IN ELEMENTARY CURRICULUM.** (3)

- **455-642 LANGUAGE DEVELOPMENT** (3)

- **455-690 MONOGRAPH PREPARATION AND PRESENTATION.** (12)

29 Electrical and Computer Engineering

Department of Electrical and Computer Engineering
McConnell Engineering Building
3480 University Street
Montreal, QC H3A 2A7
Canada

Telephone: (514) 398-7344

Fax: (514) 398-4470

E-mail: grad@ece.mcgill.ca

Website: <http://www.ece.mcgill.ca>

Chair — D.A. Lowther

Associate Chair (Director, Graduate Program) — J.P. Webb

29.1 Staff

Emeritus Professors

E.L. Adler; B.Sc.(Lond.), M.A.Sc.(Tor.), Ph.D.(McG.), Eng.
G.W. Farnell; B.A.Sc.(Tor.), S.M.(M.I.T.), Ph.D.(McG.), F.I.E.E.E.,
Eng.

T.J.F. Pavlasek; B.Eng., M.Eng., Ph.D.(McG.), Eng.

Professors

P.R. Belanger; B.Eng.(McG.), S.M., Ph.D.(M.I.T.), F.I.E.E.E., Eng.

M.L. Blostein; B.Eng., M.Eng.(McG.), Ph.D.(Ill.), Eng.

P.E. Caines; B.A.(Oxon.), D.I.C., Ph.D.(Lond.), F.I.E.E.E.,
F.C.I.A.R.

C.H. Champness; M.Sc.(Lond.), Ph.D.(McG.) (part-time)

F.D. Galiana; B.Eng.(McG.), S.M., Ph.D.(M.I.T.), Eng.

P. Kabal; B.A.Sc., M.A.Sc., Ph.D.(Toronto)

T. Le-Ngoc; M.Eng.(McG.), Ph.D.(Ott.), F.I.E.E.E.

M.D. Levine; B.Eng.(McG.), Ph.D.(Lond.), F.C.I.A.R., Eng.

D.A. Lowther, B.Sc.(Lond.), Ph.D.(C.N.A.A.), F.C.A.E., Eng.

B.T. Ooi; B.E.(Adel.), S.M.(M.I.T.), Ph.D.(McG.), Eng.

N.C. Rumin; B.Eng., M.Sc., Ph.D.(McG.), Eng.

J.P. Webb; B.A., Ph.D.(Cantab.)

Associate Professors

B. Champagne; B.Eng., M.Eng.(Montr.), Ph.D.(Tor.)

J. Clark; B.Sc., Ph.D.(Br.Col.)

F. Ferrie; B.Eng., M.Eng., Ph.D.(McG.)

V. Hayward; Dip.d'Ing.(ENSM, Nantes), Doc.Ing.(Orsay), Eng.

H. Leib; B.Sc., M.Sc.(Technion-Israel), Ph.D.(Tor.)

S. McFee; B.Eng., Ph.D.(McG.)

H. Michalska; B.Sc., M.Sc.(Warsaw), Ph.D.(Lond.)

D. Plant; M.S., Ph.D.(Brown)

G. Roberts; B.A.Sc.(Wat.), M.A.Sc., Ph.D.(Tor.), Eng.

I. Shih; M.Eng., Ph.D.(McG.)

Assistant Professors

J. Bajcsy; B.Sc.(Harv.), M.Eng., Ph.D.(Prin.)
 B. Boulet; B.Sc.(Laval), M.Eng.(McG.), Ph.D.(Tor.)
 L. Chen; B.Eng.(McG.), M.A.Sc., Ph.D.(Tor.)
 J. Cooperstock; B.Sc.(Br.Col.), M.Sc., Ph.D.(Tor.)
 M.El-Gamal; B.Sc.(Cairo), M.Sc.(Nashville), Ph.D.(McG.)
 K. Khordoc; B.Eng., M.Eng., Ph.D.(McG.)
 A. Kirk; B.Sc.(Brist.), Ph.D.(Lond.)
 R. Negulescu; M.Sc.(Romania), M.Sc.(France), Ph.D.(Wat.)
 Z. Zelic; B. Eng.(Zagreb), M.Sc., Ph.D.(Toronto)

Lecturers

K.L. Fraser; B.Eng., M.Eng.(McG.), Eng.
 F. Danilo; M.Eng.(McG.)
 D. Giannacopoulos; M.Eng., Ph.D.(McG.)

Adjunct Professors

V.K. Agarwal, E. Cerny, D. Grant, J.F. Hayes, C.K. Jen, G. Joos,
 S. Kubina, I.Leszkwicz, L. Lin, M. Marin, D. McGillis,
 D. O'Shaughnessy, F.M. Reza, F. Rizk, L.A. Wegrowicz

Associate Members

M. Buehler (*Mechanical Engineering*); B. Segal; G. Dudek
 (*Computer Science*); A.C. Evans, W.R. Funnell, H.L. Galiana,
 J. Gotman, R.E. Kearney, B. Pike (*Biomedical Engineering*)

Visiting Professors

B. Prasada; M.Sc.(Ban), Ph.D.(Lond.)
 M. Kaplan; M.Sc., Ph.D.(C'nell)
 J. Regnier; B.Eng., M.Eng.(Montr.), Ph.D.(MIT)

29.2 Programs Offered

The Department offers programs of graduate studies leading to a degree of Master of Engineering or Doctor of Philosophy.

An equivalent of one (1) calendar year of full time study is required to obtain a Master's in Engineering.

The Ph.D. program maintains a requirement of the equivalent of two (2) calendar years of full time study besides the requirements for the Master's degree.

The research interests and facilities of the Department are very extensive, involving more than 30 faculty members and 200 post-graduate students. The major activities are divided into the following groups: Biomedical Engineering, Communications Systems, Computer Vision and Robotics, Computational Analysis for Engineering Design, Software Systems for Intelligent Design, Electronic Devices and Materials, High Frequency Electromagnetics and Optics, Power Engineering, Systems and Control, Microelectronics and Computer Systems, and Photonics.

Research Facilities

The Department has extensive laboratory facilities for all its main research areas. In addition, McGill University often collaborates with other Institutions for teaching and research.

- The laboratories for research in Robotics, Control and Vision are in the Centre for Intelligent Machines (CIM).
- Telecommunications laboratories focus their work on signal compression and wireless communications. These laboratories form part of the Canadian Institute for Telecommunications Research (CITR). This is a federally funded network of Centers of Excellence.
- The Microelectronics and Computer System (MACS) Laboratory supports research in VLSI, mixed signal circuits, design for testability, formal methods telecommunications, computing and optical systems.
- Antenna and microwave research, and optical fiber and integrated optics research are carried out in a fully equipped facility.
- The Photonics Systems laboratory includes continuous wave and femtosecond Ti:Sapphire lasers, diode lasers, extensive optics and optomechanics, and sophisticated electronic and imaging equipment.
- Solid state facilities include measurement equipment for magnetic and electric properties of materials, vacuum deposition and RF sputtering systems.

