McMaster University **School of Graduate Studies**

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http://www.mcmaster.ca/graduate

April 14, 2009

To : Graduate Council Members

From : Medy Espiritu
Assistant Secretary and SynApps System Administrator

Please note that the next meeting of Graduate Council will be held on **Thursday, April 16, 2009** at **10:00 a.m.** in **MUSC 311/313**.

Listed below are the agenda items for discussion.

Should you be unable to attend this meeting, please notify me at extension 24204 or email espiritu@mcmaster.ca.

A G E N D A

I. Minutes of the meeting of March 5, 2009

II. Business arising

III. Associate Vice-President and Dean's Report

IV. 2009 Spring Graduands *(to be circulated)*
- Faculty of Health Sciences

V. Graduate Scholarship: The Dr. Ronald J. Gillespie Prize in Inorganic Chemistry

VI. Graduate Curriculum Revisions 2009-2010
- Faculty of Engineering – Dr. M. Hatton
- Faculty of Health Sciences – Dr. C. Richards
- Faculty of Science – Dr. D. Welch
- Faculty of Humanities – Dr. D. Goellnicht
- Faculty of Social Sciences – Dr. D. Goellnicht

VII. Policy: Course Instructor, School of Graduate Studies

VIII. Policy for Keeping Records of Graduate Student Oral Examinations

IX. Policy Concerning Retention of Examination Papers and Other Graded Materials

X. Other Business

GRADUATE COUNCIL
MARCH 5, 2009, 10:00 A.M.
MUSC-311/313

PRESENT: Dr. A. Sekuler (Chair), Dr. K. Bennett, Dr. M. Boda, Dr. R. Cain, Dr. S. Cassidy, Dr. N. Charupat, Dr. S. Crosta, Dr. K. Dalnoki-Veress, Dr. T. Fetner, Dr. D. Goellnicht, Dr. M. Hatton, Dr. G. Kehler, Dr. T. Kirubarajan, Dr. M. Kliffer, Dr. H. Kuiper, Dr. A. Montazemi, Dr. C. Richards, Dr. D. Welch, Dr. T. Yoshikawa, Mr. J. Trzeciak, Mr. J. Scime (Secretary), Mrs. M. Espiritu (Assistant Secretary)

REGRETS: Dr. P. Baxter, Dr. F. McNeill, Mr. K. Viers, Dr. M. Waddington, Dr. J. West-Mays, Dr. P. Widdicombe

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Associate Vice-President and Dean's Report

Dr. Sekuler reported the status of the graduate programs that were submitted to OCGS for approval. She said the OCGS consultants' site visits for the new M. Eng. program in Mechatronics was held on March 2-3, 2009. Dr. Sekuler added that OCGS approved the M.Sc./Ph.D. in Cognitive Science of Language program on January 14, 2009. She said that two new graduate programs were recently submitted to OCGS: M.Sc. in Health Management, and M.Sc. in Global Health. Dr. Sekuler further said that the following graduate programs are also scheduled for consultant visits: Mechanical Engineering M.A.Sc./Ph.D. – March 26-27, 2009; Computer Science M. Eng. – April 15-16, 2009; Anthropology M.A./Ph.D. May 4-5, 2009; Geography M.A./M.Sc./Ph.D. – May 11-12, 2009; Chemical Engineering M.A.Sc./M.Eng./Ph.D. – June 1-2, 2009; and Mathematics M.Sc./Ph.D. – week of June 22, 2009.

Dr. Sekuler explained that the $52 million government funding for graduate studies expansion will have a significant impact on the University. She said that current interest in graduate studies across McMaster has increased 30% in areas such as Engineering and the MBA programs. She added that graduate enrolment at McMaster is expected to grow to 530-550 students over the next three years. In response to a question, Dr. Sekuler said that the School of Graduate Studies will be scheduling workshops for graduate advisors, administrators and secretaries regarding graduate funding, etc. Dr. Bennett requested Dr. Sekuler to provide a written overview of graduate expansion to share with her department.

Dr. Sekuler also announced that McMaster will fund about 20 international excellence awards to be granted to visa students. She noted that these awards will be beneficial to visa students since they are not eligible to apply for most of the external scholarships. She explained that Faculty deans will be notified of the allocation for their respective faculty. The deans will then work with the appropriate graduate associate deans to figure out how the awards will be granted to students. Dr. Sekuler further said the criteria for the selection of the award recipients will be similar to NSERC and SSHRCC scholarships. She further said that these awards may be used by departments for recruiting excellent students.

Steps for the Creation of New Graduate Programs or New Fields in Existing Doctoral Programs

Dr. Sekuler explained that the proposed changes to the Policy on the Steps for the Creation of New Graduate Programs or New Fields in Existing Doctoral Programs were submitted for discussion to the Graduate Council Executive Committee on February 25, 2009. The revised document now seeks Graduate Council approval. Discussion was held and the Council members suggested the following revisions to the document:
- Number 2, bullet 3 should read "many new faculty"
- Number 2, paragraph 4, line 2 should read "and/or Faculties"
- Section B, the following paragraph was added: "The general consensus of the students should be summarized and included when describing the rationale for the program. A written statement outlining the methodology and results should also be included."
- Section C, the following paragraph was added: "Students should be consulted in Step 2 and the Provost and Associate Vice-President and Dean of Graduate Studies should provide a written statement of the steps to be completed. If there are additional resources required, the appropriate involvement of the Dean and Provost should be included in the process."

Dr. Hatton moved, and Dr. Kehler seconded,

"that Graduate Council approve the proposed changes to the Policy on the Steps for the Creation of New Graduate Programs or New Fields in Existing Doctoral Programs with the amendments suggested above."

The motion was carried.

Graduate Calendar: Section 2.1.7 – Visiting Students

Dr. Sekuler said that Section 2.1.7 of the graduate calendar concerning visiting students was discussed at the Graduate Council Executive Committee on February 25, 2009. Dr. Sekuler explained that visa students who are not taking any courses and only working at research laboratories at McMaster are currently required to pay tuition and incidental fees. Dr. Sekuler said these visiting students are not using McMaster's resources as typical graduate students. Dr. Sekuler said the revised document circulated to the Council members reflect the changes suggested by the Graduate Council Executive Committee. After reviewing the document, the Council suggested the following: line 11 should read "The student is expected to pay the application fee, incidental fees, and the appropriate Canadian equivalent per course fee for the time that they are registered here."

Dr. Hatton moved, and Dr. Welch seconded,

"that Graduate Council approve the proposed changes to Section 2.1.7 (Visiting Students) of the Graduate Calendar with the amendments suggested above."

The motion was carried.

The Course Instructor, School of Graduate Studies

Dr. Sekuler explained that the Policy on The Course Instructor document was discussed at the GC Executive Committee on February 25, 2009. Dr. Sekuler further said that some departments/programs are unaware that the policy exists. Dr. Sekuler emailed chairs and graduate advisors informing them of the existence of this policy. Dr. Sekuler explained that the title is confusing and should be changed since the policy concerns procedures for offering graduate courses, course outline information, types of assignments, as well as responsibilities of the course instructors. Dr. Sekuler said that at the meeting of the GC Executive, a sub-committee was created, with Drs. Roy Cain and Mark Hatton as members, to review the policy and make recommendations to Graduate Council.

The Council members reviewed the document and the following items were suggested: the academic dishonesty statement should be in the policy; provide a written evaluation of student's performance in the course and meet with student to discuss evaluation; multiple assessments of student should occur to determine the final grade; and add a statement specifying that the requirements in the policy are minimum and there may be additional requirements from the program. The sub-committee will submit a revised document at the next meeting of Graduate Council.

Report from the Faculty of Business Graduate Curriculum and Policy Committee

Calendar Copy: Marketing Field in the Ph.D. Program in Business Administration

Dr. Goellnicht presented the proposed calendar copy for the Marketing Field in the Ph.D. Program in Business Administration. He explained that the proposal was approved by the Faculty of Business Graduate Curriculum and Policy Committee by means of an email ballot conducted on February 11, 2009. Dr. Goellnicht further commented that the document circulated had some typographical errors that need to be corrected.

Dr. Goellnicht moved, and Dr. Welch seconded,

"that Graduate Council approve the calendar copy for the Marketing Field in the Ph.D. program in Business Administration."

The motion was carried.

Dr. Goellnicht then briefly discussed the remaining items in the report for Graduate Council information.

Graduate Scholarships

Mr. Scime reviewed the following graduate scholarships for Council approval:

-The Guerino and Anna Maria Marinucci Academic Grant (MBA)
- The MBA Class of 1988 Greg Brophy Memorial Scholarship in Principled Leadership

- The Norm Archer Endowed Prize

Dr. Richards moved, and Dr. Hatton seconded,

“that Graduate Council approve the three graduate scholarships listed above.”

The last sentence describing the Norm Archer Endowed Prize was revised to “The prize will be awarded at the discretion of the Faculty of Business awards committee.”

The motion was carried.

There was no other business and the meeting adjourned at 11:35 a.m.

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GRADUATE SCHOLARSHIP – FOR GRADUATE COUNCIL APPROVAL

The Dr. Ronald J. Gillespie Prize in Inorganic Chemistry

Established in 2009 by friends and colleagues in honour of Prof. Ronald J. Gillespie, F.R.S., F.R.S.C., F.R.S.C. (U.K.), F.C.I.C., C.M., in recognition of 50 years of significant contributions to research and scholarly teaching in the Department of Chemistry at McMaster University. To be awarded by the School of Graduate Studies to a student enrolled in a Ph.D. program in inorganic chemistry, who in the judgment of a selection committee comprised of the Associate Chair of Chemistry responsible for graduate studies and inorganic chemists within the Department of Chemistry, demonstrates outstanding scholastic achievement and innovative research that embraces elements of fundamental inorganic chemistry.

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REPORT TO GRADUATE COUNCIL FROM THE FACULTY OF ENGINEERING GRADUATE CURRICULUM AND POLICY COMMITTEE

At its meeting on April 9, 2009, the Faculty of Engineering Graduate Curriculum and Policy Committee approved the graduate curriculum revisions for 2009-2010.

FOR GRADUATE COUNCIL APPROVAL

Chemical Engineering
- Closure of Diploma Programs
  - Advanced Automation in the Process Industries
  - Colloid, Polymer and Surface Science and Engineering
  - Polymer Processing Technology

Civil Engineering
- M.A.Sc. program – change in course requirements
- M.Eng. program – change in course requirements
- Ph.D. program – change in course requirements
- Change in calendar description: General description of Master's Degree
- Closure of Diploma Programs
  - Masonry: Material and Design
  - Rehabilitation of Civil Engineering

Electrical and Computer Engineering
- M.Eng. program – change in course requirements
- Change in the *General Requirements* calendar description: Eliminating M. Eng. students to register for course ECE 790

Walter G. Booth School of Engineering Practice
- Calendar copy: Walter G. Booth School of Engineering Practice

FOR GRADUATE COUNCIL INFORMATION

Biomedical Engineering
- New course
    *799 – Independent Study in Biomedical Engineering
- Course cross-listing
    *6I03 – Introduction to Biophotonics (same as Engineering Physics *6I03)

Chemical Engineering
- Cross-listing of courses
    *706 – Advanced Heat Transfer (same as Mechanical Engineering *706)
    *707 – Analytical Solutions in Transport Phenomena (same as Mechanical Engineering *707)
    *753 – Process Modeling and Optimization (same as SEP *752)
    *754 – Process Design and Integration for Minimal Environmental Impact (same as SEP *754)

Civil Engineering
- New course: *714 – Advanced Structural Mechanics

Computational Engineering and Science
- Cross-list Math *6Q03 as CES *6Q03 – Numerical Methods for Differential Equations
- Course cancellations
    #714 – Methods of Numerical Analysis
    #730 – Numerical Methods for Differential Equations

Computing and Software
- New courses
    *760 – Logic for Practical Use
    *761 – Generative Programming
- Course cancellations
    *735 – Convex Optimization in Engineering
    *737 – Optimization Software Design
- Request to list 400-level courses as anti-requisites for corresponding 600-level courses

Electrical and Computer Engineering
- New course
    *701 – M. Eng. Project

Engineering Physics
- Change in course description
    *716 – Nuclear Reactor Heat Transport System Design
    *718 – Reactor Heat Transport System Simulation and Analysis
    UNENE 0804 – Nuclear Reactor Heat Transport System Design

- Change in course number
    *6S04 – Introduction to Lasers and Electro-Optics
- Change in calendar description
    Nuclear Technology Diploma Program – page 231 of the Graduate Calendar
    UNENE program – page 118 of the Graduate Calendar
- Course cancellations
    *6E03 – Solid State Devices
    *6Z03 – Semiconductor Manufacturing Technology
    *711 – Fusion and Plasma Engineering

Walter G. Booth School of Engineering Practice
- New course
    SEP *710 – International Governance and Environmental Sustainability
- Change in course description
    *709 – Emerging Issues, Technology and Public Policy
- Change in course title and description
    *760 – Design and Innovation
    *761 – Product Design and Development (make SEP *760 as pre-requisite for this course)
- Course cross-listing
    *752 – Process Modeling and Optimization (to be cross-listed as Chemical Engineering *753)
- Course cancellations
    *6Z03 – The Social Control of Technology
    *726 – Cases in eBusiness, Innovation and Entrepreneurship *(removal from SEP list of courses; this course will still exist in the School of Business as Business K737)*
    *740 – Industry-Driven Design with Emerging Technologies
    *741 – Best Practices in Engineering Design
    *742 – Innovation and Product Strategy
    *743 – Product Development and Design

Mechanical Engineering
- Change in course title and cross-listing
    *706 – Advanced Heat Transfer (same as Chemical Engineering *706)
    *707 – Analytical Solutions in Transport Phenomena (same as Chemical Engineering *707)
- Change in course title
    *753 – Advanced Fluid Mechanics

/medy
April 14, 2009

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Chemical Engineering
NAME OF PROGRAM	Advanced Automation in the Process Industries

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program (x)**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER	X	**EXPLAIN:** Removal of program			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Students are required to complete 4 half-courses with a 3-year period from a prescribed list of courses.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

RATIONALE FOR THE RECOMMENDED CHANGE:

There has been little student interest in the Diploma program.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

No students registered in the Diploma Program - end effective July 1, 2009.

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Delete program

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Andrew Hrymak Email: hrymak Extension: 23136 Date: January 23, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

12. DIPLOMA PROGRAMS

ADVANCED AUTOMATION IN THE PROCESS INDUSTRIES

The Department of Chemical Engineering has developed a Graduate Diploma Program in Advanced Automation in the Process Industries. This program is designed to enable engineers to build capabilities beyond the undergraduate level to design and implement advanced techniques in feedback process control, dynamic process modeling, applied statistics, and operations optimization.

Enquiries: 905 525-9140 Ext. 24292
Email: chemeng@mcmaster.ca

ADMISSION

Acceptance to this program follows the established procedures and standards for admission to Master of Engineering degree graduate programs at McMaster University. Application materials and an explanation of procedures are provided in the Chemical Engineering Department Brochure of Graduate Studies and Research.