- The Computational Analysis and Design Laboratory provides tools for numerical analysis, visualization, interface design and knowledge-based system development.
- There is also a well-equipped laboratory for power electronics and power systems research.

The Department has extensive computer facilities. Most research machines are networked providing access to a vast array of hardware. In addition, McGill University is linked to the Centre de Recherche Informatique de Montréal (CRIM) and the University Computing Centre.

There are three other universities in Montreal: Concordia University is the other English language university; L'Université de Montréal, and its affiliated school of engineering, L'Ecole Polytechnique, is the largest Francophone university; L'Université du Québec has a campus in Montreal and in major towns throughout the province.

The proximity of these schools to McGill University, ensures a rich array of courses is available to suit individual needs. McGill also collaborates on research projects with many organizations such as l'Institut Nationale de la Recherche de L'Hydro-Québec (IREQ) and l'Institut Nationale de la Recherche Scientifique (INRS).

Financial Support

Graduate Assistantships: The Department awards a number of graduate assistantships that carry an annual stipend of approximately Can\$15,000 per year to qualified full-time graduate students. These are normally funded from research grants or contracts awarded to individual faculty members. In return, the graduate assistant is expected to perform research-related tasks assigned by the professor from whose grant the assistantship is paid. A good part, but not necessarily all, of this work can be used for preparing a thesis. There is no special application form for graduate assistantships; all applicants who indicate a need for support on their application forms will be considered. A large fraction of research funding comes from Canadian Government agencies, with the stipulation that only graduate students who are either Canadian citizens or Permanent Residents may be supported. Consequently, graduate assistantships can be offered to a very small number of international students. They should also note that Canadian authorities will not grant an Immigrant Visa to a foreign national who wishes to enter Canada to study.

Teaching Assistantships: Graduate students, with the approval of their supervisors, may also undertake teaching assistantship for an additional remuneration of between Can\$400 to Can\$3,000 per year. These are awarded at the beginning of the semester. The Department can make no prior commitments.

Differential Fee Waivers: All eligible visa students accepted or registered in a full-time term of residency will be considered for a limited number of waivers that reduce international tuition fees to the equivalent of Canadian tuition fees. McGill bases awards entirely on academic merit.

Graduate students can also receive financial aid through either fellowships, loans or bursaries. For more information, please refer to the Fellowships and Awards website (<http://www.mcgill.ca/fgsr/fellow.html>), or contact the Faculty of Graduate Studies and Research Office, McGill University, James Administration Building, Room 400, 845 Sherbrooke Street West, Montreal, QC H3A 2T5.

29.3 Admission Requirements

TOEFL Requirement: Non-Canadian applicants whose mother tongue is not English and who have not completed an undergraduate degree using the English language, must submit documented proof of competency in English by a Test of English as a Foreign Language (TOEFL) with a score not below 600 or IELTS with a minimum overall band of 6.5. Permanent Residents may also be required to submit TOEFL results. Official results must be received before February 1st.

GRE Requirement: A GRE (Graduate Record Examinations) score on the General Aptitude Test and the Advanced Test in

Engineering is required by all students who have completed their undergraduate degrees outside Canada. A minimum total score of 1800 is required. Official results must be received before February 1st.

M.Eng. Degree (Admission Requirements)

The applicant must be the graduate of a recognized university and hold a Bachelor's degree equivalent to a McGill degree in Electrical or Computer Engineering or a closely allied field. An applicant holding a degree in another field of engineering or science will be considered but a qualifying year may be given to make up any deficiencies. The applicant must have a high academic achievement: a standing equivalent to a Cumulative Grade Point Average (CGPA) of 3.0 out of 4 (75%) or a GPA of 3.2 out of 4.0 for the last two full-time academic years. Satisfaction of these general requirements does not guarantee admission. Admission to graduate studies is limited and acceptance is on a very competitive basis.

Ph.D. Degree (Admission Requirements)

Candidates who fulfill the general requirements of the Faculty of Graduate Studies and Research and who possess a Master's degree may be accepted for a course of study leading to the Ph.D. degree in Electrical Engineering.

29.4 Application Procedures

Applications will be considered upon receipt of:

1. completed application form;
2. application fee (Can\$60);
3. two official copies of all previous transcripts;
4. two reference letters (sent directly by the referees);
5. TOEFL and GRE scores (if applicable)

Applications are processed in March for the following September session. This takes place once every year. **There is no January admission.** All documents must be directly sent to Graduate Program Admissions, Department of Electrical and Computer Engineering.

The deadline to receive the complete application in the Department is **February 1**.

29.5 Program Requirements

A student may satisfy the M.Eng. degree requirements by completing one of the following options:

M.Eng. Thesis Option (46 credits)

The Thesis option requires satisfactory completion of six graduate level courses (with a grade of B or better) of which four courses must be chosen from the Department (304-5xx or 304-6xx), plus research leading to a Master's thesis (28 credits), the total amounting to at least 46 credits. Students who are required to take more than two non-departmental courses must bring a letter of recommendation from their supervisors outlining the reason for such an action. There are no circumstances under which the maximum number of non-departmental courses will be raised above three. The following are the thesis component courses:

304-691 Thesis Research I	4 credits
304-692 Thesis Research II	4 credits
304-693 Thesis Research III	4 credits
304-694 Thesis Research IV	4 credits
304-695 Thesis Research V	4 credits
304-696 Thesis Research VI	4 credits
304-697 Thesis Research VII	4 credits
Total credit weight of thesis:	28 credits

Students who choose the thesis option must register for all 28 credits during the course of study. Students in the thesis option must carry a full load (minimum of 12 credits) during the three terms of the residency requirement.

M.Eng. Non-Thesis (Project) Option (47 credits)

The Project option requires satisfactory completion of at least nine graduate level courses (with a grade of B or better) of which six courses must be chosen from the Department (304-5xx or

304-6xx), plus a project (up to 20 credits), the total amounting to 47 credits. Students who are required to take more than three non-departmental courses must bring a letter of recommendation from their supervisors outlining the reason for such and action. There are no circumstances under which the maximum number of non-departmental courses will be raised above four. The following are the project component courses:

304-651 Research Project I	1 credit
304-652 Research Project II	2 credits
304-653 Research Project III	3 credits
304-654 Research Project IV	4 credits
304-655 Research Project V	5 credits
304-656 Research Project VI	5 credits
Total number of project credits:	20 credits

The credits assigned to the project can vary between 11 and 20 depending on the number of course credits taken. A part-time program is possible.