COURSE REQUIREMENTS

A student will be granted a Graduate Diploma in Advanced Automation in the Process Industries upon the completion of 4 half courses with a minimum passing grade of B- within a three-year period. The courses must be from the following list, and at least two of the courses must be at the 700-level. Exceptions to these course requirements must be granted by special permission of the Faculty of Engineering Graduate Admissions and Study Committee.

Courses

CHEMICAL ENGINEERING

***6C03 / Statistics for Engineers / J.F. MacGregor**
Linear regression analysis in matrix form, non-linear regression, multiresponse estimation, design of experiments including factorial and optimal designs. Special emphasis on methods appropriate to engineering problems.

***6E03 / Digital Computer Process Control / C. Swartz**
This course addresses key aspects of implementing control via discrete calculations using digital computers. Topics include discrete-time dynamic models, system identification, analysis of discrete-time systems, design of digital control systems, and model predictive control.

***704 / Current Topics in Chemical Engineering / Staff**
These courses differ from year to year depending on student interest.

***752 / Optimization of Chemical Processes / Staff**
Numerical techniques for achieving optimal performance of a chemical process. Topics in numerical linear algebra; optimality conditions; algorithms for unconstrained optimization; application to solution of nonlinear equation systems and least-squares problems; linear programming; algorithms for constrained optimization; dynamic optimization; interior-point methods; mixed-integer programming; global optimization. Application to process design, control, operation and scheduling.

***761 / Multivariable, Stochastic and Adaptive Control of Chemical Processes / P.A. Taylor, J.F. MacGregor**
Introduction to control of multivariable chemical processes. Topics usually covered: dynamic-stochastic models, minimum variance and adaptive controllers, multivariable optimal control, nonlinear control, constraint handling for chemical process control and optimization, observers and inferential control.

***762 / Time Series Analysis and Process Identification / P.A. Taylor**
Methods for modeling the dynamic-stochastic behaviour of a process and its disturbances using data collected from the process. Traditional methods for impulse and frequency response identification. Discrete transfer function and ARIMA time series models. Statistical methods for structure determination, parameter estimation, model validation, design of experiments, and analysis of closed-loop data. Use of models for forecasting, analysis, and control.

***764 / Process Control Design / T.E. Marlin**
Techniques for designing control system structures; including modeling, flexibility, controllability, integrity, reliability, interaction and performance metrics, economic performance, and robustness. The key affect of process dynamics on performance is presented. Both decentralized multiloop and centralized model-predictive control are considered. Techniques are applied to selected process equipment and processes.

***765 / Multivariate Statistical Methods for Process Analysis and Monitoring / J.F. MacGregor**
This course is based around multivariate latent variable models which assume low dimensional latent variable structures for the data. Multivariate statistical methods including Principal Component Analysis (PCA), and Partial Least Squares (PLS) are used for the efficient extraction of information from large databases typically collected by on-line process computers. These models are used for the analysis of process problems, for on-line process monitoring, and for process improvement.

ADVANCED NEONATAL NURSING

The McMaster Graduate Diploma Program in Advanced Neonatal Nursing is a graduate level advanced nursing practice specialty program offered within the Faculty of Health Sciences and sponsored by the Graduate Programs in Health Sciences. It is specifically designed to meet the accreditation requirements of the United States National Certification Corporation with respect to curriculum requirements, hours of classroom instruction and of clinical practice within an accredited educational institution and coordination of the course work by a doctorally prepared, Board certified neonatal nurse practitioner. Each graduate is eligible to apply for certification as a neonatal nurse practitioner by the National Certification Corporation. Application for admission must be made through the office of the Graduate Programs in Health Sciences. Enrolment is limited.

Enquiries: 905 525-9140 Ext. 22983
Fax: 905 546-1129
E-mail: taym@mcmaster.ca
Website: http://www.fhs.mcmaster.ca/grad

ADMISSION

Acceptance to this program follows the established procedures and standards for admission to the Master of Science (Nursing) degree program at McMaster University. Application materials and an explanation of procedures are provided in the Nursing brochure. The Diploma Program is available to both full- and part-time students admitted from the Nursing M.Sc. (Category 1) or Post-Master's Degree students (Category 2):

Category 1-Neonatal Nursing Stream M.Sc. Program
Nursing students must have completed at least 3/4 of their course work requirements for the McMaster M.Sc. degree prior to admission, since the Diploma requirements are additional to those requirements for the M.Sc. degree (see Nursing section of this Calendar). Students may apply and register in this Diploma Program while completing their M.Sc. thesis research. However, a separate application and tuition fee are required for enrolment in the Advanced Neonatal Nursing Diploma Program.

McMaster University

SCHOOL OF GRADUATE STUDIES

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2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Chemical Engineering
NAME OF PROGRAM	Colloid, Polymer and Surface Science and Engineering

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program (x)**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER	X	**EXPLAIN:** Removal of program			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Students are required to complete 4 half-courses with a 3-year period from a prescribed list of courses.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

RATIONALE FOR THE RECOMMENDED CHANGE:

There has been little student interest in the Diploma program

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*

No students registered in the Diploma Program - end effective July 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Delete program

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Andrew Hrymak Email: hrymak Extension: 23136 Date: January 23, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

For the Graduate Diploma Program in Advanced Neonatal Nursing, at least two years' experience in neonatal critical care will be required in addition to specific requirements of the M.Sc. degree program in Nursing.

Category 2-Post-Master's Degree Students
The Diploma Program is also open to qualified applicants who have already completed or are currently enrolled in a relevant Master's degree, having successfully completed at least 3/4 of the course requirements, either at McMaster or at another University. In this case, admission to the Diploma program as a post-degree student does not guarantee subsequent admission to the M.Sc. or Ph.D. program in Nursing (see the General Regulations of the School of Graduate Studies, section 2.1.3 of this Calendar).

The following materials are required for enrolment in the Graduate Diploma in Advanced Neonatal Nursing Program:

- Completed or currently enrolled in a Master's degree in a clinical nursing specialty with at least a B+ standing
- Evidence of eligibility to be registered or licensed in her/his own province/country
- Minimum of two years' experience in neonatal clinical care
- Current curriculum vitae
- Two clinical letters of reference
- Two academic letters of reference
- Autobiographical letter
- Original post-secondary transcripts
- Foreign applicants whose native language is not English are required to supply evidence of their proficiency in the use of the English language [e.g., TOEFL score of 92 (iBT), 580 (paper test) or 237 (computer test)]
- Completed application form and $90.00 application fee (Canadian currency)

For both Category 1 and Category 2 students, the Ontario Public Hospitals Act requires that all persons working in a hospital setting meet certain criteria regarding surveillance for infectious diseases. In order for the requirement of the legislation to be met, once students have been enrolled in the Program, they must complete Pre-Clinical Communicable Disease Screening annually through the Student Health Services. More information will be sent to specific applicants prior to registration. Specific questions can be directed to the Office of the Associate Dean of Graduate Studies (Health Sciences).

COURSE REQUIREMENTS

Students in the neonatal stream of the M.Sc. degree program in Nursing (category 1), must complete with at least a B- standing, the following required courses: NUR *701, *709, 720, 721, *722, or HRM *701 or *702, HRM *721, HRM/NUR *745 and one additional course selected by the student in conjunction with the supervisor or supervisory committee.

Students admitted as Master's post-degree students under Category 2 must complete, with at least a B- standing, the following required courses: NUR 720, 721, and *722.

Required Diploma Courses

720 / Advanced Nursing Care of High Risk Infants and Families / J. Pinelli, Staff
This problem-based learning course allows students to apply advanced problem-solving skills using selected clinical problems relevant to neonatal critical care. Students will acquire advanced theoretical knowledge in the physiological, behavioural, medical, and nursing sciences required for solving neonatal-focused problems through the identification and analysis of literature reviews and research papers. Students will develop differential medical and nursing diagnoses and plans of care and critically analyze the health and illness management strategies and outcomes of each case study.

721 / Advanced Neonatal Nursing Clinical Practice I / A. Symington, Staff
This course provides an opportunity for students to develop advanced skills and knowledge by progressive clinical experiences through exposure to patient and family situations in the neonatal intensive care unit. Students will develop and implement a plan of care for a selected patient(s), and families utilizing a variety of skills and knowledge applications. Students will provide health and illness management of neonates who require intensive medical and nursing.

***722 / Advanced Neonatal Nursing Clinical Practice II / A. Symington, Staff**
Students will have the opportunity to consolidate their advanced skills and knowledge in an intensive clinical experience and to demonstrate increasing responsibility and independence in the care of patients and families with complex needs and problems. This experience will provide students the opportunity to refine their diagnostic and therapeutic clinical skills. Seminar discussions will cover issues relevant to the student's new role, including systems entry and clinical issues: parental support, premature infant feeding, long-term follow-up of ill neonates, pain management.

COLLOID, POLYMER AND SURFACE SCIENCE AND ENGINEERING

The Department of Chemical Engineering offers a Graduate Diploma in Colloid, Polymer and Surface Science and Engineering. The fundamentals of colloids, polymers and surfaces are important in the technologies of many industries. This diploma program will allow a student to tailor their choice of courses to provide an overview of the fundamentals in these allied areas or provide an in-depth study of topics to support their interest in a particular industrial technology.

ADMISSION

Acceptance to this program follows the established procedures and standards for admission to Master of Engineering degree graduate programs at McMaster University. Application materials and an explanation of the admission process can be found in the Department of Chemical Engineering's Brochure of Graduate Studies and Research.

COURSE REQUIREMENTS

The student will be granted a Graduate Diploma in Colloid, Polymer and Surface Science and Engineering upon the completion of 4 half courses within a three year period with a minimum passing grade of B- for each course. The courses must be selected from the following list and at least two of the courses must be at the 700-level. Exceptions to these course requirements must be granted by special permission of the Faculty of Engineering Graduate Admissions and Study Committee.

Courses

CHEMICAL ENGINEERING

***6B03 / Polymer Reaction Engineering**
Kinetics of polymerization: step growth and chain-growth (free-radical, anionic, anionic coordination and cationic). Polymerization processes: solution/bulk, suspension, emulsion, gas-phase, slurry and reactive processing. Principles of polymer process and reactor design, optimization and control.

***6X03 / Polymer Processing / J. Vlachopoulos**
An introduction to the basic principles of polymer processing, stressing the development of models. Rheology of polymers, extrusion, molding, films, fibers, and mixing. Reactive processing.

***6Z03 / Interfacial Engineering / R.H. Pelton**
The physics and chemistry at the "nano" scale including interactions forces, colloids, surface active systems, wetting, adhesion, and flocculation.

***730 / Fluid Mechanics / J. Vlachopoulos, P.E. Wood**
Vectors, tensors, dyadics, Cartesian index notation, stress analysis. The conservation of mass, momentum and energy. Constitutive equations. Boundary layer flow theory. Potential flow. Stokes flow. Turbulence.

***772 / Polymer Rheology / J. Vlachopoulos**
Rheology of thermoplastic melts, conservation, and constitutive equations. Viscoelasticity. Complex flows, die swell, melt flow instability. Continuum and molecular theories including reptation. The role of rheology in processing.

***790 / Selected Topics in Colloid and Surface Science / R. Pelton**
Introduction to surface tension, surface activity, contact angles, surfactant structure, colloid stability, electrostatic stabilization, steric stabilization and flocculation kinetics. This course is an introduction to colloid and surface science for engineers as scientists. Emphasized are the properties of polymer colloids (latexes) in aqueous and non-aqueous media.

HEALTH SERVICES AND POLICY RESEARCH

The Faculty of Health Sciences Graduate Program offers a *Graduate Diploma in Health Services and Policy Research*. Health services research is research that is intended to inform policy development and decision making regarding: a) the organization, funding, and delivery of health services, or b) the allocation of resources dedicated to improving health. Increasing the number of health services researchers to address critical issues in effective and efficient health care delivery has been identified as a high priority by national research funding agencies.

Students interested in applying for the Diploma Program must plan to: a) do a thesis or final project/paper related to health services research and b) be enrolled in one of the following research-focused thesis or course-based graduate degree programs at the Master's or Ph.D. level: Anthropology, Business Administration, Economics, Geography, Health Research Methodology, Kinesiology, Medical Sciences, Nursing, Rehabilitation Sciences, Mathematics, Social Work, Sociology, or Statistics.

Through the Ontario Training Centre in Health Services and Policy Research, students accepted into the Diploma Program may be eligible for stipends.

Unique features of this Diploma Program include: availability of courses addressing important issues in health services research at any of the 6 participating universities (Lakehead, Laurentian, McMaster, Ottawa, Toronto, and York); linkages with students and faculty across universities and disciplines; and field placement opportunities in policy and research settings to work with health services researchers and decision makers across the province.

The minimum requirement for the Diploma is 1.5 full course equivalents over and above graduate degree requirements. The Program will be open to both full- and part-time students. For students who undertake the diploma requirements full-time, the expected duration of the diploma program is 2 terms.

For further information contact Miguel A. Pérez, Ph.D. (OTC Program Coordinator) by phone at 905 525-9140 extension 26203 or by email at mperez@mcmaster.ca.
Website: http://www.fhs.mcmaster.ca/grad/hrm/otc/proginfo.htm

For an application package, contact Rose Vonau, OTC Administrative Assistant, by phone at 905 525-9140 extension 22408, by fax at 905 526-7949, or by email at vonau@mcmaster.ca.

MANAGEMENT OF INNOVATION AND NEW TECHNOLOGY

The DeGroote School of Business offers two graduate diplomas in the Management of Innovation and New Technology called, respectively, **Graduate Diploma in the Management of Innovation and New Technology** and **Advanced Graduate Diploma in the Management of Innovation and New Technology**.

The Management of Innovation and New Technology (MINT) is of interest because technology and innovation are two principal drivers of business success. Firms that have mastered general capabilities for innovation and/or use technology in innovative ways are revolutionizing how business is done. There is a growing consensus that firms who know how to create value with science and technology hold the key to wealth creation in such industries as pharma/biotech, aerospace, electronics and computing. Many firms have found that the most effective way to sustain profits is to maintain a competitive edge over their rivals through constant innovation in all aspects of their operations, including those involving technology. These graduate diplomas provide an opportunity for managers and students to pursue these important themes at an advanced level that builds upon their already completed academic accomplishments in business. All the courses in both these diplomas are taken in classes with advanced level M.B.A. students.

GRADUATE DIPLOMA IN THE MANAGEMENT OF INNOVATION AND NEW TECHNOLOGY

The graduate diploma provides an overview of MINT and an opportunity to study, in more depth, selected topics within the field. The program consists of two required courses which provide the overview, and two elective courses which provide the opportunity to study selected topics.

ADMISSION CRITERIA

1. Successful applicants must have completed a course of study equivalent to Year I of the DeGroote School of Business M.B.A. or must be admissible to the MGD M.B.A. with advanced credit for Year I.

   Applications from international students will be evaluated on a case-by-case basis to establish equivalencies.

2. Successful applicants must be proficient in English.

   If the applicant does not hold a post-secondary degree from a program whose language of instruction was English, a satisfactory TOEFL score (including TSE) will be required. Other evidence of proficiency in English (such as letters from an employer and/or educator) will also be considered.

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Chemical Engineering
NAME OF PROGRAM	Polymer Processing Technology

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program (x)**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER	X	**EXPLAIN:** Removal of program			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Students are required to complete 4 half-courses with a 3-year period from a prescribed list of courses.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

RATIONALE FOR THE RECOMMENDED CHANGE:

There has been little student interest in the Diploma program

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*

No students registered in the Diploma Program - end effective July 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Delete program

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Andrew Hrymak Email: hrymak Extension: 23136 Date: January 23, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

***713 / Nuclear Safety Analysis and Reactor Accidents / J.C. Luxat**
Degraded fuel heat transfer; fuel failure mechanisms; fission product release and transport from nuclear fuel; leak-before-break and piping fracture mechanics; pipe ruptures; challenges to containment system integrity; severe accident progression and mitigation; off-site release of fission products; applications to CANDU and LWR reactors.

***714 / Nuclear Reactor Safety Design / Staff**
Risk based design and analysis of nuclear reactors based on probabilistic assessments. Topics include: concepts of risk; probability tools and techniques; safety criteria; design basis accidents; risk assessment; safety analysis; safety system design; and general policy and principles.

***715 / Advanced Nuclear Reactor Thermalhydraulics / Staff**
Advanced topics of current interest in the area of fission and fusion nuclear reactor primary heat transport system, system safety and the transitional operations.

***716 / Nuclear Reactor Heat Transport System Design / Staff**
Thermal-hydraulic design and analysis of the primary heat transport system of nuclear reactors, emphasizing reactor main components and characteristics. Review of design methods and system equations based on conservation of heat, momentum and mass, including adequate empirical design correlations, and critical heat flux and pressure drop calculation methods. Topics include description of reactor components and systems, plant control, design methodology, steady state and transient performance, safety design margins.

***717 / Pollution Control Plasma Technology / Staff**
Combustion flue gas treatment by energetic electron processes (electron beam/plasma); toxic waste treatments by ionizing radiation; waste water treatment by electron beams and pulse electric discharges; neutron activation analyses; ICP plasma analyses; thermal plasma waste treatments.

***718 / Reactor Heat Transport System Simulation and Analysis / Staff**
Two-fluid two-phase modeling of thermalhydraulics phenomena in reactor heat transport system including modeling and simulation of postulated accidents. Topics include: two-fluid conservation equations and constitutive correlations, nodalization schemes and numerical methods applied in thermalhydraulic network simulation, equation of state and the rate method, computer code development, CATHENA computer code specific theory, numerical algorithm, and flow regime modeling. This is a simulation-based course; it includes CATHENA simulation assignments.

POLYMER PROCESSING TECHNOLOGY

The Department of Chemical Engineering has developed a Graduate Diploma Program in Polymer Processing Technology. Polymer processing is one of the most important manufacturing industries in the Ontario economy. The diploma will provide a fundamental basis for engineers involved in major polymer processing functions.

Enquiries: 905 525-9140 Ext. 24292
Email: chemeng@mcmaster.ca

ADMISSION

Acceptance to this program follows established procedures and standards for admission to Master of Engineering degree graduate programs at McMaster University. Admission will be considered on the basis of university education and work experience. Application materials and an explanation of the admission process will be provided in the Department of Chemical Engineering's Brochure of Graduate Studies and Research. Students may apply for the diploma through either Chemical or Mechanical Engineering.

COURSE REQUIREMENTS

The student will be granted a Graduate Diploma in Polymer Processing Technology upon the completion of four half courses within a three year period with a minimum passing grade of B- for each course.

The courses must be selected from the following list and at least two of the courses must be at the 700-level. Exceptions to these course requirements must be granted by special permission of the Faculty of Engineering Graduate Admissions and Study Committee.

Courses

CHEMICAL ENGINEERING COURSES

***6X03 / Polymer Processing / J. Vlachopoulos**
An introduction to the basic principles of polymer processing, stressing the development of models. Rheology of polymers, extrusion, molding, films, fibers, and mixing. Reactive processing.

***730 / Fluid Mechanics / J. Vlachopoulos, P.E. Wood**
Vectors, tensors, dyadics, Cartesian index notation, stress analysis. The conservation of mass, momentum and energy. Constitutive equations. Boundary layer flow theory. Potential flow. Stokes flow. Turbulence.

***733 / Computational Fluid Dynamics / A.N. Hrymak, P.E. Wood**
The solution of the Navier-Stokes equations using finite volume and finite element methods. Primitive-variable formulations are presented and applied to the solution of incompressible flows. Example problems include boundary layer and internal flows with recirculation. Advanced topics include guiding strategies and boundary fitted coordinates. Extensions of basic methods to complex problems, which include a feature from the following list: turbulence, non-newtonian rheology and free surfaces (depending on class interest).

***772 / Polymer Rheology / J. Vlachopoulos**
Rheology of thermoplastic melts, conservation, and constitutive equations. Viscoelasticity. Complex flows, die swell, melt flow instability. Continuum and molecular theories including reptation. The role of rheology in processing.

***773 / Advanced Concepts of Polymer Extrusion / M. Thompson**
Fundamental mechanics of solids-conveying, melting, pumping and mixing in extrusion. Modeling and practical topics in single-screw and twin-screw extrusion. Coverage of the application areas of extrusion as they exist at the present. Screw design principles, metallurgical concerns and manufacturing methods are discussed. Introduction to special topics in the field of extrusion.

***774 / Advances in Polymeric Materials / M. Thompson**
This course examines the growing field of polymer alloys, blends and composites. The student is introduced to the current principles and practice behind these advanced polymeric materials, looking at techniques of characterization as well as the properties generated in such materials. Often linked with both polymer blends and composites is the field of reactive processing, a maturing research area with much commercial utilization that uses polymer processing equipment (typically an extruder) as a reactor for the chemical modification of polymers.

MECHANICAL ENGINEERING COURSES

***706 / Advanced Heat Transfer I / R.L. Judd**
Steady and transient conduction stressing formulation and approximate solution techniques. Convection heat transfer including compressible and incompressible flow. Radiation heat transfer including gray body radiation and radiation from gases and vapours.

***707 / Advanced Heat Transfer II / S. Shankar**
Solution of boundary value problems in conduction heat transfer; mass transfer analogy to heat transfer; ablative cooling; theory of solidification; boiling heat transfer.

***710 / Machine Tool Analysis / M.A. Elbestawi**
Definitions and test of accuracy. Metrology using laser interferometer. Thermal deformations. Automation, numerical control: command generation, digital positional servos. Dynamics of machine tool structures, stability against chatter. Selection, specification, utilization, maintenance.

***728 / Manufacturing Processes I / P. Koshy**
Fundamentals of metal cutting: cutting process, cutting forces and temperatures, tool wear, machinability of materials, machined surface quality and integrity, optimization of cutting conditions. Applications to single edge and multiple edge operations and grinding.

PRIMARY HEALTH CARE NURSE PRACTITIONER

The admission requirements for the Graduate Diploma as a Primary Health Care Nurse Practitioner (PHCNP) are a completed Master's degree with a minimum B+ average and at least two years in clinical practice out of the past five years. Those with a completed Master's degree in Nursing may enter the PHCNP Consortium course phase and be granted a Graduate Diploma upon completion of the seven NP courses. Since the PHCNP courses are offered every year, students can expect to complete the courses within 12 months of full-time study. Part-time students have two years to complete the PHCNP courses. Once the PHCNP courses have been completed successfully, students are eligible to write their RN (Extended Class) exams. For more information about the PHCNP courses, see http://np-education.ca.

Enquiries: 905-525-9140 Ext. 22099
Fax: 905-546-1129
Email: gcira@np-education.ca
Website: http://www.fhs.mcmaster.ca/grad

OR

Eric Staples (NP Faculty Liaison)
905-525-9140 Ext. 22099
Email: estap@np-education.ca

REHABILITATION OF CIVIL ENGINEERING STRUCTURES

The Department of Civil Engineering offers a Diploma Program in Rehabilitation of Civil Engineering Structures.

Rehabilitation of civil engineering structures is an important and growing sector of the construction industry. This diploma will provide a fundamental basis and practical case studies for engineers involved in repair, restoration and rehabilitation of civil engineering structures.

ADMISSION

Applicants must hold a baccalaureate degree in the field of Civil Engineering with an acceptable grade point average, similar to that for entry into an M.A.Sc. or M.Eng. degree program. Consideration will be given to work experience. In addition, applicants must be deemed to have satisfactory preparation, as a result of university education and work experience, to succeed in the program. The Department Chair, upon the recommendation of the departmental Graduate Admissions Committee, will make admission recommendations to the School of Graduate Studies.

REQUIREMENTS

The student will be granted a Graduate Diploma in "Rehabilitation of Civil Engineering Structures" upon the completion of two full courses within a three year period with a minimum passing grade of B- for each course. A minimum of one full course must be taken from the list of area courses with the remaining courses selected from the structural engineering, engineering mechanics or geotechnical engineering area.

The courses must be selected from the following lists. Exceptions to these course requirements must be granted by special permission from the Faculty of Engineering Admissions and Study Committee acting on the recommendation of the Department Chair.

AREA COURSES

#702 / Rehabilitation of Structures / Staff
Evaluation of the load carrying capacity of existing structures. Identification of the deficiencies in design and deterioration of structures. Criteria for selection and design of the most suitable rehabilitation system. Design details of selected rehabilitation system.

***730 / Earthquake Engineering / J.C. Wilson**
Engineering seismology; seismic design principles applied to building structures, and special facilities, code provisions for earthquakes; seismic design of concrete structures, special provisions; elastic and inelastic static and dynamic modeling.

#731 / Building Science / Staff
Building envelope (roof and wall) requirements for air and vapour barriers and insulation, including new materials and new construction methods. Fire and smoke requirements for building design. Introduction to sound transmission.

***732 / Concrete Structures - Materials, Maintenance and Repair / S.E. Chidiac**
Portland Cement and its constituent phases; role of water in hydrated cement systems, hydration parameters, limiting hydration, state of water, porosity, engineering properties; structural models for C-S-H; hydration mechanisms: through solution, solid state; pore structure determination; engineering properties; role of admixtures and supplementary cementing materials; analysis of fresh and hardened concrete; durability; transport properties, relationships between transport properties and durability; in-situ evaluation of concrete structures; materials and techniques for repair; service life/durability design of concrete structures.

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Civil Engineering
NAME OF PROGRAM	Master of Applied Science

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. (X)**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

M.A.Sc. Degree
Candidates will be required to complete satisfactorily the equivalent of at least two full courses, of which at least one must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's research supervisor. In addition to the above course requirements, all full-time Master's candidates must register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the entire period of study. A dissertation must be presented which will embody the results of an original investigation; the dissertation is to be defended in an oral examination. This program is intended mainly for full-time candidates but may be taken on a part-time basis.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

The students who are enrolled in our full time Master's program would be required to register, attend and participate in 761 – Graduate Seminar (Master's) for the first 6 terms (24 months) of study, not the "entire period of study" as previously stated.

RATIONALE FOR THE RECOMMENDED CHANGE:

As the criteria stands now, Master's students cannot apply for discounted tuition fees and remain a full time student. The only way a student can apply for discounted tuition fees is if he or she has completed all their course work and research. If we continue with the practice of all full-time students must enroll in CIV ENG 761 for their entire period of study, then the student would not be eligible for the discount.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

September 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Candidates will be required to complete satisfactorily the equivalent of at least two full courses, of which at least one must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's research supervisor. In addition to the above course requirements, all full-time Master's candidates must register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the first 6 terms (24 months) of study. A dissertation must be presented which will embody the results of an original investigation; the dissertation is to be defended in an oral examination. This program is intended mainly for full-time candidates but may be taken on a part-time basis.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Sarah Dickson Email: sdickso@mcmaster.ca Extension: 24914 Date: January 30th, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

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3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Civil Engineering
NAME OF PROGRAM	Master of Engineering

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. (X)**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

M. Eng. Degree
Candidates will be required to complete satisfactorily the equivalent of at least three full courses, of which at least 1.5 must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's project supervisor. In addition to the above course requirements, all full-time Master's candidates must register, attend and participate in 761 - Graduate Seminar (Master's) for the entire period of study. A report must be presented on a project which demonstrates ability to carry out independent study and reach a satisfactory conclusion. The report must be approved by the department and presented orally to the department. This program is primarily intended for part-time M. Eng. candidates, but may be taken by full-time students.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

The students who are enrolled in our full time Master's program would be required to register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the first 6 terms (24 months) of study, not the "entire period of study" as previously stated.

RATIONALE FOR THE RECOMMENDED CHANGE:

As the criteria stands now, Master's students cannot apply for discounted tuition fees and remain a full time student. The only way a student can apply for discounted tuition fees is if he or she has completed all their course work and research. If we continue with the practice of all full-time students must enroll in CIV ENG 761 for their entire period of study, then the student would not be eligible for the discount.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

September 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

M. Eng. Degree
Candidates will be required to complete satisfactorily the equivalent of at least three full courses, of which at least 1.5 must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's project supervisor. In addition to the above course requirements, all full-time Master's candidates must register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the first 6 terms (24 months) of study. A report must be presented on a project which demonstrates ability to carry out independent study and reach a satisfactory conclusion. The report must be approved by the department and presented orally to the department. This program is primarily intended for part-time M. Eng. candidates, but may be taken by full-time students.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Sarah Dickson Email: sdickso@mcmaster.ca Extension: 24914 Date: January 30th, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

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2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Civil Engineering
NAME OF PROGRAM	Doctor of Philosophy

PROGRAM DEGREE	**Ph.D. (X)**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Ph.D. Degree
Candidates will be required to complete satisfactorily the equivalent of at least two full courses in addition to the course requirement for an M.A.Sc. degree, of which at least one must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's research supervisor. In addition to the above course requirements, all full-time Ph.D. candidates must register, attend and participate in 762 - Graduate Seminar (Ph.D.) for the entire period of study.

The Ph.D. candidate will be evaluated by the Ph.D. Supervisory Committee after two academic terms in the Ph.D. Program. This will be based on an evaluation of the candidate's ability to think, intellectual background, and general calibre as a doctoral student. The candidate must also pass a Comprehensive Examination which is normally taken in the second year of the doctoral program. The purpose of this examination is to test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. The detailed regulations governing these examinations may be obtained from the Department.

Part-time doctoral studies are permissible. Graduate students will also be required to present seminars related to their research topics.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

The students who are enrolled in our full time PhD program would be required to register, attend and participate in CIV ENG 762 - Graduate Seminar (PhD) for the first 12 terms (48 months) of study, not the "entire period of study" as previously stated.

RATIONALE FOR THE RECOMMENDED CHANGE:

As the criteria stands now, Doctoral students cannot apply for discounted tuition fees and remain a full time student. The only way a student can apply for discounted tuition fees is if he or she has completed all their course work and research. If we continue with the practice of all full-time students must enroll in CIV ENG 762 for their entire period of study, then the student would not be eligible for the discount.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

September 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Ph.D. Degree
Candidates will be required to complete satisfactorily the equivalent of at least two full courses in addition to the course requirement for an M.A.Sc. degree, of which at least one must be from within the Department of Civil Engineering at McMaster University. Additional course work may be prescribed if deemed necessary by the candidate's research supervisor. In addition to the above course requirements, all full-time Ph.D. candidates must register, attend and participate in CIV ENG 762 - Graduate Seminar (Ph.D.) for the first 12 terms (48 months) of study.