Non-thesis option students have an oral presentation and two examiners grade their project.

Ph.D. Program Requirements

To complete the doctoral program, the following requirements must be met.

- a) Successful completion of the courses prescribed by the student's Supervisory Committee.
- b) Completion of a minimum of two units (100 hours) of teaching work (tutoring or lab demonstration). A written confirmation of the type of teaching work done either inside or outside the Department must be submitted to the Department.
- c) Passing the Qualifying Examination (course 304-701). Students must register for this course upon admission to the doctoral program. It is recommended that the exam take place within one year of admission to the doctoral program. The contents of the Qualifying Examination are set at the Preliminary Meeting. The examiners at the Qualifying Examination include the student's Supervisory Committee together with any other examiners chosen by the committee. Successful completion of this course will award the student a PASS grade in the course 304-701.
- d) Approval of the thesis proposal submitted by the student (course 304-702). Students must register for this course upon successful completion of the course 304-701. It should be completed within one year of the Qualifying Examination. The student must present a brief written thesis proposal to the Supervisory Committee. The proposal should contain a statement of the proposed research, results already obtained, if any, and expected results. The proposal is to be received by members of the Committee in advance of its presentation. The format of the thesis proposal submission is an oral presentation of the written statement by the student and then a period in which he/she will be questioned on the proposal by the Supervisory Committee. When the proposal is accepted by the Supervisory committee, the student receives a PASS grade in the course 304-702.
- e) Passing the final thesis defense conducted by the Faculty of Graduate Studies and Research.

29.6 Courses

● Denotes not offered in 2000-01.

□ Denotes limited enrolment.

The course credit weight is given in parentheses (#) after the course title, along with the number of weekly contact hours (lectures, lab/tutorials) and expected hours of study, e.g. 3(3-0-6) indicates 3 credits(3 lecture hours - no other contact hours - 6 hours of personal study).

304-501A LINEAR SYSTEMS. 3(3-0-6) (Prerequisite: 304-303) State equations and input-output descriptions of linear systems: basic properties and solution. Observability and controllability.

Matrix Fraction Descriptions. Canonical forms. Feedback synthesis: linear quadratic control problems, pole placement, observers and compensators. **Staff**

304-502B CONTROL ENGINEERING. 3(3-0-6) (Prerequisites: 304-303, 304-305) Modelling of engineering systems, simulation. Linear systems theory. Performance limitations. Stability of single-input-single-output closed-loop systems. Classical design in the frequency domain. Sampled-data implementation of continuous-time design. **Professor Bélanger**

● **304-503B LINEAR STOCHASTIC SYSTEMS I.** 3(3-0-6) (Prerequisites: 189-587 or 304-510)

● **304-504B COMPUTER CONTROL.** 3(3-0-6) (Prerequisites: 304-404 or 304-502 and 304-305)

● **304-505B NONLINEAR CONTROL SYSTEMS.** 3(3-0-6) (Prerequisite: 304-501)

304-507A OPTIMIZATION AND OPTIMAL CONTROL. 3(3-0-6) (Prerequisites: 189-265 or 189-248 and 189-270 or 189-247) General Introduction to optimization methods including steepest descent, conjugate gradient, Newton algorithms. Generalized matrix inverses and the least squared error problem. Introduction to constrained optimality; convexity and duality; interior point methods. Introduction to dynamic optimization; existence theory, relaxed controls, the Pontryagin Maximum Principle. Sufficiency of the Maximum Principle. **Professor Michalska**

304-509A PROBABILITY AND RANDOM SIG. II. 3(3-0-6) (Prerequisite: 304-304 and 304-305) Multivariate Gaussian distributions; finite-dimensional mean-square estimation (multivariate case); principal components; introduction to random processes; weak stationarity; correlation functions, spectra, linear processing and estimation; Poisson processes and Markov chains: state processes, invariant distributions; stochastic simulation. **Staff**

304-510B RANDOM PROCESSES. 3(3-0-6) (Prerequisite: 304-509) Finite-dimensional distribution functions. Estimation, Orthogonal Projection Theorem. Linear stochastic systems; Kalman filtering. Stationary stochastic processes: spectral Representation Theorem, Wiener filtering, Wold decomposition; ARMA processes. Brownian Motion; Ito integral and stochastic differential equations; forward and backward equations for diffusions. Ergodic theorems. Stochastic dynamic programming. Applications to communication and control systems **Professor Caines**

304-511A INTRO. TO DIGITAL COMM. 3(3-0-6) (Prerequisite: 304-304. Corequisite: 304-509) An advanced version of 304-411. Amplitude and angle modulation including AM, FM, FDM and television systems; introduction to random processes; sampling and quantization, PCM systems, TDM; digital modulation techniques, Maximum-Likelihood receivers, synchronization issues; elements of information theory including information sources, source coding and channel capacity. **Professor Leib**

304-512A DIGITAL SIGNAL PROCESSING I. 3(3-0-6) (Prerequisite: 304-304 and 304-305) Review of discrete-time transforms, sampling and quantization, frequency analysis. Structures for IIR and FIR filters, coefficient quantization, roundoff noise. The DFT, its properties, frequency analysis and filtering using DFT methods, the FFT and its implementation. Multirate processing, subsampling and interpolation, oversampling techniques. **Professor Kabal**

304-521A DIGITAL COMMUNICATIONS I. 3(3-0-6) (Prerequisite: 304-411 or 304-511. Corequisite: 304-509.) Modulation: orthogonal and biorthogonal signalling, MPSK, QAM, modulation with memory. Detection: coherent, noncoherent and differentially coherent detection, performance issues and channel capacity, synchronization. Coding: block and convolutional codes, fast Hadamard Transform decoding, Viterbi algorithm, turbo-codes. Band-limited channels: intersymbol interference, spectral shaping, correlative coding, data estimation and channel equalization.st. **Professor Kabal**

● **304-522A ASYNCHRONOUS CIRCUITS & SYSTEMS.** 3(3-3-3) (Prerequisite: 304-323)

304-523B SPEECH COMMUNICATIONS. 3(3-0-6) (Prerequisite: 304-412 or 304-512) Articulatory and acoustic descriptions of speech production, speech production models, speech perception, digital processing of speech signals, vocoders using formant, linear predictive and cepstral techniques, overview of automatic speech recognition systems, speech synthesis systems and speaker verification systems. **Professor O'Shaughnessy**

● **304-525B COMPUTER ARCHITECTURE.** 3(3-0-6) (Prerequisites: 304-222 and 304-323)

304-526B ARTIFICIAL INTELLIGENCE. 3(3-0-6) (Prerequisite: 304-222) Fundamentals of automated reasoning in expert systems: Semantics and satisfaction, inference procedures, logical implication, proofs, unification, resolution, soundness and completeness. Searching strategies and problem solving. Limits of monotonic logic: forms of non-monotonic reasoning. The course includes a term project which consists of writing a small inference engine in Lisp. **Professor Cooperstock**