The Ph.D. candidate will be evaluated by the Ph.D. Supervisory Committee after two academic terms in the Ph.D. Program. This will be based on an evaluation of the candidate's ability to think, intellectual background, and general calibre as a doctoral student. The candidate must also pass a Comprehensive Examination which is normally taken in the second year of the doctoral program. The purpose of this examination is to test the candidate's acquisition of knowledge and maturity of approach to problems in the major field of study, as well as in appropriately chosen cognate subject areas. The detailed regulations governing these examinations may be obtained from the Department.

Part-time doctoral studies are permissible. Graduate students will also be required to present seminars related to their research topics.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Sarah Dickson Email: sdickso@mcmaster.ca Extension: 24914 Date: January 30th, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

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2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Civil Engineering
NAME OF PROGRAM	Master

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***
								X

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	X	**EXPLAIN:** General description of Master's degree
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Master's Degree
A candidate for the Master's degree may proceed by either a thesis (M.A.Sc.) or project (M.Eng.) program. In each case the candidate is required to spend at least one calendar year in full-time graduate study, or the equivalent in part-time graduate study at McMaster University. All full-time Master's candidates must register, attend and participate in 761 - Graduate Seminar (Master's) for the entire period of study. Regulations for Master's examinations are available from the Department.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

The students who are enrolled in our full time Master's program would be required to register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the first 6 terms (24 months) of study, not the "entire period of study" as previously stated.

RATIONALE FOR THE RECOMMENDED CHANGE:

As the criteria stands now, Master's students cannot apply for discounted tuition fees and remain a full time student. The only way a student can apply for discounted tuition fees is if he or she has completed all their coures work and research. If we continue with the practice of all full-time students must enroll in CIV ENG 761 for their entire period of study, then the student would not be eligible for the discount.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

September 1, 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

No

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

A candidate for the Master's degree may proceed by either a thesis (M.A.Sc.) or project (M.Eng.) program. In each case the candidate is required to spend at least one calendar year in full-time graduate study, or the equivalent in part-time graduate study at McMaster University. All full-time Master's candidates must register, attend and participate in CIV ENG 761 - Graduate Seminar (Master's) for the first 6 terms (24 months) of study. Regulations for Master's examinations are available from the Department.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Sarah Dickson Email: sdickso@mcmaster.ca Extension: 24914 Date: January 30th, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

Department of Civil Engineering
1280 Main Street West
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Canada L8S 4L7
Tel 905.525.9140 Ext. 24287
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http://www.mcmaster.ca/civil

MEMORANDUM

To: Faculty of Engineering JCPC

From: Dr. A. Ghani Razaqpur, Department Chair
Department of Civil Engineering

Date: February 9, 2009

RE: **Cancellation of Masonry: Material and Design Diploma Program**

The Department of Civil Engineering has decided to cancel the Masonry: Material and Design Diploma Program beginning with the 2009-2010 academic year due to a consistent lack of enrolment since the programme's inception. A total of 6 students have registered for the programme; three of whom have not registered for any courses since 2004, two withdrew in 2004 & 2005, respectively, and the fourth graduated in the spring of 2005.

It is not reasonable to continue to offer a programme that has attracted such little interest since its inception, and the Department of Civil Engineering does not have the resources to offer the required number of courses to so few students. Therefore, we are requesting the removal of the Masonry: Material and Design Diploma Program from the 2009-2010 School of Graduate Studies Calendar.

Should you have any questions, please do not hesitate to contact me.

COURSE REQUIREMENTS

Required: **B730 /** Strategic Management of Technology
P724 / Innovation and New Products

Elective: Two courses from the elective courses menu below.

ADVANCED GRADUATE DIPLOMA IN THE MANAGEMENT OF INNOVATION AND NEW TECHNOLOGY

The advanced graduate diploma builds upon the graduate diploma by having students focus on current issues in MINT, and by giving them the opportunity to study in more depth a number of topics in the field. The program consists of one required course which examines current issues, and three elective courses which allow students to pursue further studies on topics of particular interest to them.

ADMISSION CRITERIA

Completion of the Graduate Diploma in the Management of Innovation and New Technology

COURSE REQUIREMENTS

Required: **P734 /** Current Issues in the Management of Innovation and New Technology

Elective: Three courses from the elective courses menu below

ELECTIVE COURSES MENU FOR THE GRADUATE DIPLOMA AND ADVANCED GRADUATE DIPLOMA

C727 / Pharma/Biotech Business Issues
F724 / Venture Capital
K725 / Business process Reengineering
K731 / Project Management
K735 / Managing the Implementation of Enterprise Systems
P715 / Entrepreneurship
P727 / Strategic Knowledge Management
P734 / Current Issues in the Management of Innovation and New Technology
P737 / Profitting from Intellectual Property
P741 / New Venture Creation

In addition to these permanent electives a number of other courses on MINT related themes are offered from time to time by the School of Business and they can be taken for elective credit towards these graduate diplomas. Please consult the M.B.A. calendar section of the DeGroote School web page for course descriptions of all of these courses. Not all of these elective courses are offered in all semesters but all are offered at least once in each academic year.

MASONRY: MATERIAL AND DESIGN

The Department of Civil Engineering offers a Diploma Program in Masonry: Material and Design. This diploma program provides in-depth coverage of properties of masonry materials and design of masonry components and complete buildings, including use of advanced analytical and design tools. Building science aspects of behaviour and design, as well as methods and case studies for investigation and retrofit of existing masonry structures, round out the opportunity to develop a broad expertise in masonry.

ADMISSION

Applicants must hold a baccalaureate degree in the field of Civil Engineering with an acceptable grade point average, similar to that for entry into an M.A.Sc. or M.Eng. degree program. Consideration will be given to work experience. In addition, applicants must be deemed to have satisfactory preparation, as a result of university education and work experience, to succeed in the program. The Department Chair, upon the recommendation of the departmental Graduate Admissions Committee, will make admission recommendations to the School of Graduate Studies.

REQUIREMENTS

The student will be granted a Graduate Diploma in "Masonry: Material and Design" upon the completion of two full courses within a three year period with a minimum passing grade of B- for each course. A minimum of one full course must be taken from the list of area courses with the remaining courses selected from the structural engineering, engineering mechanics or geotechnical engineering area.

The masonry courses cover both fundamental knowledge as well as emphasizing practical applications. Several of these courses are offered in non-traditional form, suited to participation by engineers in industry.

The courses must be selected from the following lists. Exceptions to these course requirements must be granted by special permission from the Faculty of Engineering Admissions and Study Committee acting on the recommendation of the Department Chair.

AREA COURSES

#720 / Behaviour and Design of Masonry Components / W. El-Dakhakhni
Introduction to masonry, including properties and manufacture of materials, behaviour of masonry assemblages, design of plain and reinforced walls, columns and beams, design to avoid moisture problems.

#722 / Design and Construction of Masonry Buildings / W. El-Dakhakhni
This course deals with the overall design of masonry buildings, including planning and selection of suitable layouts and consideration of construction requirements. Other topics: design of veneer walls, special requirements for ties and anchors, and integration of floor and wall systems.

#725 / Advanced Design and Analysis of Masonry / S.E. Chidiac
Apply computer-aided analysis including finite element methods, dynamic analysis, advanced design methods including earthquake design.

#731 / Building Science / Staff
Building envelope (roof and wall) requirements for air and vapour barriers and insulation, including new materials and new construction methods. Fire and smoke requirements for building design. Introduction to sound transmission.

#733 / Investigation and Retrofit of Existing Masonry Buildings / S.E. Chidiac
Investigation techniques, collection and interpretation of data, condition evaluation and definition of problems, design of remedial measures, construction planning and details.

ADDITIONAL CIVIL ENGINEERING COURSES

#702 / Rehabilitation of Structures / Staff
Evaluation of the load carrying capacity of existing structures. Identification of the deficiencies in design and deterioration of structures. Criteria for selection and design of the most suitable rehabilitation system. Design details of selected rehabilitation system.

***703 / Finite Element Method / D. Stolle**
Theory of finite element method; formulation of finite elements; applications to solid mechanics, field and plate bending problems; algorithms for transient and nonlinear problems; introduction to hybrid and mixed finite elements; development of a finite element code.

#715 / Structural Stability / K.S. Sivakumaran
Introduction to structural stability, stability of rigid bodies, methods of analysis: energy methods, approximate methods, dynamic analysis of stability, elastic and inelastic stability of axially loaded columns, lateral bracing design, frame stability, lateral-torsional buckling of beams, stability of thin-walled open cross-sections, axial torsional buckling of columns and beams, stability of plates, local and post-buckling strength of plates, stiffened plates, application of plate girders and box-girders, introduction to buckling of shells and arches.

#716 / Structural Dynamics / M. Tait
Formulation of equations of motion; one degree-of-freedom systems: undamped, damped, free vibration, forced vibration, nonlinear systems; numerical techniques: time domain, frequency domain.

#717 / Dynamics of Structural Systems / Staff
Multi-degree-of-freedom systems: modal analysis, characteristics of Eigenvalue problems, applications; continuous systems; dynamic loads: earthquake and wind loading, vibrating machines, moving loads.

#723 / Advanced Steel Design / Staff
Treatment of steel building frames: concentrically and eccentrically braced systems, shear links, energy dissipation concepts for cyclic-type loading. Low cycle fatigue, incremental collapse and shakedown. Applications to include plate girders, box girders. Problems in welded construction-weld defects, distortion, shrinkage, residual stresses, etc. Connection details including beam-column, HSS trusses. Stud girder systems and aspects of fire protection.

***724 / Tall Building Analysis and Design / Staff**
The course covers the structural engineering aspect of tall building analysis and design. The main emphasis is to discuss the behaviour of different frame systems under lateral loadings. The approach is to use approximate methods to illustrate the behaviour, and use computer modeling to verify the accuracy of the approximate methods.

***730 / Earthquake Engineering / J.C. Wilson**
Engineering seismology; seismic design principles applied to building structures, and special facilities, code provisions for earthquakes; seismic design of concrete structures, special provisions; elastic and inelastic static and dynamic modeling.

***732 / Concrete Structures - Materials, Maintenance and Repair / S.E. Chidiac**
Portland Cement and its constituent phases; role of water in hydrated cement systems, hydration parameters, limiting hydration, state of water, porosity, engineering properties; structural models for C-S-H; hydration mechanisms: through solution, solid state; pore structure determination; engineering properties; role of admixtures and supplementary cementing materials; analysis of fresh and hardened concrete; durability; transport properties, relationships between transport properties and durability; in-situ evaluation of concrete structures; materials and techniques for repair; service life/durability design of concrete structures.

NUCLEAR TECHNOLOGY

The Department of Engineering Physics offers a Diploma Program in Nuclear Technology. The fundamentals of nuclear reactor physics, reactor thermalhydraulics, nuclear instrumentation, nuclear environmental quality, fusion engineering and radiation damage are important for nuclear power plant design, operation and safety, as well as in the technologies of many industries which use nuclear techniques. This diploma program provides an overview of the fundamentals in these allied areas and permits an in-depth study of topics to support the student's interest in a particular industrial technology.

ADMISSION

Applicants must hold a baccalaureate degree in the fields of engineering, science or mathematics with an acceptable grade point average, similar to that for entry into a M.Eng. degree program. Consideration will be given to work experience. In addition, applicants must be deemed to have satisfactory preparation, as a result of university education and work experience, to succeed in the program. The Department Chair, upon the recommendation of the departmental Graduate Admissions Committee, will make admission recommendations to the School of Graduate Studies.

REQUIREMENTS

The student will be granted a Graduate Diploma in "Nuclear Technology" upon the completion of four half courses within a three year period with a minimum passing grade of B- for each course. The courses must be selected from the following list and at least two of the courses must be at the 700 level. With the approval of the Department Chair, one of the four half courses may be Engineering Physics 704, Selected Topics in Engineering Physics. Exceptions to these course requirements must be granted by special permission from the Faculty of Engineering Admissions and Study Committee acting on the recommendation of the Department Chair.

Courses

***6D03 / Nuclear Reactor Analysis / Staff**
Introduction to nuclear energy; nuclear physics and chain reactions; reactor statics and kinetics; multigroup analysis, core thermalhydraulics; reactor design.

***6L04 / Industrial Monitoring and Detection Techniques**
Single and two-phase flow diagnostics and monitoring techniques for industrial and power plant operations; radiation monitoring; pollutant monitoring and analysis; nuclear instrumentation for industrial processes.

***6NE3 / Advanced Nuclear Engneering / J.C. Luxat**
Fission power generation and distribution in a nuclear reactor core. Design and performance of natural uranium, enriched uranium and mixed oxide nuclear fuels. Energy conversion, heat transfer and heat transport in a nuclear reactor core. Thermal margins and safety limits of nuclear fuel and reactor components. Irradiation, corrosion and aging of reactor structural materials. Structural integrity of nuclear components including properties of nuclear materials, stress in piping systems, material creep and fatigue behavior.

***6P03 / Nuclear Power Plant Systems and Operation / Staff**
Systems and overall unit operations relevant to nuclear power plants; includes all major reactor and process systems; nuclear power plant simulator; self-study using interactive CD-ROM.

***710 / Nuclear Reactor Dynamics and Control / J.C. Luxat**
Reactor kinetics: point kinetics model; modal model for space-time kinetics; reactivity feedback mechanisms; reactor transfer functions; the inhour equation; reactor stability; Xenon stability; bulk and spatial power control; load following; control systems for CANDU and LWR reactors.

***711 / Fusion and Plasma Engineering**
Fusion reactor blanket design: plasma physics and chemistry; primary heat transport system: electromagnetic hydrodynamics; fusion reactor first wall; neutronics.

McMaster University

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http://www.mcmaster.ca/civil

MEMORANDUM

To: Faculty of Engineering JCPC

From: Dr. A. Ghani Razaqpur, Department Chair
Department of Civil Engineering

Date: February 9, 2009

RE: **Cancellation of Rehabilitation of Civil Engineering Structures Diploma Program**

The Department of Civil Engineering has decided to cancel the Rehabilitation of Civil Engineering Structures Diploma Program beginning with the 2009-2010 academic year due to a consistent lack of enrolment in the program since its inception. A total of four students have registered for this programme; two graduated in 2006, one withdrew in 2007, and one student is still registered (although he requested to withdraw in 2007, was sent the required forms, and never returned them).

It does not seem reasonable to continue to offer a programme that has attracted such little interest since its inception in the 2005/2006 academic year, and the Department of Civil Engineering does not have the resources to offer the required number of courses to so few students. Therefore, we are requesting the removal of the Rehabilitation of Civil Engineering Structures Diploma Program from the 2009-2010 School of Graduate Studies Calendar.

Should you have any questions, please do not hesitate to contact me.

MECHANICAL ENGINEERING COURSES

***706 / Advanced Heat Transfer I / R.L. Judd**
Steady and transient conduction stressing formulation and approximate solution techniques. Convection heat transfer including compressible and incompressible flow. Radiation heat transfer including gray body radiation and radiation from gases and vapours.

***707 / Advanced Heat Transfer II / S. Shankar**
Solution of boundary value problems in conduction heat transfer; mass transfer analogy to heat transfer; ablative cooling; theory of solidification; boiling heat transfer.

***710 / Machine Tool Analysis / M.A. Elbestawi**
Definitions and test of accuracy. Metrology using laser interferometer. Thermal deformations. Automation, numerical control: command generation, digital positional servos. Dynamics of machine tool structures, stability against chatter. Selection, specification, utilization, maintenance.

***728 / Manufacturing Processes I / P. Koshy**
Fundamentals of metal cutting: cutting process, cutting forces and temperatures, tool wear, machinability of materials, machined surface quality and integrity, optimization of cutting conditions. Applications to single edge and multiple edge operations and grinding.

PRIMARY HEALTH CARE NURSE PRACTITIONER

The admission requirements for the Graduate Diploma as a Primary Health Care Nurse Practitioner (PHCNP) are a completed Master's degree with a minimum B+ average and at least two years in clinical practice out of the past five years. Those with a completed Master's degree in Nursing may enter the PHCNP Consortium course phase and be granted a Graduate Diploma upon completion of the seven NP courses. Since the PHCNP courses are offered every year, students can expect to complete the courses within 12 months of full-time study. Part-time students have two years to complete the PHCNP courses. Once the PHCNP courses have been completed successfully, students are eligible to write their RN (Extended Class) exams. For more information about the PHCNP courses, see http://np-education.ca.

Enquiries: 905-525-9140 Ext. 22099
Fax: 905-546-1129
Email: gcira@np-education.ca
Website: http://www.fhs.mcmaster.ca/grad

OR

Eric Staples (NP Faculty Liaison)
905-525-9140 Ext. 22099
Email: estap@np-education.ca

REHABILITATION OF CIVIL ENGINEERING STRUCTURES

The Department of Civil Engineering offers a Diploma Program in Rehabilitation of Civil Engineering Structures.

Rehabilitation of civil engineering structures is an important and growing sector of the construction industry. This diploma will provide a fundamental basis and practical case studies for engineers involved in repair, restoration and rehabilitation of civil engineering structures.

ADMISSION

Applicants must hold a baccalaureate degree in the field of Civil Engineering with an acceptable grade point average, similar to that for entry into an M.A.Sc. or M.Eng. degree program. Consideration will be given to work experience. In addition, applicants must be deemed to have satisfactory preparation, as a result of university education and work experience, to succeed in the program. The Department Chair, upon the recommendation of the departmental Graduate Admissions Committee, will make admission recommendations to the School of Graduate Studies.

REQUIREMENTS

The student will be granted a Graduate Diploma in "Rehabilitation of Civil Engineering Structures" upon the completion of two full courses within a three year period with a minimum passing grade of B- for each course. A minimum of one full course must be taken from the list of area courses with the remaining courses selected from the structural engineering, engineering mechanics or geotechnical engineering area.

The courses must be selected from the following lists. Exceptions to these course requirements must be granted by special permission from the Faculty of Engineering Admissions and Study Committee acting on the recommendation of the Department Chair.

AREA COURSES

#702 / Rehabilitation of Structures / Staff
Evaluation of the load carrying capacity of existing structures. Identification of the deficiencies in design and deterioration of structures. Criteria for selection and design of the most suitable rehabilitation system. Design details of selected rehabilitation system.

***730 / Earthquake Engineering / J.C. Wilson**
Engineering seismology; seismic design principles applied to building structures, and special facilities, code provisions for earthquakes; seismic design of concrete structures, special provisions; elastic and inelastic static and dynamic modeling.

#731 / Building Science / Staff
Building envelope (roof and wall) requirements for air and vapour barriers and insulation, including new materials and new construction methods. Fire and smoke requirements for building design. Introduction to sound transmission.

***732 / Concrete Structures - Materials, Maintenance and Repair / S.E. Chidiac**
Portland Cement and its constituent phases; role of water in hydrated cement systems, hydration parameters, limiting hydration, state of water, porosity, engineering properties; structural models for C-S-H; hydration mechanisms: through solution, solid state; pore structure determination; engineering properties; role of admixtures and supplementary cementing materials; analysis of fresh and hardened concrete; durability; transport properties, relationships between transport properties and durability; in-situ evaluation of concrete structures; materials and techniques for repair; service life/durability design of concrete structures.

#733 / Investigation and Retrofit of Existing Masonry Buildings / S.E. Chidiac
Investigation techniques, collection and interpretation of data, condition evaluation and definition of problems, design of remedial measures, construction planning and details.

ADDITIONAL CIVIL ENGINEERING COURSES

***703 / Finite Element Method / D.F. Stolle**
Theory of finite element method; formulation of finite elements; applications to solid mechanics, field and plate bending problems; algorithms for transient and nonlinear problems; introduction to hybrid and mixed finite elements; development of a finite element code.

#715 / Structural Stability / Staff
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Formulation of equations of motion; one degree-of-freedom systems: undamped, damped, free vibration, forced vibration, nonlinear systems; numerical techniques: time domain, frequency domain.

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Multi-degree-of-freedom systems: modal analysis, characteristics of Eigenvalue problems, applications; continuous systems; dynamic loads: earthquake and wind loading, vibrating machines, moving loads.

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Introduction to masonry including properties and manufacture of materials, behaviour of masonry assemblages, design of plain and reinforced walls, columns and beams, design to avoid moisture problems.

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This course deals with the overall design of masonry buildings including planning and selection of suitable layouts and consideration of construction requirements. Other topics: design of veneer walls, special requirements for ties and anchors, and integration of floor and wall systems.

***724 / Tall Building Analysis and Design / Staff**
The course covers the structural engineering aspect of tall building analysis and design. The main emphasis is to discuss the behaviour of different frame systems under lateral loadings. The approach is to use approximate methods to illustrate the behaviour, and use computer modeling to verify the accuracy of the approximate methods.

#725 / Advanced Design and Analysis of Masonry / S.E. Chidiac
Apply computer-aided analysis including finite element methods, dynamic analysis, advanced design methods including earthquake design.

SPATIAL ANALYSIS AND GIS

The School of Geography and Earth Sciences and the Centre for Spatial Analysis offer a Graduate Diploma in Spatial Analysis and GIS. The Graduate Diploma is designed to meet the needs of those with a degree in Geography, Earth & Environmental Sciences or related discipline who wish to complement their background with skills in GIS technology, spatial interaction modeling, locational analysis and spatial statistics. Emphasis is placed on critical thinking, hands-on problem-solving and communication skills.

This program is geared to suitable graduates with an interest in advanced studies in Spatial Analysis, but who do not wish to complete a Master's degree.

Enquiries: 905 525-9140 Ext. 22542
Fax: 905 546-0463
Email: maynard@mcmaster.ca
Website: http://www.science.mcmaster.ca/geo/

ADMISSION

Acceptance to this program follows the established procedures and standards for admission to M.A. or M.Sc. degree graduate programs at McMaster University.

Applicants must hold a B.Sc. or B.A. in Geography, Earth & Environmental Sciences or related discipline and must have completed a course in GIS, spatial statistics or a combination of the two. Although the requirements are similar to those for a M.A. or M.Sc. candidate, additional consideration will be given to work experience. The general guidelines are outlined in sections 2.1.1 and 2.1.4 of the Graduate Calendar.

COURSE REQUIREMENTS

A student will be granted a Graduate Diploma in Spatial Analysis upon the completion of four half courses with a minimum passing grade of B- within a three-year period. The courses must be from the following list, and students must take at least one at the 600-level and at least two at the 700-level. Exceptions to these course requirements must be granted by special permission of the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee.

Graduate diploma students with at least a B+ average in their graduate course work may be eligible to transfer to a part-time Master's degree in Geography subject to the recommendation of the department and Faculty Graduate Admissions and Study Committee. See section 2.1.4 in the Graduate Calendar.

COURSES

***6D03 / Analysis of Transportation Systems / H.A. Paez**
(Same as Civil Engineering *6H03)
An introduction to the use of models in transportation planning. Topics include data issues, the four-stage approach to modeling transportation systems, discrete choice models and contextual factors such as land use.

***6I03 / Advanced GIS / Staff**
Advanced methods in GIS using ARC/INFO. Topics will include raster based analysis, working with linear features, surface modeling and AML programming.

***6S03 / Advanced Topics in Spatial Statistics / P.S. Kanaroglou**
This course explores concepts and methods in visualisation, exploration and modeling of point pattern, spatially continuous data and area data.

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Electrical and Computer Engineering
NAME OF PROGRAM	M.Eng., Electrical and Computer Engineering

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. (X)**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:** M.Eng. students will have the option of completing the degree requirements without doing a project by doing another course.
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

M.Eng. Degree:
A candidate is required to complete successfully a program of six graduate half courses (or equivalent), of which at least four must be 700-level and up to two 600-level courses approved by the department; these courses may be taken on a part-time basis. At the conclusion of the course program, the candidate is required to submit a report on an approved project which must demonstrate ability to carry out independent study and reach a satisfactory conclusion.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

M.Eng. Degree:
A candidate is required to complete successfully a program of seven graduate half courses (or equivalent), of which at least five must be 700-level and up to two 600-level courses approved by the department; these courses may be taken on a part-time basis. Two of these 600-level courses can be taken in the final undergraduate year at McMaster for graduate credit.

RATIONALE FOR THE RECOMMENDED CHANGE:

The proposed change gives an option for students to complete the degree without having to find a supervisor for the project. They can complete the requirements by doing an extra course.

The change to allow two 600-level courses in their final year by McMaster students will avoid having to take the same courses again as part of M.Eng. This double-counting is already part of a number of other M.Eng. programs including M.Eng. in Electrical and Biomedical Engineering and M.Eng. in Manufacturing.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

Sept. 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

M.Eng. Degree:
A candidate is required to complete successfully a program of seven graduate half courses (or equivalent), of which at least five must be 700-level and up to two 600-level courses approved by the department; these courses may be taken on a part-time basis. Two of these 600-level courses can be taken in the final undergraduate year at McMaster for graduate credit.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Kerri Hastings Email: hastings@mcmaster.ca Extension: 24826 Date: February 20, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

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3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Electrical and Computer Engineering
NAME OF PROGRAM	M. Eng, Electrical and Computer Engineering

PROGRAM DEGREE	**Ph.D. (X)**	**M.A. ( )**	**M.A.Sc. (X)**	**M.B.A. ( )**	**M. Eng. (X)**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	X	**EXPLAIN:** Eliminating the requirement for M.Eng. students to register for the seminar course ECE 790
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

General Requirements:
Candidates for the degrees of M.A.Sc., M.Eng. and Ph.D. must present a seminar on a topic approved by the Department. The thesis or report submitted by the candidate must be defended orally at the conclusion of the study. All graduate students are required to register for ECE 790: Graduate Seminars in Electrical and Computer Engineering. Ph.D., M.A.Sc. and M.Eng. students, with the exception of those registered in the combined B.Eng./M.Eng. Biomedical Engineering Program, must present their research papers on the departmental seminar days at least once during the course of their programs. Grading will be restricted to Pass/Fail.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

General Requirements:
Candidates for the degrees of M.A.Sc. and Ph.D. must present a seminar on a topic approved by the Department. The thesis or report submitted by the candidate must be defended orally at the conclusion of the study. All M.A.Sc. and Ph.D. graduate students are required to register for ECE 790: Graduate Seminars in Electrical and Computer Engineering. M.Eng. students registering for ECE 701, must register for ECE 790 as well. Ph.D. and M.A.Sc. students must present their research papers on the departmental seminar days at least once during the course of their programs. Grading will be restricted to Pass/Fail.

RATIONALE FOR THE RECOMMENDED CHANGE:

M.Eng. students without the newly proposed project course ECE 701 are not required (and have nothing) to present. Those taking the new project course will register for ECE790 as part of the requirements of ECE 701.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

Sept. 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

Candidates for the degrees of M.A.Sc. and Ph.D. must present a seminar on a topic approved by the Department. The thesis or report submitted by the candidate must be defended orally at the conclusion of the study. All M.A.Sc. and Ph.D. graduate students are required to register for ECE 790: Graduate Seminars in Electrical and Computer Engineering. M.Eng. students registering for ECE 701, with the exception of those registered in the combined B.Eng/M.Eng. Biomedical Engineering Program, must register for ECE 790 as well. Ph.D. and M.A.Sc. students must present their research papers on the departmental seminar days at least once during the course of their programs. Grading will be restricted to Pass/Fail.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Kerri Hastings Email: hastings@mcmaster.ca Extension: 24826 Date: March 20, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

Walter G. Booth School of EngineeringPractice

The Walter G. Booth School of Engineering Practice offers Master's degree programs:

- Master of Engineering Design degree in the following fields of study:
  - Process Systems Design and Operation
  - Product Design
  - Sustainable Infrastructure
- Master of Engineering Entrepreneurship and Innovation
- Master of Engineering and Public Policy.
- Master of Engineering in Manufacturing

Enquiries: 905 525-9140 Ext. 26566
Email: msep@mcmaster.ca
Fax: 905 528-7901
Website: http://msep.mcmaster.ca/

Staff / Fall 2009

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K.S. (Siva) Sivakumaran (Civil Engineering)
Dieter Stolle (Civil Engineering)
Michael Tait (Civil Engineering)

ADMISSION

Candidates will normally have completed an undergraduate degree in engineering or applied sciences. Applicants should have an undergraduate degree, with at least a B- average (equivalent to a McMaster 7.0 GPA out of 12). Each applicant will also be interviewed as part of the admission process. Professional work experience will be highly desirable.

Bachelor of Technology students are also required to take the Graduate Record Exam.

- Verbal >550
- Quantitative >550
- Verbal and Quantitative >1200
- Analytical Writing >3.5

Candidates may be enrolled on a full- or part-time basis. Students are admitted for September or January, except for the Master of Engineering Entrepreneurship and Innovation and Master of Engineering Design programs which only admit in September.

Application for admission to the Master of Engineering in Manufacturing Engineering program may be made through the appropriate department of the Faculty of Engineering depending on the student's area of technical interest or directly through the Walter G. Booth School of Engineering Practice. A McMaster 8.0 GPA out of 12 or B average is required for application to this program.

The delivery of the programs relies heavily on the synergy created between members of student teams, and successful operation of the program requires that each cohort have an appropriate blend of skills and experience. Therefore each applicant will be interviewed. A strong performance in the interview is a critical requirement for admission.

Prospective applicants who did not attain the required standing in their undergraduate degree, but who have at least four (4) years of relevant work experience, should discuss their situation with the appropriate program director. If the experience is deemed sufficient, the director may then recommend an interview. Evidence of ability to do graduate work will still be required. (See Sections 2.1.1 Admission Requirements for Master's Degree and 2.1.3 Admission of Students with Related Work Experience or Course Work Beyond the Bachelor's Degree in the Graduate Calendar.)