304-527A,B OPTICAL ENGINEERING. 3(3-0-6) (Prerequisite: 304-304 and 304-352) A structured introduction to modern optical engineering. Topics covered include the propagation of light through space, refraction, diffraction, polarization, lens systems, ray-tracing, aberrations, computer-aided design and optimization techniques, Gaussian beam analysis, micro-optics and computer generated diffractive optical elements. Systems and applications will be stressed throughout. **Professor Kirk**

304-528A TELECOMM. NETWORK ARCHITECTURE. 3(3-0-6) (Prerequisite: 304-411 or 304-511. Corequisite: 304-509) Organization of large, highspeed, multiservice telecommunication networks. Connection hierarchies, protocol stacks, transmission formats. Local-area networking: Token Ring and Ethernet. Multiplexing for wide-area transport: performance modelling and analysis, traffic scheduling and shaping. Routing and flow control. Switch architecture: performance criteria, buffer management, routers versus switches and hybrids. **Professor Kaplan**

304-529A IMAGE PROCESSING AND COMMUNICATION. 3(3-0-6) (Prerequisite: 304-304) Introduction to vision in man and machine; computer vision systems; biological vision systems; biological signal processing; edge detection; spatial- and frequency-domain processing; color. Low-level visual processing in computer vision, psychophysics, and neurobiology, and their similarities and differences. **Professor Levine**

● **304-530B LOGIC SYNTHESIS.** 3(3-2-4) (Prerequisite: 304-323)

304-531B REAL TIME SYSTEMS. 3(3-3-3) (Prerequisites: 304-323 and 304-222) Real-time engineering applications of computers to online control communication systems and data acquisition. Aspects of hardware, software, interfacing, operating systems, and their integration into a complete system are addressed. **Professor Khordoc**

304-532A COMPUTER GRAPHICS. 3(3-3-3) (Prerequisite: 304-222) Introduction to computer graphics systems and display devices: raster scan, scan conversion, graphical input and interactive techniques – window environments; display files: graphics languages and data structures: 2D transformations; 3D computer graphics, hidden line removal and shading; graphics system design; applications. Laboratory project involving the preparation and running of graphics programs. **Ms. Leszkowicz**

304-533B PHYSICAL BASIS OF SEMICONDUCTOR DEVICES. 3(3-0-6) (Prerequisites: 304-330, 304-351 and 198-271) Quantitative analysis of diodes and transistors. Semiconductor fundamentals, equilibrium and non-equilibrium carrier transport, and Fermi levels. PN junction diodes, the ideal diode, and diode switching. Bipolar Junction Transistors (BJT), physics of the ideal BJT, the Ebers-Moll model. Field effect transistors, metal-oxide semiconductor structures, static and dynamic behaviour, small-signal models. **Professor Plant**

304-534A ANALOG MICROELECTRONICS. 3(3-0-6) (Prerequisite: 304-334) Design of analog ICs using specialized analog CAD tools such as SPICE. Voltage and current amplifier design which encompasses the study of biasing circuits, current sources and

mirrors, input and output stages, and frequency compensation; precision reference sources; analog multipliers; oscillators; waveform generators and shaping circuits, and analog switches.

Professor Roberts

304-543B NUMERICAL METHODS IN ELECTRICAL ENGINEERING.

3(3-0-6) (Prerequisites: 304-222, 304-334 and 304-352) DC resistor networks and sparse matrix methods. Nonlinear electric and magnetic circuits: curve-fitting; the Newton-Raphson method. Finite elements for electrostatics. Transient analysis of circuits: systems of Ordinary Differential Equations; stiff equations. Transient analysis of induced currents. Solution of algebraic eigenvalue problems. Scattering of electromagnetic waves: the boundary element method; numerical integration.

Professor Webb

● **304-545A MICROELECTRONICS TECHNOLOGY.** 3(3-0-6) (Prerequisite: 304-432 or 304-533)

304-547A FINITE ELEMENTS IN ELECTRICAL ENGINEERING. 3(3-0-6) (Prerequisites: 304-222 and 304-352) Finite elements for electrostatics. Energy minimization. Semi-conductors. Nonlinear magnetism and Newton-Raphson. Axisymmetric problems. Capacitance, inductance, and resistance through finite elements. Resonance: cavities, waveguides. High order and curvilinear elements.

Professor McFee

□ **304-548A INTRODUCTION TO VLSI SYSTEMS.** 3(2-2-5) (Prerequisites: 304-334 and 304-323) An interdisciplinary course for electrical engineering and computer science students. A structured design methodology for managing the complexity of VLSI system design. Sufficient information on integrated devices, circuits, digital subsystems and system architecture is presented to enable students to span the range of abstractions from device physics to VLSI digital systems.

Professor Rumin

304-549A EXPERT SYSTEMS IN ELECTRICAL DESIGN. 3(3-0-6) (Prerequisites: 304-361 and 304-494) Design processes in electrical engineering. Hierarchical design. Computer aided design. Expert system technology. Device representations, heuristics and structures, algebraic models. Design versus diagnosis, "Shallow" and "Deep" systems, second generation (multi-paradigm) systems. Shells and their uses in design systems. Knowledge acquisition systems.

Professor Lowther

304-559X FLEXIBLE CC TRANSMISSION SYSTEMS. 3(3-0-6) (Prerequisite: 304-361 and 304-334) Vision of Flexible AC Transmission Systems. Principles of operation of the controllers and their applications in FACTS. Passive-Controllers: shunt and series capacitor/inductor compensation, phase-shifting transformers, Interphase Power Controllers (IPC). Thyristor or Line Commutated Controllers: Graetz bridge and Static VAR Controller (SVC) topologies. Thyristor-controlled series capacitor (TCSC), series reactor (TCR), phase angle regulator (TCPR). Gate-turn-off thyristor (GTO) or Force Commutated Controllers: Shunt and series capacitive/inductive reactance compensation, phase shifters.

Professor Ooi

● **304-560A POWER SYSTEMS ANALYSIS II.** 3(3-0-6) (Prerequisite: 304-464)

● **304-562A CONTINUUM ELECTROMECHANICS.** 3(3-0-6) (Prerequisite: 304-352)

304-563B POWER SYSTEMS OPERATION AND PLANNING. 3(3-0-6) (Prerequisite: 304-361) Design and operation of large scale power systems: Temporal, spatial and hierarchical decomposition of tasks. Local vs. distributed control. Load-frequency control. Voltage and speed regulation. Interconnected power systems. Power flow. Security states. Optimal operation of power systems. Power system reliability.

Professor Galiana

304-565A INTRODUCTION TO POWER ELECTRONICS. 3(3-0-6) (Prerequisite: 304-334) Semiconductor power switches – thyristors, GTO's, bipolar transistors, MOSFET's. Switch mode power amplifiers. Buck and boost principles. Modulation methods – PWM, delta, hysteresis current control. Rectifiers, inverters, choppers.

Professor Ooi

304-571A OPTOELECTRONIC DEVICES. 3(3-0-6) (Prerequisites: 304-304, 304-305, 304-352 and 304-533) Physical basis of optoelectronic devices including Light Emitting Diodes, semiconductor optical amplifiers, semiconductor lasers, quantum well devices, and solid state lasers. Quantitative description of detectors, optical modulation, optical logic devices, optical interconnects, and optomechanical hardware. Photonic systems applications will be addressed.

Professor Plant

304-573A MICROWAVE ELECTRONICS. 3(3-0-6) (Prerequisite: 304-432 or 304-533) Physical basis of modern microwave devices and circuits. Microwave transistors and tunnel diodes, transferred electron devices, transit time devices and infra red devices. Microwave generation and amplification, microwave FET circuits. Noise and power amplification.

Professor Shih

● **304-578A CRYSTALS AND CONDUCTION.** 3(3-0-6) (Prerequisite: 304-432 or 304-533)

● **304-579B PROPERTIES OF SOLIDS.** 3(3-0-6) (Prerequisite: 304-376)

● **304-592A MICROWAVE THEORY AND TECHNIQUES.** 3(3-0-6) (Prerequisite: 304-352)

● **304-593B ANTENNAS AND PROPAGATION.** 3(3-0-6) (Prerequisite: 304-352)

● **304-596B OPTICAL WAVEGUIDES.** 3(3-0-6) (Prerequisite: 304-352)

● **304-602A OPTIMIZATION METHODS.** 4(3-0-9) (Prerequisite: 304-501 or 304-502)

● **304-604B LINEAR STOCHASTIC SYSTEMS II.** 4(3-0-9) (Prerequisite: 189-587)

● **304-606B ADVANCED TOPICS CONTROL.** 4(3-0-9)

304-610B WIRELESS TELECOMMUNICATIONS. 4(3-0-9) (Prerequisite: 304-511) An introduction to the theory and technology of wireless networks, with the emphasis on networking. Topics include channel modelling, cellularity and frequency reuse, the multiple access problem, services integration, flow control, diversity, smart antennas and aspects of wireless network management. First and second generation systems are described in detail.

Professor Kaplan

● **304-615B DIGITAL SIGNAL PROCESSING II.** 4(3-0-9) (Prerequisite: 304-510 or 304-512)

● **304-620A INFORMATION THEORY AND CODING.** 4(3-0-9) (Prerequisite: 304-411 or 304-511, and 304-510)

304-621B STAT. DETECTION AND ESTIMATION. 4(3-0-9) (Prerequisite: 304-411 or 304-511, 304-510) On the processing of signals with random components, for applications in pattern recognition, image processing, robotics, telecommunications and control. A framework for statistical decision-making, geometrical representation of optimal strategies, Bayes and minimax rules, hypothesis testing, sequential decision-making, parameter estimation, Wiener and Kalman filtering, tracking, estimation of power spectra.

Professor Leib

304-623B DIGITAL COMMUNICATION II. 4(3-0-9) (Prerequisite: 304-510, 304-521) Adaptive channel equalization: the LMS algorithm, recursive Least-Squares algorithms, blind equalization. Multipath fading channels: channel characterization and models, diversity techniques for slowly fading channels, detection techniques for frequency selective channels. Spread Spectrum Communications: direct sequence and frequency hopping, multiple access techniques, single and multi-user demodulation techniques. Multi-carrier systems.

Staff

304-624B DATA COMPRESSION. 4(3-0-9) (Prerequisites: 304-510 and 304-412 or 304-512) Theory and design of signal coding systems: Waveform characterization (speech and image waveforms), sampling (aliasing, optimal reconstruction filters), linear prediction. Scalar quantization: uniform and nonuniform, optimality, robust quantization. Differential coding, adaptive prediction, noise feedback. Run-length coding, entropy coding. Transform coding: transforms, bit assignment. Vector quantization: design, optimality,

combined source/channel designs. Delayed decision coding: tree and trellis coding. **Staff**

304-625B TELECOM. NETWORK DESIGN. 4(3-0-9) (Prerequisite: 304-510, 304-528) Instruction in the design and use of algorithms for telecommunication network planning and control, with emphasis on computational efficiency. Applications include topological design, route selection, specification and configuration management of virtual sun-networks. Relevant computational techniques include steepest descent, branch-and-bound, flow deviation. **Staff**

● **304-626B COMPUTER VISION.** 4(3-0-9) (Prerequisite: 304-529)

304-629B VISUAL MOTOR SYSTEMS. 4(3-0-9) (Prerequisite: 304-529) Examination of the link between vision and action in artificial and natural systems. Active vision, spatial attention, perception and representation of space, gaze stabilization and tracking, scanning and saccadic eye movements, visual servoing. Design and control of robotic visual-motor systems. Neurobiology of visual-motor systems. **Professor Clark**

304-634B ANALOG INTEGRATED CIRCUITS FOR SIGNAL PROCESSING. 4(3-0-9) (Prerequisites: 304-334, 304-303 or equivalent) Analog signal processing techniques for monolithic implementation. Filter approximation theory; filter realization methods; integrated filter technologies; active-RC, MOSFET-capacitor, transconductance-capacitor, switched-capacitor, switched-current; filter tuning methods. Phase-locked loops; signal conversion techniques. (Awaiting University Approval) **Professor Roberts**

□ **304-648B VLSI DESIGN.** 3(1-5-3) (Prerequisite: 304-548) A project course with the opportunity to apply the knowledge acquired in 304-548 to the design of a complete digital IC of medium complexity. Completed designs will be submitted for fabrication to the Implementation Centre of the Canadian Microelectronics Corporation. The course includes lectures on advanced topics in VLSI design. **Staff**

304-649B VLSI TESTING. 4(3-0-9) (Prerequisite: B.Eng. or equivalent.) The course is to orient designers of VLSI chips and boards to think about testing problems in parallel with the design process. Consideration in structured design-for-testability as a requirement for complex systems will be emphasized; as well as the emerging concept of built-in self-test (BIST). **Staff**

304-651A,B,C PROJECT RESEARCH I. 1(0-0-3)

304-652A,B,C PROJECT RESEARCH II. 2(0-0-6)

304-653A,B,C PROJECT RESEARCH III. 3(0-0-9)

304-654A,B,C PROJECT RESEARCH IV. 4(0-0-12)

304-655A,B,C PROJECT RESEARCH V. 5(0-0-15)