ENGINEERING DESIGN

Innovative new designs and the ability to improve performance of existing systems have become a basis for a competitive advantage in the markets. Performance, environmental sustainability, safety, and efficiency are integral parts of the requirements in the design of industrial products, large scale systems, or software solutions. Within this complex set of constraints, successful engineers and engineering managers must be able to lead transformation of an idea to a complete design by working in interdisciplinary teams. The Master of Engineering Design program provides its participants with technical expertise and leadership capabilities required to invent novel solutions and to lead technically oriented organizations. Strong emphasis on solving engineering problems from industrial practice is accomplished via industrial motivated and supported projects.

The M.Eng. Design program emphasizes development of competencies in:

- Leadership, collaboration, and management skills to lead diverse teams.
- Product design and innovations methodologies applicable to product and process design.
- Engineering disciplines leading to breakthrough design and operation of systems in:
  - Process (refining, chemicals, specialty chemicals, pharmaceuticals, power, oil and gas production, and similar)
  - Sustainable infrastructure (renewable energy systems, environmental systems, sustainable products and systems design)
  - Manufacturing of industrial and consumer products (e.g., automotive, electronics, or household items).

Curriculum

The curriculum has five main components:
1. Leadership and Management Capabilities courses that will enable M.Eng. Design graduates to deal with complex situations in the work environment, to lead teams, and to manage projects.
2. Interdisciplinary engineering courses in product design, project management, and risk management
3. Core technical courses that provide expert knowledge in targeted technical areas.
4. Elective courses that allow students to acquire broader expertise in the technical areas which are at the centre of their studies.
5. An industrially oriented project that solves complex problems requiring synthesis of knowledge from several disciplines and presenting the students with an opportunity to develop the solution in an industrial environment.

Process Systems Design and Operation

Master of Engineering Design program in the field of Process Systems Design and Operation provides advanced competencies for engineers and supervisors typically working in:

- Process Design
- Advanced Process Control
- Plant Operations
- Process Industry Oriented R&D
- Control Systems and Software

The following course requirements need to be fulfilled by the participants:
1. Leadership and Management
Participants are required to take the following:
***734 /** Leadership and Management Development

2. Interdisciplinary Engineering
Participants are required to take at least one of the following:

- **#730 /** Reliability & Risk Management and
  #733 / Project Management
- ***761 /** Product Design and Development

3. Core Technical Courses
Students with a background or interest in *Process Design, Process Control, or Plant Operations Engineers* must take two half courses from the following list:
***751 /** Process Design and Control for Operability
***6C03 / Statistics for Engineers**
***754 /** Process Design and Integration for Minimal Environmental Impact

Students with a background or interest in *Control Systems Engineers* must take two half courses from the following list:
ECE*726 / Local Area Networks in Manufacturing Environment
CAS*723 / Distributed Real-Time Systems
CAS*6CD3 / Distributed Computer Systems
CAS*6EB3 / Database Management System Design
ECE *6DL4 / Real-time and Distributed Computing Systems
CAS*704 / Embedded, Real-Time Software Systems
CAS*703 / Software Design

4. Elective Technical Courses
Participants are required to take two half courses which should be selected from graduate courses offered by departments within the Faculty of Engineering. Students are required to have their elective course selection approved by the Director of the Program.

Product Design

Innovation and creative product design are emphasized through problem solving via interdisciplinary teams in a design studio environment, while learning about the use of materials in product design and design for manufacturing are led by the faculty that are also members of McMaster's advanced centers (including Centre for Automotive Materials, Manufacturing Research Institute, Institute for Polymer Production Technology and the Centre for Advanced Polymer Processing and Design). The interdisciplinary nature of the program enables its participants to work on variety of designs, such as industrial machinery, consumer products, automotive, etc.

The following course requirements need to be fulfilled by the participants:
1. Leadership and Management
Participants are required to take the following:
***734 /** Leadership and Management Development

2. Core Technical Courses
Participants are required to take two design half courses:
***760 /** Design and Innovation
***761 /** Product Design and Development

3. Elective Technical Courses
Participants are required to take three half courses which should be selected from graduate courses offered by departments within the Faculty of Engineering. Students are required to have their elective course selection approved by the Director of the Program.

Sustainable Infrastructure

The program provides advanced competencies for engineers and supervisors typically working in:

- Construction Project Management
- Design of Civil Infrastructures
- Materials and Quality Control
- Municipal Engineering

The following course requirements need to be fulfilled by the participants:
1. Leadership and Management
Participants are required to take:
***734 /** Leadership and Management Development
2. Interdisciplinary Engineering
Participants are required to take at least one of the following courses:

- **#730 /** Reliability and Risk Management and

#733 / Project Management

- ***761 /** Product Design and Development

3. Core technical Courses

Participants are required to take four half technical courses which should be selected from graduate courses offered by departments within the Faculty of Engineering. Suggested courses in sustainable energy systems and manufacturing are:

- **SEP*732** / Sustainable Energy – Technology and Options Selection
- **MATLS*6I03** / Sustainable Manufacturing Processes
- **SEP*705** / Green Engineering, Sustainability and Public Policy

Students are required to have their elective course selection approved by the Director of the program.

ENGINEERING ENTREPRENEURSHIP AND INNOVATION

The Master of Engineering Entrepreneurship and Innovation program is a fast paced program aimed at highly motivated students. The program will accept full- or part-time students. The full program is expected to take up to 18 months full-time study or three years part-time. A compressed program of 12 months duration may be possible.

A candidate is required to complete successfully two one-term advanced engineering courses and the five compulsory Engineering Entrepreneurship and Innovation module courses. A faculty advisor will assist the student in selecting relevant engineering courses. Students will normally be required to complete two graduate level (700-level) engineering courses in fulfillment of the requirements for Advanced Engineering Studies. Advanced engineering studies are an integral component of the program and are offered by various departments in the Faculty of Engineering and beyond. The objective is to acquire leading-edge Engineering skills and apply them to the enterprise project.

Innovation and Entrepreneurial Skills Development

Five compulsory enterprise modules will focus on providing the Master's degree candidate basic skills to select an idea with good potential, manage the innovation process, then create and manage the business outcome. The skills will broadly cover all the business life cycle from start, growth and sustainability. The modules will develop an understanding of both the innovation and the entrepreneurial processes through lectures, workshops and hands-on work will enable the student to fully exploit the potential of the engineering enterprise project. Each module is considered the equivalent of a half-course as defined by the School of Graduate Studies, but will contain elements of lecture, group work, presentation and other activities as defined in the course outline. The module courses will be delivered in an intensive format; and it is expected that students will take the module courses in sequenced numerical order. The module courses are:

***720 / Entrepreneurial Processes and Skills (Module 1) / R. Loutfy**
***721 / Breakthrough Technology Venture Development (Module 2) / D. Potter**
***722 / Positioning and Shaping an Enterprise (Module 3) / Staff**
***723 / New Venture Business Strategy (Module 4) / R. Loutfy**
***724 / Taking a New Venture to Market (Module 5) / S. Treiber**

Engineering Enterprise Project

The Engineering Enterprise Project will run throughout the entire study period and will result in both a business and a technical plan for an engineering prototype product (ideally with an actual prototype device or software produced) with an identified customer base and a plan outlining the way to commercialization. The project will bring together the two complementary streams of activities, one technical and the other entrepreneurial, to bring an idea to the proof of concept phase. The Entrepreneurial course stream, which will run coincidentally with the advanced engineering studies, will guide the technological work performed in the research laboratory so that the concept becomes, by the end of the degree, the nucleus of a business proposition. The Engineering Enterprise Project will have three phases, which will end with project gate assessments to determine the project's readiness to proceed to the next phase:

Phase 1 - Project Preparation: Market research to arrive at a proposed product or service with clear value proposition; define the market for the intended product or service revealing competitive threat, opportunities, and margins and volumes projections; draw up development plans for the product or service indicating the required resources and estimated investment cost; seek the resources within the university and without; build a team of support that might include a partner.

Phase 2 - Technical Research and the Development of the Engineering Prototype: Develop an engineering research plan, identifying key issues and opportunities (with the assistance of academic technical and business supervisors); conduct technical research and development; implement the engineering research plan within the research group in the host-engineering department; build a development network within the engineering research community; ready the technology for transfer to market; conduct initial market engagement to get customer feedback and reactions.

Phase 3 - Technology Transfer to Market: Apply for IP protection; develop a path-to-market strategy; develop a business case; present to funding institutions and explore business arrangements; plan for business start-up. Each phase has two equally important components, one technical and the other business:

Phase I: Concept initiation proposal; Technology development plan presentation and documentation
Phase II: Technical Proof-of-concept; Draft financial plan presentation and documentation
Phase III: Business Strategy and Go-to-market plan or a Venture feasibility presentation and documentation

The Phase III evaluation will be a defense of your project in an oral examination to your board (technical supervisor, enterprise advisor, business advisor and your business mentor). Candidates are required to complete and pass each phase in order to graduate.

Enterprise Development Lab
The MEEI program is constructed in such a way as to allow students from different engineering disciplines to work in a common learning environment – the Enterprise Development Lab. The Lab is equipped with state-of-the-art communications equipment designed to facilitate both internal and external collaboration with faculty, colleagues, mentors, technical supervisors and private sector representatives, if applicable.

ENGINEERING AND PUBLIC POLICY

In today's complex world engineers and scientists are called upon to design technical systems that provide goods and services to society in a safe, efficient and environmentally sound manner. Engineers and scientists serve as key advisors to decision makers in both the public and private sectors. Therefore, engineers and scientists need more than extensive technical skills; they need an enhanced understanding of public policy and the role of engineering and science in sustainable technological, social and ecological systems.

Within the Walter G. Booth School of Engineering Practice, a professional Master's degree in Engineering and Public Policy (MEPP) is offered. Interest in the MEPP program will come from engineers and applied scientists from a wide cross-section of organizations who want graduate training that will go substantially beyond a conventional technical Master's to develop them as future professionals in the public policy area. The ideal candidate will have an undergraduate degree in engineering or applied science and 3-5 years of professional work experience.

The Walter G. Booth School of Engineering Practice has the following program objectives for the Master's degree in Engineering and Public Policy (MEPP):

- to provide a high quality educational experience to graduate engineers in the area of engineering and public policy;
- to foster applied research in the area of engineering and public policy through the successful completion and dissemination of a research paper;
- to develop viable, working linkages between engineering and fields of study within social sciences and the humanities (public policy, economics, society);
- to nurture a diverse group of students who will be active participants within the broader range of activities in the Walter G. Booth School of Engineering Practice;
- to produce graduates who will provide inspired leadership in the engineering and public policy areas within the public, private and NGO sectors.

Candidates may be enrolled on a full- or part-time basis. Full-time students will complete the degree in twelve consecutive months of study, beginning in September or January. Part-time students will normally be expected to complete the program in two years.

Curriculum

The curriculum has four main components:
1. Core courses that provide the content and methodological skills necessary for understanding and analyzing engineering and public policy problems;
2. Focus elective courses that allow students to deepen their knowledge of a range of engineering and public policy applications;
3. The completion of a substantive research paper on a problem at the interface of engineering and public policy;
4. Attendance and participation at an intensive workshop/seminar week on engineering and public policy.

Research Project - Inquiry in Engineering and Public Policy

Student selects a research topic at the interface of engineering and public policy which is of interest to them and carries out inquiry-driven research; completes a formal research paper and condenses results for release to the media.

Candidates for the MEPP degree will follow a program consisting of the following:

1. Required Courses

Four half-courses:
***701** / Theory and Practice of Policy Analysis: Frameworks and Models
***702** / Systems Engineering and Public Policy
***703** / Applied Microeconomics and Environmental Economics
***709 /** Emerging Issues, Technology and Public Policy

2. Focus Elective Courses

Four half-courses are required for electives. Students may select from the following options:
***6I03 /** Sustainable Manufacturing Processes
***705** / Green Engineering, Sustainability and Public Policy
***706** / Energy and Public Policy
***707** / Communication Technology and Public Policy
***708 /** Special topics in Engineering and Public Policy
***784 /** Statistical Analysis for Public Policy
***785 /** Public Sector Management
***786 /** Organizational Theory and the Public Sector
***790 /** Economic Policy in Market Economics
***792 /** Public Choice

- Up to two graduate engineering half courses from departments within the Faculty of Engineering
- Other courses in other departments and Faculties with approval of the Director of the program.

Courses

Courses identified with an asterisk (*) are half courses. Courses identified with a pound (#) sign are quarter courses.

***6C03 / Statistics for Engineers / Staff**
***(Same as Chemical Engineering *6C03*)**
Linear regression analysis in matrix form, non-linear regression, multiresponse estimation, design of experiments including factorial and optimal designs. Multivariate statistics. Special emphasis on methods appropriate to engineering problems.

***6I03 / Sustainable Manufacturing Processes / G. Irons**
(Same as Materials Science *6I03)
Sustainable development, materials cycles, methods for measuring environmental impact, life cycle analysis, waste treatment and recycling technologies.

***701 / Theory and Practice of Policy Analysis: Frameworks and Models / Staff**
Government structure and mandates for municipal, provincial and federal levels; procedures for legislation and policy setting; process of understanding societal values and preferences; establishment of policy goals and objectives; models and frameworks for the evaluation and analysis of public policy; application of frameworks and models to engineering and public policy problems.

***702 / Systems Engineering and Public Policy / B. Baetz**
Application of linear programming, integer programming and dynamic programming to public policy applications; application of simulation modeling to evaluate scenarios; application of decision analysis approaches and software for micro- and macro-policy analysis problems; coupling of GIS-based

approaches with conventional systems engineering tools; project planning and project management; soft systems techniques.

***703 / Applied Microeconomics and Environmental Economics**
Marginal benefit/cost analysis; willingness to pay and indifference curves; ecological economics; allocation of environmental services; estimation of externalities; measurement of environmental benefits; taxes, trading permits and other instruments; application of approaches to infrastructure renewal and environmental management problems.

***705 / Green Engineering, Sustainability and Public Policy**
Green engineering theory and guiding principles; sustainability at the regional and neighbourhood levels; transportation and land-use interactions; new urbanism design; transit-oriented development; bicycle-friendly planning and design; building design to minimize energy, water and material resources; green manufacturing and product design; sustainability indicators.

***706 / Energy and Public Policy / N. Markettos**
Energy policy; energy planning and forecasting; energy conservation and demand side management; case studies in current topics: utility privatization, nuclear energy generation, air quality issues; renewable energy technologies.

***707 / Communication Technology and Public Policy/ V. Vinodrai**
International trade and regulation; social issues relating to communication policy; research policy and funding; industrial/economic policy; relevant legislation; innovations in communication technology.

***708 / Special Topics in Engineering and Public Policy / G. Krantzberg**
Studies selected from specialized areas of research or representing special areas of expertise in areas of sustainability with regard to resource management, transportation, energy, and related fields.

***709 / Emerging Issues, Technology and Public Policy / G. Krantzberg**
Environmental threats that emerge fro engineering innovationwill be examined from the perspective of public policy development. Institutional effectiveness and policy implications for new programs will address greater interoperability of the institutional framework in various geographic regions. The objective of this course is to engage students in seminars, discussion and debate on contemporary ecology issues for which technology and policy can be integrated to generate sustainable solutions.