304-656A,B,C PROJECT RESEARCH VI. 5(0-0-15)

● **304-659Y ELECTRICAL AND THERMAL TRANSIENTS.** 4(4-0-8)

● **304-661Y NEW POWER GENERATION TECHNOLOGIES.** 4(4-0-8)

● **304-662X ELECTRIC MACHINE DYNAMICS.** 4(4-0-8) (Prerequisite: 304-462)

● **304-664X HVDC POWER TRANSMISSION.** 4(4-0-8)

● **304-668Y ENERGY EFFICIENT POWER SYSTEMS.** 4(4-0-8)

● **304-675A SOLAR CELLS AND JUNCTIONS.** 4(3-0-9) (Prerequisite: 304-432)

304-677A,B EXPERIMENTAL TECHNIQUES IN SOLID STATE. 4(0-6-6) (Prerequisite: 304-545) Experimental project in solid state involving the following: techniques of preparation, fabrication and orientation of samples and structures for experimental study; use of special laboratory apparatus; measurement of electronic, optical and structural properties of samples and structures; evaluation of electronic behaviour and performance; interpretation of relevant physical processes and phenomena. **Staff**

● **304-678A SPECIAL TOPICS IN SOLIDS I.** 4(3-0-9) (Prerequisite: 304-432A)

304-680A,B TOPICS IN PHOTONICS. 4(3-0-9)

304-681A,B COLLOQUIUM IN ELECTRICAL ENGINEERING. (4) Directed reading, seminar and discussion course in various subjects of current interest in electrical engineering research.

304-682A,B TOPICS IN COMPUTERS AND CIRCUITS. 4(3-0-9)

304-683A,B TOPICS IN VISION AND ROBOTICS. 4(3-0-9)

304-684A,B TOPICS IN COMPUTER AIDED DESIGN. 4(3-0-9)

304-685A,B TOPICS IN POWER ENGINEERING. 4(3-0-9)

304-686A,B TOPICS IN COMMUNICATIONS SYSTEMS. 4(3-0-9)

304-687A,B TOPICS IN MICROWAVES & OPTICS. 4(3-0-9)

304-688A,B RECENT ADVANCES IN ELECTRICAL ENGINEERING. 4(3-0-9) Course content suited to the area of specialization of the lecturer.

304-689A,B RECENT ADVANCES IN ELECTRICAL ENG. II. 4(3-0-9) Course content suited to the area of specialization of the lecturer.

304-690A,B TOPICS IN BIOMEDICAL ENGINEERING. 4(3-0-9)

304-691A,B,C THESIS RESEARCH I. 4(3-0-9)

304-692A,B,C THESIS RESEARCH II. 4(3-0-9)

304-693A,B,C THESIS RESEARCH III. 4(3-0-9)

304-694A,B,C THESIS RESEARCH IV. 4(3-0-9)

304-695A,B,C THESIS RESEARCH V. 4(3-0-9)

304-696A,B,C THESIS RESEARCH VI. 4(3-0-9)

304-697A,B,C THESIS RESEARCH VII. 4(3-0-9)

304-701A,B,C PH.D. QUALIFYING EXAMINATION. Oral Examination of Ph.D. student's background in defined areas.

304-702A,B,C PH.D. RESEARCH PROPOSAL. Definition of a plan for Ph.D. research.

30 English

Department of English
Arts Building
853 Sherbrooke Street West
Montreal, QC H3A 2T6
Canada

Telephone: (514) 398-6564

Fax: (514) 398-8146

E-mail: mvasil4@po-box.mcgill.ca

Website: www.arts.mcgill.ca/programs/english/english.html

Chair — M. Kilgour

30.1 Staff

Emeritus Professors

L. Dudek; B.A.(McG.), A.M., Ph.D.(Col.) (*David J. Greenshields Emeritus Professor of English*)

J. Hemlow; M.A., LL.D.(Qu.), A.M., Ph.D.(Harv.) F.R.S.C.

A. Lucas; M.A.(Queen's), A.M., Ph.D.(Harv.)

M. Puhvel; B.A., M.A.(McG.), Ph.D.(Harv.)

W.C. Wees; B.A.(Northwestern), M.A.(Roch.), Ph.D.(Northwestern)

Professors

M.D. Bristol; A.B.(Yale), Ph.D.(Prin.)

M. Dorsinville; B.A., M.A.(Sher.), Ph.D.(C.U.N.Y.)

M.A. Kilgour; B.A.(Tor.), Ph.D.(Yale)

R. Lecker; B.A., M.A., Ph.D.(York)

K. McSweeney; B.A., Ph.D.(Tor.)

P.H. Ohlin; Fil. Mag.(Stockholm), M.A., Ph.D.(New Mexico)

M. Stenbaek; B.A.(Copenhagen), M.A., Ph.D.(Montr.)

L.E. Troide; B.A., M.Phil.(Yale), M.A.(Col.) Ph.D.(Yale)

G.S. Wihl; B.A., M.A.(McG.) Ph.D.(Yale)

D. Williams; B.A.(Boston), M.A., Ph.D.(Tor.)

Associate Professors

K. Borris; B.A.(Vic., B.C.), Ph.D.(Edin.)

D.A. Bray; B.A.(McG.), Ph.D.(Edin.)

C.A. Conway; B.A., M.A., Ph.D.(Tor.)

M.N. Cooke; B.A.(Queen's), M.A.(C'nell.), M.A., Ph.D.(Tor)
 P. Gibian; B.A.(Yale), M.A.(N.Y.), Ph.D.(Stan.)
 D.C. Hensley; B.A., M.A.(Cantab.), Ph.D.(Yale)
 B. Kaite; B.A.(C' dia), M.A.(McM.), Ph.D.(Carl.)
 L. Lieblein; B.A.(C.C.N.Y.), A.M., Ph.D.(Roch.)
 Y. Lindeman; Cand.Dr.Engl.(Amst.), Ph.D.(Harv.)
 P. Neilson; B.A.(Bishop's), M.F.A.(Calg.)
 T. Ponech; B.A.(McG.), Ph.D.(Northwestern)
 D. Salter; B.A.(Br.Col.), M.A., Ph.D.(Tor.)
 M.W. Selkirk; B.A.(Alta), M.F.A.(Ill.)
 B. Trehearne; B.A., M.A., Ph.D.(McG.)
 S. Westphal; B.A.(Oberlin), M.A., Ph.D.(Yale)

Assistant Professors

M. Hickman; B.A.(Brown), M.A., Ph.D.(Mich.)
 M. Nash; B.A.(W.Ont.) B.A.Hons.(Brock), M.A.(Br.Col.),
 Ph.D.(Iowa)
 T. O'Toole; A.B.(Harv.), M.A.(Chic.), Ph.D.(Harv.)
 J. Treadwell; B.A., M.A., D.Phil.(Oxford)

30.2 Programs Offered

Master's and Ph.D.

All students who apply will be considered for support which normally takes the form of a Teaching or Research Assistantship.

30.3 Admission Requirements

A statement of proposed research, transcripts, writing sample and two letters of recommendation are required of all applicants.

M.A. Degree

Admission to the M.A. program requires an Honours degree in English or its equivalent. Outstanding applicants from related disciplines may be invited to take a qualifying year.

Ph.D. Degree

Admission to the doctoral program is highly competitive. Outstanding applicants with an Honors B.A. in English or equivalent may be admitted to the first year of the Ph.D. program (the Accelerated Ph.D.). In the first year, students in the Accelerated Ph.D. follow the M.A. program (Thesis Option). After an evaluation at the end of the first year, students whose progress has been satisfactory go on to complete the remaining requirements of the Ph.D. program. A student whose performance has indicated difficulty in successfully completing the Ph.D. will be asked to transfer into the M.A. program. Students who continue in the Ph.D. program but wish at the same time to complete the M.A. may use the summer to do so. Students accepted into the Accelerated Ph.D. are free to transfer after the first year into the terminal M.A. program. Applicants with an M.A. in English enter directly into the second year of the program.

30.4 Application Procedures

Applications will be considered upon receipt of:

1. application form;
2. transcripts;
3. two letters of reference;
4. \$60 application fee;
5. a writing sample;
6. statement of proposed research.

All information is to be submitted directly to the Graduate Coordinator.

Applications close February 1.

30.5 Program Requirements

A detailed description of the program requirements, course offerings, and faculty can be found at www.arts.mcgill.ca/programs/english/9900/grad/hdbk.html-ssi.

M.A. Degree

The Department offers two options towards the M.A. degree, one with a thesis and the other without thesis. Both options consist of 48 credits and are designed to be completed in four terms (of 12 credits each), but it is possible to complete the program in three terms, or one calendar year.

The two programs are similar; the non-thesis option substitutes two seminars and a research paper for the thesis. Both options require participation in a series of sessions on bibliography and research methods.

Ph.D. Degree

Doctoral students are expected to complete in their first year (Ph.D.2) the two halves of the compulsory proseminar and four other courses, but may substitute for the two second-semester courses one extended supervised research project. This course work must be chosen in order to make possible the identification of a major and a minor area of concentration. In Ph.D.3, candidates complete a compulsory research project in the area of the dissertation and submit the dissertation proposal. The language requirement must be fulfilled before the dissertation proposal is approved.

It is the policy of the Department to urge candidates to complete the Ph.D. program within four years. A candidate intending to submit the thesis to meet the deadline for Spring Convocation must give notice of this intention before January 1. A candidate intending to meet the deadline for Fall Convocation must give such notice before May 1.

30.6 Courses for Higher Degrees

The following is a list of all courses in English approved for offering at the graduate level. A list of courses to be given in 2000-01 will be available from the Departmental office. Courses at the 500 level are also open to advanced undergraduates. A maximum of two courses at the 500 level may be taken by Masters students.

The course credit weight is given in parentheses (#) after the course title.

- Denotes not offered 2000-01.

- 110-500A MIDDLE ENGLISH. (3)
- 110-501A,B 16TH CENTURY. (3)
- 110-502A,B 17TH CENTURY. (3)
- 110-503A,B 18TH CENTURY. (3)
- 110-504A,B 19TH CENTURY. (3)
- 110-505A,B 20TH CENTURY. (3)
- 110-516A,B SHAKESPEARE. (3)
- 110-525A,B AMERICAN LITERATURE. (3)
- 110-527A,B CANADIAN LITERATURE. (3)
- 110-528A,B CANADIAN LITERATURE. (3)
- 110-530A,B LITERARY FORMS. (3)
- 110-531B LITERARY FORMS. (3)
- 110-533A,B LITERARY MOVEMENTS. (3)
- 110-535A,B LITERARY THEMES. (3)
- 110-540A,B LITERARY THEORY I. (3)
- 110-541A,B LITERARY THEORY II. (3)
- 110-553A,B OLD ENGLISH LITERATURE. (3)
- 110-555A,B OLD NORSE. (3)
- 110-565D MEDIEVAL DRAMA WORKSHOP. (6)
- 110-566A,B STUDIES IN DRAMA. (3)
- 110-568D STUDIES IN DRAMATIC FORM. (6)
- 110-585A,B MODES OF COMMUNICATION I. (3)
- 110-586A,B MODES OF COMMUNICATION II. (3)
- 110-602A,B BIBLIOGRAPHY (3)
- 110-604A,B OLD ENGLISH LANGUAGE AND PROSE LITERATURE. (3)
- 110-607A,B MIDDLE ENGLISH LITERATURE (3)

- 110-608A CHAUCER I. THE CANTERBURY TALES. (3)
- 110-609B CHAUCER II. TROILUS AND CRISEYDE AND OTHER POEMS. (3)
 - 110-615A,B SHAKESPEARE. (3)
- 110-616A,B ELIZABETHAN AND JACOBAN DRAMA. (3)
- 110-640B THE AMERICAN NOVEL. (3)
 - 110-661A,B SEMINAR OF SPECIAL STUDIES. (3)
 - 110-662A,B SEMINAR OF SPECIAL STUDIES. (3)
 - 110-665A,B STUDIES IN AMERICAN LITERATURE AND INTELLECTUAL HISTORY. (3)
 - 110-675A,B LITERARY CRITICISM. (3)
 - 110-680A,B CANADIAN LITERATURE. (3)
 - 110-681A,B M.A. RESEARCH PAPER PREPARATION I. (3)
 - 110-682A,B M.A. RESEARCH PAPER PREPARATION II. (3)
 - 110-683A,B M.A. RESEARCH PAPER PREPARATION III. (3)
 - 110-684D,N,K,E,C,L,T M.A. RESEARCH PAPER. (15)
 - 110-687A,B RESEARCH SEMINAR. (3)
 - 110-690A,B SEMINAR OF SPECIAL STUDIES. (3)
 - 110-694A BIBLIOGRAPHY AND RESEARCH METHODS. (3)
 - 110-695A,B M.A. THESIS PREPARATION I. (3)
 - 110-696A,B M.A. THESIS PREPARATION II. (3)
 - 110-699D,N,K,E,C,L,T M.A. THESIS. (24)
 - 110-708A,B STUDIES IN A LITERARY FORM. (3)
 - 110-710A RENAISSANCE STUDIES. (3)
 - 110-714A,B RENAISSANCE POETRY. (3)
 - 110-716A,B SPECIAL STUDIES IN SHAKESPEARE. (3)
 - 110-722A,B MILTON. (3)
 - 110-726A,B NARRATIVE PROSE OF THE 18TH CENTURY. (3)
 - 110-727A,B AUGUSTAN POETRY. (3)
 - 110-728B THE LATER 18TH CENTURY. (3)
 - 110-730A,B ROMANTIC THEORY AND POETRY. (3)
 - 110-731A 19TH CENTURY STUDIES. (3)
 - 110-733A,B THE VICTORIAN NOVEL. (3)
 - 110-734A,B STUDIES IN FICTION. (3)
 - 110-736A,B MODERN POETRY. (3)
 - 110-746B THE 19TH CENTURY. (3)
 - 110-757A,B MODERN DRAMA. (3)
 - 110-761A,B 20TH CENTURY NOVELISTS. (3)
 - 110-770A STUDIES IN AMERICAN LITERATURE. (3)
 - 110-775B RECENT AMERICAN AND CANADIAN LITERATURE. (3)
 - 110-776A,B FILM THEORY. (3)
 - 110-785A STUDIES IN LITERARY THEORY. (3)
 - 110-786A RESEARCH SEMINAR. (3)
 - 110-787A RESEARCH SEMINAR I. (3)
 - 110-788B RESEARCH SEMINAR II. (3)