***720 / Entrepreneurial Processes and Skills (Module 1) / R. Loutfy**
This module course will develop an understanding of the fundamentals of sustainable businesses. Students will develop an awareness of and skills in innovation and entrepreneurial behaviour. Emphasis will be placed on becoming a more effective team player, becoming more aware of one's own learning style and entrepreneurial orientation, and understanding the process of business idea generation, development and evaluation.

***721 / Breakthrough Technology Venture Development (Module 2) / D. Potter**
This course will introduce students to the concepts of new venture creation, and will provide an understanding of the responsible use of capital, basic capability in the process and techniques of market research, and appreciation of intellectual property value and protection issues. Learning outcomes will include understanding the process of business planning and valuation and understanding the main types of risk that affect the nascent entrepreneurial venture.

***722 / Positioning and Shaping an Enterprise (Module 3) / Staff**
Learning outcomes of this module course will include an understanding of the role of technology-based business in the economy; understanding the financial dimension of the venture; understanding the nature of capital investment and role of banks and VC industry; understanding business and managerial accounting; appreciating operational and resource issues; understanding project management and how the innovation process may be managed; understanding how manufacturing units may be set up and managed; and developing the ability to formulate an exit strategy.

***723 / New Venture Business Strategy (Module 4) / R. Loutfy**
The focus of this course is understanding the new venture value proposition and how to market it, including understanding market dynamics and competitive forces facing new venture and strategies to create customer value, understanding the role of IT infrastructure in driving the enterprise productivity, and understanding e-business as a channel.

***724 / Taking a New Venture to Market (Module 5) / S. Treiber**
The final module course in the program will address the skills and knowledge needed to launch and sustain the new venture. The module will provide an understanding of how to manage the new venture strategically for growth and sustainability; how to put together a high performance team; the role of value-chain management and timing; and the critical factors that contribute to business survival and longevity.

***725 / Practical Project Management for Today's Business Environment / Staff**
This course covers the basics of project management techniques and tools, as well as advanced, adaptive, and emerging approaches to improve project success. Students will learn how to apply effective project management to a variety of common business situations, including starting a company, bringing a product to market, doing primary research and development, constructing a physical facility, and developing a major piece of software, among others. Case studies, guest speakers, and hands-on exercises will be used to explore real-life examples of project management successes and failures.

#730 / Reliability and Risk Management / Staff
The course presents a broad treatment of the subject of engineering decision, risk, and reliability. Emphasis is on (1) the modeling of engineering problems and evaluation of systems performance under conditions of uncertainty; (2) risk-based approach to life-cycle management of engineering systems; (3) systematic development of design criteria, explicitly taking into account the significance of uncertainty; and (4) logical framework for risk assessment and risk/benefit tradeoffs in decision making. The necessary mathematical concepts are developed in the context of engineering problems.

***731 / Analytical Tools for Energy Management / Staff**
The course is designed to provide analytical tools to new professionals entering the world of energy management. It provides an overview of energy management, understanding of energy costs, appreciation for where they are incurred and how to reduce them. The context for energy management in a commercial or industrial facility with energy usage that is significant and involves complex systems. Topics covered include energy audits, life cycle costing, renewable energy systems, distributed generation, and improvement

of efficiency through an understanding of combustion systems, process energy use, lighting, maintenance practices, and control systems.

***732 / Sustainable Energy – Technology and Options Selection / Staff**
Assessment of potential current and future energy systems, covering resources, extraction, conversion, and end-use, with emphasis on meeting regional and global energy needs in the 21st century in a sustainable manner. Renewable and conventional energy technologies are presented (solar, wave and tidal, wind, hydropower, biomass, geothermal, nuclear, fossil) and their attributes described within a framework that aids in evaluation and analysis of energy technology systems in the context of political, social, economic, and environmental goals.

#733 / Project Management / Staff
Project Management is a critical skill in today's business environment. This course covers the basics of project management techniques and tools to improve project success. Students will learn how to apply effective project management to a variety of common business situations, including starting a company, bringing a product to market, constructing a physical facility, and developing a major piece of software, among others. Case studies and guest speakers will be used to explore real-life examples of project management successes and failures.

***734 / Leadership and Management Development / V. Baba**
Managerial competence is a function of knowledge, skills, and experience relevant to management. The purpose of this course is to develop skills in diagnosing situations that require change in organizational life and to facilitate such changes. Within the context of organizational behaviour, the course will emphasize the acquisition of personal, interpersonal, and group skills that are required to lead and manage people effectively in modern organizations.

***744 / Holistic Considerations for Design of Structures**
Buildings are complex systems that require at the design and major retrofit stages careful consideration of safety, serviceability and aspects dealing with environmental factors, energy consumption and movement of moisture. The design of buildings and other structures must also take into account durability of materials, life-cycle cost and general principles of sustainability.

***750 / Model Predictive Control Design and Implementation / Staff**
Majority of advanced control designs employed in practice use the Internal Model Control (IMC) structure and Model Predictive Control (MPC) concepts. The course presents theory and best implementation practices for control model identification, controller design, testing, and implementation.Upon completion of this course, the engineer will be able to perform the following; identify linear models for control, design and implement MPC controllers for an integrated plant, and optimize the process using the MPC steadystate features.

***751 / Process Design and Control for Operability / Y. Nazer**
Process design involves tradeoffs to achieve performance over a range of operations due to uncertainty, variability of inputs, and a range of production goals. A flexible design functions acceptably over the range and well at the typical conditions. Processes safety (seven layers, HAZOP, LOPA, quantitative analysis), effect of structure on reliability and plant dynamics. Classical supervisory control methods and typical applications to major equipment and systems.

***752 / Process Modeling and Optimization / V. Mahalec**
Architecture of simulation programs, solution algorithms, integration of simulation models from different simulators. Steady-state and dynamic simulation via sequential modular and equation-oriented algorithms. Optimization of steady-state and dynamic performance, sensitivity of the optimum, multi-objective optimization. Analysis of plant data, gross error detection, parameter estimation to match the plant performance. On-line monitoring and optimization of process performance.

***754 / Process Design and Integration for Minimal Environmental Impact / M. Sorin**
The course focuses on integration of process units and on the design of Energy Utility Systems, Heat Exchanger Networks (HEN) and Water Distribution Systems and presents methodologies that lead to energy efficient, water saving and economically attractive designs. Methods for heat integration (HEN, utility selection, heat engines, heat pumps, refrigeration cycles, and pinch analysis), cogeneration and integrations with industrial sites, water and cooling minimization and their applications.

***760 / Design and Innovation / H. Mahler**
This course will explore the creative design process, tools and methods that will enable students to discover, identify, and analyze opportunities and develop those opportunities into innovative design solutions. Based on a self-selected topic, students will develop a well-conceived design concept by the end of term, supported by scheduled gate reviews, in-class presentations and peer review. The outcome of the course will be a final presentation where students will demonstrate their design concept. The course is studio-based.

***761 / Product Design and Development / R. Fleisig**
This course will explore the creative design process from concept to design. Students will lrean processes, tools, and methods for prototyping, analyzing, visualizing, and validating a design with the goal of delivering innovative design solutions. Based on projects begun in SEP 760, students will work in small teams to develop a high quality appearance model by the end of the term, supported by scheduled gate reviews, in-class presentations, and peer review. The outcome of the course will be a final presentation where students will demonstrate their appearance model. The course is studio-based.
Prerequisite: SEP 760 Design and Innovation.

MANUFACTURING

Enquires: 905-525-9140 Ext. 26566
E-mail: manufacturing@mcmaster.ca
Fax: 905-528-7901
Website: http://manufacturing.mcmaster.ca/

Staff / Fall 2009

ASSOCIATE PROFESSOR
Michael R. Thompson, B.Sc., B.Eng., M.Eng., (McMaster), Ph.D. (Waterloo) P.Eng. /
Director, M.Eng. in Manufacturing

The Master of Engineering in Manufacturing is a one-year program aimed at highly motivated students seeking advanced training in the broad area of Manufacturing. Application for admission to the program may be made through the Walter G. Booth School of Engineering Practice.

Successful applicants will be placed in the appropriate department of the Faculty of Engineering depending on the student's area of technical interest. In addition to the general requirements for entry into a graduate program in Engineering, students must hold an Honours Bachelor's degree in Engineering with at least a B average (equivalent to a McMaster 8.0/12 GPA) in the penultimate and final years. An accelerated option for the program is available to McMaster engineering undergraduates. Delivery of the program includes a strong emphasis on project-based experience within the Manufacturing Industry, which is obtained through a blend of industrial work experience and an industry-based project during the coursework portion the program. Requirements for these are outlined below. Due to the strong practical orientation of the experiential and project components of the program, successful completion requires that students have strong interpersonal and communication skills. To this end, each applicant will be interviewed. A strong performance in the interview is a critical requirement for admission.

The program accepts only full-time students. The program is normally expected to take one year of study for students enrolling in May with minimal industrial experience and would normally comprise eight months of study for students enrolling in September with more extensive industrial experience.

Work Experience

Manufacturing-based employment experience is a critical component of the program. All candidates must successfully complete a minimum of eight months of industrial work experience, of which a minimum of four months must be obtained at the graduate (i.e. post baccalaureate) level. Any applicants with a minimum of four months of appropriate undergraduate work experience will be required to apply for admission to the program in May with the objective of obtaining the required graduate level employment experience prior to the start of classes in September. Obtaining employment in an appropriate setting will be facilitated by McMaster's Engineering Co-op and Career Services (ECCS). Applicants should note that suitable employment is not guaranteed and that the onus is on the student to find suitable employment. The suitability of non-ECCS derived employment should be discussed with the program Director. Applicants with a minimum of one year of post baccalaureate manufacturing-related industrial experience will normally apply for admission into the program in September. The appropriateness of this employment experience will be judged by information provided to the program Director during the application process. Students must write a suitable report on project work undertaken during the graduate work experience as part of the compulsory course MANUF 700.

Accelerated Option

This option is only available to students currently enrolled at McMaster as undergraduate engineering students in the Departments of Chemical Engineering, Materials Science and Engineering, and Mechanical Engineering. In exceptional circumstances, students from other Engineering departments may apply for entry into the accelerated option by contacting the program Director. Application for entry into the accelerated option occurs in the fall semester of the penultimate year of undergraduate studies. Applicants must have maintained a minimum CGPA of 8.0 for their undergraduate course work and successfully passed the interview with the program Director for admission into the accelerated option. The accelerated option allows students to gain specific industrial experience in the manufacturing industry through a minimum four month work experience (facilitated through ECCS) and to complete two 600 level manufacturing-related courses in their final undergraduate year which will be counted towards their M.Eng. degree requirements. Completion of the requirements for the accelerated option are embodied in completion of the course ENG 4F00. Completion of this course along with meeting all of the other admissions criteria will result in a favourable recommendation by the program Director to the School of Graduate Studies for admission into the M. Eng. program.

Project

Students must complete a suitable industry-based project. Projects will normally be performed by groups of two to three students and will ideally be multi-disciplinary in nature. Projects should address a specific problem found in a manufacturing facility. It is expected that the majority of the projects will be developed from work undertaken during the graduate employment experience and students should look for opportunities to develop projects with their employers. Students are also encouraged to develop their own ideas and find industrial sponsors. Project groups will have an industry-based supervisor (stakeholder) with whom the student team can discuss progress, arrange trials etc.. Students will also have an academic supervisor who will normally have some expertise in the subject area. It is expected that the teams will meet with their supervisors on a regular basis to discuss their progress.

Projects will have three "tollgate" stages. Student groups must submit a project proposal by the end of September to their academic and industrial supervisors for approval of scope, deliverables and timeline. The interim project report, outlining progress-to-date, is due at the end of the fall semester for approval by the academic and industrial supervisors. The final written project report is normally due at the end of the winter semester. However, if the supervisors agree that the project group has not made sufficient progress by this point, they are free to request further work to meet the standards of the program. The project team will orally defend their final project report to an examination board comprised of their industrial supervisor, academic supervisor and program Director (Chair) or designate.

Courses

Students must complete two compulsory full-year courses, one compulsory one-term (half) course and five option half courses or the equivalent combination of half-term (quarter) and half courses.

Half courses are marked with an asterisk (*) and quarter courses are marked with a pound sign (#). Students should note that not all option courses are offered every year.

COMPULSORY COURSES

MANUF 700 / Work Term Report
MANUF 701 / Project
MECH ENG *729 / Manufacturing Systems
MANUF 700 / Work Term Report
Work term report for graduate work term experience or equivalent, to be approved by their industrial supervisor(s). Report to be submitted by the end of September. Attendance at Manufacturing-related guest seminars and organised industry tours. Seminar to be given on M.Eng. project at the end of the academic year. All elements assessed on a Pass/Fail basis. Terms 1 and 2 Prerequisite: Enrolment in the M.Eng. Manufacturing program

MANUF 701 / Project
Industry-based multi-disciplinary project. Course elements are: project proposal (end of September), mid-year report (mid-December) and final report which will be examined orally. Evaluated on a Pass/Fail basis. Terms 1 and 2 Prerequisite: Enrolment in the M.Eng. Manufacturing program

OPTION COURSES

Students who did not complete the Accelerated Option will select any combination from the below list totalling two and a half courses, of which a maximum of two half courses can be taken at the 600 level. Students who completed the Accelerated Option must select any combination of courses totalling one and a half courses, all of which must be at the 700 level. Other manufacturing-related courses may be substituted with permission of the Director. Note that not all courses are offered every year.

Chemical Engineering
***6B03 /** Polymer Reaction Engineering
***6C03 /** Statistics for Engineers
***6E03 /** Digital Computer Process Control
***6X03 /** Polymer Processing
***6Z03/** Interfacial Engineering
***742 /** Membrane Based Bioseparations
***752 /** Optimization of Chemical Processes
***761 /** Multivariable, Stochastic and Adaptive Control of Chemical Processes
***764 /** Process Control Design
***765 /** Multivariate Statistical Methods for Process Analysis and Monitoring
***770 /** Selected Topics in Polymer Science and Engineering
***772 /** Polymer Rheology
***773 /** Advanced Concepts of Polymer Extrusion
***774 /** Advances in Polymeric Materials

Materials Science and Engineering
***6C03 /** Modern Iron and Steelmaking
***6D03 /** Corrosion
***6H03 /** Thin Film Science and Engineering
***6I03 /** Sustainable Manufacturing Processes
***6J04 /** Materials Selection in Design and Manufacturing
***6P03 /** Properties of Polymeric Materials
***6R03 /** Ceramic Science
***6T03 /** Properties and Processing of Composites
#740 / Interfacial Phenomenon in Materials Science
#743 / Selected Topics in Oxidation and Corrosion
#754 / Fracture Mechanics
#755 / Deformation of Crystalline Solids
***760 /** Electronic Materials
#765 / Selected Topics in Polymer Science and Engineering
#771 / Principles of Heterogeneous Kinetics
#773 / Properties of Metallurgical Slags
#774 / Injection Metallurgy
#775 / Physical and Mathematical Modelling of Materials Processing

Mechanical Engineering
***6K03 /** Introduction to Robotic Mechanics
***6L03 /** Industrial Design
***6Q03 /** Mechanical Vibrations
***6T03 /** Finite Element Applications
*6Z03 / CAD/CAM/CAE
***702 /** Advanced Dynamics of Machines
***705 /** Advanced Finite Element Analysis
***710 /** Machine Tool Analysis
***714 /** Solidification Processing
***724 /** Solid and Surface Modeling Techniques
***728 /** Manufacturing Processes I
***734 /** Theory of Plasticity
***738 /** Manufacturing Processes II
***743 /** Advanced Mechatronics
***751 /** Advanced Mechanical Engineering Control Systems
***752 /** Advanced MEMS Fabrication and Microfluidics

MEMORANDUM

To: Graduate Curriculum and Policy Committee

From: Michael Thompson, Director, Masters of Engineering in Manufacturing Program

Re: Changes to the Master of Engineering in Manufacturing Program

Date: April 2, 2009

The Masters of Engineering in Manufacturing (MMEM) program is seeking to change its organizational structure from a program shared across three departments to a single entity merged within the existing Walter G. Booth School of Engineering Practice (BSEP) to become its fourth pillar in experiential learning. This change would see the participating graduate students in this M.Eng. program gain access to a unified 'home' within the new engineering building where desk space and resources such as computers would be found and classroom space provided. The three engineering departments involved, Chemical, Materials and Mechanical, have agreed that this change would be benefit for the students and has the full support of the Dean of Engineering, Dr. Wilkinson. We are now seeking the approval of the Graduate Curriculum and Policy Committee to make this transition.