COURSES RESTRICTED TO Ph.D. CANDIDATES

- 110-745D INTRODUCTORY SEMINAR FOR Ph.D. STUDENTS.
- 110-791D DOCTORAL COMPREHENSIVE EXAMINATION, PART I.
- 110-792D DOCTORAL COMPREHENSIVE EXAMINATION, PART II.
- 110-793D DOCTORAL COMPREHENSIVE EXAMINATION, PART III.
- 110-794D DOCTORAL COMPREHENSIVE EXAMINATION, PART IV.
- 110-795D DOCTORAL COMPREHENSIVE EXAMINATION, PART V.
- 110-796A,B OPTIONAL RESEARCH PROJECT. (6)
- 110-797A,B COMPULSORY RESEARCH PROJECT. (6)
- 110-798A,B DISSERTATION PROPOSAL. (3)

31 Epidemiology and Biostatistics

Department of Epidemiology and Biostatistics
1020 Pine Avenue West
Montreal, QC H3A 1A2
Canada

Telephone: (514) 398-6269
Fax: (514) 398-4503
E-mail: graduate@epid.lan.mcgill.ca
Website: <http://www.epi.mcgill.ca>

Chair — G. Thériault

31.1 Staff

Emeritus Professors

M.R. Becklake; B.Ch.Hon., M.D. (Witw.), F.R.C.P.
F.D.K. Liddell; M.A. (Cantab.), Ph.D. (Lond.)
J.C. McDonald; M.B. B.S. (Lond.), M.D. (Lond.), M.Sc. (Harvard),
M.R.C.P. (Lond.), F.R.C.P. (Can)
W.O. Spitzer; M.D. (Tor.), M.H.A. (Mich.), M.P.H. (Yale),
F.R.C.P. (C)

Professors

L. Abenheim; M.D. (Paris), M.Sc.(McG.)
R. Battista; B.A., M.D.(Montr.), M.P.H., Sc.D.(Harv.)
J.F. Boivin; M.D.(Laval), S.M., Sc.D.(Harv.)
E.L.F. Franco; M.P.H., Dr.P.H.(Chapel Hill)
J.H. Hanley; B.Sc., M.Sc.(N.U.I.), Ph.D.(Wat.)
T. Hutchinson; M.B., B.Ch., B.A.O.(Dub.)
M.S. Kramer; B.A.(Chic.), M.D.(Yale)
A. Lippman; B.A.(C'nell) Ph.D.(McG.)
J. McCusker; M.D.(McG.), M.P.H., Ph.D.(Col.)
O.S. Miittinen; M.D.(Helsinki), M.P.H., M.S., Ph.D.(Minn.)
I.B. Pless; B.A., M.D.(W.Ont.)
S.H. Shapiro B.S.(Bucknell), M.S., Ph.D.(Stan.)
S. Suissa; M.Sc.(McG.), Ph.D.(Flor.)
G. Thériault; M.D.(Laval), Dr.P.H.(Harv.)
S. Wood-Dauphinee; B.Sc.(Phys.Ther.), Dip. Ed., M.Sc.A.,
Ph.D.(McG.)

Associate Professors

M. Abrahamowicz; Ph.D.(Cracow)
E. Beck; M.B.B.S., B.Med.Sci.(Monash); M.Sc., Ph.D.(London)
Y. Bergevin; M.D.C.M., M.Sc.(McG.)
A. Ciampi; M.Sc., Ph.D.(Queen's), Ph.D.(Rome)
J.P. Collet; M.D.(C.B., Lyon), Ph.D.(McG.)
G. Dougherty; M.D., M.Sc.(McG.) (joint appt. with Pediatrics)
P. Ernst; M.Sc.(McG.), M.D.(Montr.)
T. Gyorkos; B.Sc.(McG.), M.Sc.(Bishop's), Ph.D.(McG.)
C. Hankins; B.A., M.D.(Calgary), M.Sc.(London), C.C.F.P.(C),
F.R.C.P.(C)
L. Joseph; M.Sc., Ph.D.(McG.)
T. Kosatsky; B.A., M.D. (Manit.), M.P.H. (Emory) (PT)
C.P. Larson; M.D.C.M., M.Sc.(McG.) (joint appt. with Pediatrics)
J.D. MacLean; M.D.(Queen's) F.R.C.P.(C)
R. Menzies; M.D., M.Sc.(McG.) (joint appt. with Medicine)
J. O'Loughlin; B.Sc.(Queen's), M.Sc., Ph.D.(McG.) (PT)
G. Paradis; M.D., M.Sc.(McG.) (PT)
G.S. Pekales; M.D.(Baylor), M.Sc.(McG.)
J. Pickering; B.A.(Tor.), M.D., M.Sc.(McG.) (joint appt. with
Medicine)
M. Rossignol; B.Sc., M.D.(Sher.), M.Sc.(McG.)
N. Steinmetz; B.Sc., M.D., C.M.(McG.), M.P.H.(Mich.), F.R.C.P.(C)
R. Tamblyn; M.Sc.(McM.), M.Sc.(McG.) (joint appt. with Medicine)
P. Tousignant; B.A., M.D.(Laval), M.Sc.(McG.), F.R.C.P.(C) (PT)
C. Wolfson; B.Sc., M.Sc., Ph.D.(McG.)

Assistant Professors

A. Adrien; M.D., M.Sc. (McG.)
P. Barss; B.Sc. (DTM&H Lond.), M.D.(Chic.), M.P.H., Sc.D
(Johns H.) (PT)
J. Bourbeau; B.Sc., M.D.(Laval), M.Sc.(McG.) (joint appt with
Medicine)