Background

The objective of the M.Eng. program has been to offer students the opportunity to combine a conventional engineering degree in a specific discipline, within the Mechanical, Materials and Chemical departments, with the breadth of a program in manufacturing which would add to their flexibility and provide them with direct industrial experience. The combined B.Eng./M.Eng. degree of the Manufacturing program has a number of unique and attractive features. These include:

a) the opportunity to complete a Master's degree with integrated industrial experience with only one additional year of study.

b) the opportunity of gaining industrial experience through Coop program during the final two summers of the program (at the end of years 3 & 4). The Coop experience is a program requirement to gain industrial experience.

c) the opportunity for final year students to take challenging courses covering the broad area of manufacturing, including courses from other departments and courses taught by instructors from industry.

d) this program should provide students with the most essential ingredients for a future career -- industrial experience and intellectual flexibility.

The current organization sees incoming students entering into the M.Eng. program through their respective departments based on their undergraduate discipline, though the administrative details of

admissions and daily operation are handled through the BSEP. Once in the program, these Master's candidates take courses from the currently approved selection offered from the three involved departments, namely Chemical Engineering, Materials Science and Engineering, and Mechanical Engineering. Concurrently with their completion of these courses, the students engage in experiential learning through a project which places them in a manufacturing company. In most cases, the participating departments in the program are unable to offer desks, computers, or space for these students as they work towards completing the requirements of the degree while they are on-campus.

Why Change the Program?

The arguments for staying at McMaster to continue in this advanced degree versus immediate entry to the industry upon completion of an undergraduate degree are currently weakened by the absence of resources for the program. The current structure of the program sees it splinted between the participating departments. As a result, there is no home for these students, often no desk space is available, and limited opportunities for interaction and networking as their projects proceed. For any design and troubleshooting project where small teams of people (2-3 persons) are involved, it would seem ideal to provide a suitable environment where problem solving is fostered and manufacturing issues may be discussed openly. The current enrolment numbers of 4-8 people per year in the graduate program are manageable under its current organization but there is no opportunity to grow its size in the future.

What Would Be Gained By The Change?

An opportunity to provide the much needed resources to grow the MMEM program will soon be available upon completion of the new Engineering building on the main campus. Through joining with the other experiential programs making up BSEP, access to seating, classrooms and space for interaction and networking would be made available to MMEM. This is seen as enhancing the professional branding of the manufacturing-related degree, both to our graduate students as well as our visiting industrial collaborators who come on campus to meet and discuss progress with on-going or proposed projects. The proposed change in organization would seem a logical progression for the program as its administrative management is already provided through BSEP. A summary of current state of the MMEM program in comparison to the proposed changes are given in Table 1.

Table 1. Summary of proposed changes

	Current	**Proposed**
Admissions	Recommendations made by Director, with input from Department chairs if needed. Application files handled by BSEP for MEng.	Applications will be reviewed by committee chaired by Director with representatives from Departments. Application files handled by BSEP for MEng.
Administrative Responsibility	Director of program oversees admissions, advising, course selection and identifying project. Students are assigned to Department (ChE, MSE, Mech)	Director of program oversees admissions, advising, course selection and identifying project. Students will be registered with BSEP.
Courses	Current departmental graduate course offerings.	Same, plus BSEP courses, with permission.
Project supervision	Project supervisors identified from participating departments.	Same.
Internships		Coordination of internships with MEng Design program.
Undergraduate portion	Director recruits students and tracks undergraduate courses, including accelerated option with 600 level course materials taken during undergraduate degree.	Director recruits students and departmental program contact tracks undergraduate courses, including accelerated option with 600 level course materials taken during undergraduate degree.
Space	Students may or may not have desk space depending on department policy.	Students will have desk space and access to meeting rooms through BSEP.

Michael Thompson

From: Ken Coley [coleyk@mcmaster.ca]
Sent: April-03-09 12:51 PM
To: Dr. Mark Hatton, Acting Associate Dean - Engineering; mthomps@mcmaster.ca
Cc: hrymak@mcmaster.ca; deaneng@mcmaster.ca; habibi@mcmaster.ca; espiritu@mcmaster.ca
Subject: Re: Change of status for Manufacturing Engineering program

Mark,
I support the change which will include the Manufacturing Engineering MEng under the umbrella of the Walter Booth School for Engineering Practice.

Ken

Kenneth S Coley
Department Chair
Department of Materials Science and Engineering, McMaster University,1280 Main St W., Hamilton, Ontario L8S 4L7.
Tele: (905)525-9140 ext 24503
Fax: (905)528-9295

At 12:08 PM 4/3/2009, Dr. Mark Hatton, Acting Associate Dean - Engineering wrote:
>Hello Mike:
>
>You have asked about the procedure for including the Manufacturing
>Engineering M. Eng. program under the umbrella of the Walter Booth
>School of Engineering Practice. I have suggested you forward to Medy
>Espiritu a letter explaining the proposed move and the advantages for
>the Manufacturing Engineering program by being a part of the Booth
>School together with letters of support from the chairs of Materials
>Science and Engineering, Chemical Engineering and Mechanical
>Engineering, and from the Dean of Engineering. Medy will include this
>item on the agenda of the next Graduate Curriculum and Policy
>Committee. As the meeting is next Thursday, April 9, at 2 pm in MUSC
>318, we will need the letters today please!
>
>Mark Hatton, PhD
>Acting Associate Dean, Graduate Studies (Engineering)
>
>
>--

Michael Thompson

From: Saeid Habibi [habibi@mcmaster.ca]
Sent: April-03-09 12:58 PM
To: 'Michael Thompson'
Cc: 'Loyzer, Vania'
Subject: RE: Recommendation regarding transfer of MEng Manufacturing program to Booth School

Dr. Thompson:

The Department of Mechanical Engineering supports the move of the M.Eng program in Manufacturing to the School of Engineering Practice.

Saeid Habibi

McMaster University

Department of Chemical Engineering
1280 Main Street West, JHE 374
Hamilton, Ontario, Canada L8S 4L7

Tel. (905) 525-9140
Dept. 24292, Direct 23136
Fax (905) 521-1350
E-mail hrymak@mcmaster.ca

Andrew N. Hrymak, Professor and Chair

April 3, 2009

Dr. Mark Hatton
Acting Associate Dean (Engineering)
School of Graduate Studies

RE: Master of Engineering in Manufacturing program

Dear Dr. Hatton:

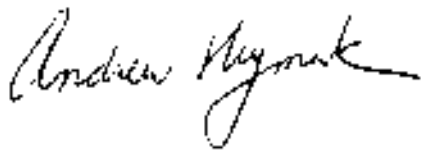
I am writing to enthusiastically support the proposed change in academic responsibility for the MEng Manufacturing program from departmental responsibility to the Walter G. Booth School of Engineering Practice.

The Booth School already handles the applicant files for the program, and administratively the program is similar to other M.Eng. programs. Moreover, I anticipate synergies that would develop between the MEng Manufacturing program and the other programs in terms of courses, coordination of student project supervisors and arranging internships. Since the MEng. Manufacturing program is an interdisciplinary program between Chemical, Materials and Mechanical engineering; it also fits with the philosophy and mandate for the School.

It has been difficult for the Chemical Engineering department to offer a MEng program for part-time students because graduate courses tend to be offered during the day and we do not provide financial or desk space for students. The Booth School is organized to specifically address these issues.

If you need any further information, please let me know and I would be pleased to provide it.

Best regards,



Chair, Department of Chemical Engineering
Director, Walter G. Booth School of Engineering Practice

From: David Wilkinson <deaneng@mcmaster.ca>
Sender: david.s.wilkinson.work@gmail.com
Subject: Re: Change of status for Manufacturing Engineering program
Date: Sat, 4 Apr 2009 14:06:29 -0400
To: "Dr. Mark Hatton, Acting Associate Dean - Engineering" <adeangse@mcmaster.ca>
Cc: mthomps@mcmaster.ca, hrymak@mcmaster.ca, coleyk@mcmaster.ca, habibi@mcmaster.ca, espiritu@mcmaster.ca

Mark - I am also supportive of this change. I think what is important for the committee to understand that this is largely an administrative change. There will no changes at all to the program, but responsibility for handling admissions, etc. will rest with staff in BSEP rather than having this burden fall on a single department. It will also help us to market the interdisciplinary nature of the program. The Faculty will be developing other interdisciplinary programs of this type and the intention is that all of these will reside within BSEP. David

2009/4/3 Dr. Mark Hatton, Acting Associate Dean - Engineering <adeangse@mcmaster.ca>
Hello Mike:

You have asked about the procedure for including the Manufacturing Engineering M. Eng. program under the umbrella of the Walter Booth School of Engineering Practice. I have suggested you forward to Medy Espiritu a letter explaining the proposed move and the advantages for the Manufacturing Engineering program by being a part of the Booth School together with letters of support from the chairs of Materials Science and Engineering, Chemical Engineering and Mechanical Engineering, and from the Dean of Engineering. Medy will include this item on the agenda of the next Graduate Curriculum and Policy Committee. As the meeting is next Thursday, April 9, at 2 pm in MUSC 318, we will need the letters today please!

Mark Hatton, PhD
Acting Associate Dean, Graduate Studies (Engineering)

****

David S. Wilkinson, Distinguished University Professor, PEng, FCIM, FACerS
Dean, Faculty of Engineering
McMaster University
1280 Main St. W.
Hamilton, Ontario L8S 4L7, Canada
++++++++++++++++++++++++++++++++++++++
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****

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http://www.mcmaster.ca/graduate

REPORT TO GRADUATE COUNCIL FROM THE FACULTY OF HEALTH SCIENCES GRADUATE POLICY AND CURRICULUM COMMITTEE

At its meeting on April 13, 2009, the Faculty of Health Sciences Graduate Policy and Curriculum Committee approved the graduate curriculum revisions for 2009-2010.

FOR GRADUATE COUNCIL APPROVAL

Nursing
- Change in admission requirements for Ph.D. program
- Change in admission requirements for M.Sc. program
- Change in comprehensive examination procedure

Physiotherapy program – calendar copy

FOR GRADUATE COUNCIL INFORMATION

Biochemistry
- Change in course title: *6E03 – Gene Expression

Health Research Methodology

- Change in course description
  - *700 – Philosophy of Science for Health Research
  - * 723 – Regression Analysis
  - *724 – eHealth: Fundamentals of eHealth and the Canadian Health Care System
  - *727 – Theory and Practice of Measurement
  - *730 – Introduction to Research Methods for Randomized Controlled Trials (also changes to prerequisites)
  - *737 – Economic Analysis for the Evaluation of Health Services
  - *743 – Systematic Review Methods (also changes to prerequisites)
  - *745 – Qualitative Research Methods (also changes to prerequisites)
  - *751 – Observational and Analytical Research Methods (also changes to prerequisites)
  - *770 – Mixed Methods Research Designs for Health Services and Policy Research
  - 790 – Advanced Analysis of Survey Data (also change to prerequisites)
- Change in course title and description
  - *758 – Qualitative Research Methods for Analysing and Interpreting Data
- Change in course title
  - *728 – Genetic Epidemiology and Statistics

Medical Sciences
- New course
    *718 – Molecular Cytogenetics and Techniques

Nursing
- Clinical Health Sciences course cancellation
    CHS *600 – Spirituality in Health Care

Rehabilitation Science
- Change in course description
    730 – Scholarly Paper
- Cross-listing
    RS *725 – Knowledge Exchange & Translation (to be cross-listed as HRM *725 and Nursing *725)

Physiotherapy
- Change in course description:
    *634 – Physiotherapy Clinical Practice II
    713 – Research and Evidence-Based Practice
    *714 – Physiotherapy Clinical Practice III
    *724 – Physiotherapy Clinical Practice IV
    *734 – Physiotherapy Clinical Practice V
- Change in course title and description:
    *624 – Physiotherapy Clinical Practice I

/medy
April 13, 2009

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Nursing
NAME OF PROGRAM	Graduate Nursing Program

PROGRAM DEGREE	**Ph.D. (x)**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. (x)**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS	x	**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	x	**EXPLAIN:** Admission requirements will be two academic references and ONE clinical references			
OTHER		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Currently, each candidate must supply two academic and two clinical references.

We also state that our admission deadline is January 31 of each year

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

All applicants will be required to submit two academic and one clinical reference.

We also plan to change the admission deadline to January 15 of each year

RATIONALE FOR THE RECOMMENDED CHANGE:

We have surveyed our last four years of applicants and followed those selected for admission. We have noted that GPA and the students' written submission seem to more highly predict success in the program than the references. So, our rating of applicants' admission packages have been revised and they place less emphasis on references, particularly clinical. We believe obtaining one clinical reference will be sufficient to assess the candidate's clinical competence and will be less burdensome for applicants.

We believe that changing our admission deadline to January 15 will assist in the competitiveness of our program in light of other local graduate nursing programs.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

Admission cycle for 2010 September admission

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

NO

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

2. Two academic and one clinical references.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: M. Black Email: blackm@mcmaster.ca Extension: 22259 Date: March 23, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Nursing
NAME OF PROGRAM	Nursing Graduate Program

PROGRAM DEGREE	**Ph.D. (x)**	**M.A. ( )**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**	x	**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER		**EXPLAIN:**			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

In the current process, the students are required to develop 4 outlines, 2 for each of the main topic areas, i.e. practice and research methods

Students are also given 8 weeks to write the two papers, or 12 weeks in special circumstances (see attached for details)

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

See attached procedure. The requested change is that the students will only be required to complete 2 outlines, 1 for each of the two topic areas; and the time given to the student to write the papers will be decreased.
As in the current process, the students will prepare the outlines in consultation with their supervisory committee members and appointed chair, prior to submission to the Board. If one or both outlines are not accepted by the Board, it/they will be returned to the student, with feedback, and the student will be required to resubmit the unacceptable outline(s) to the Board (which is the current process). If both outlines are acceptable, the student will be informed by the Chair, who will then set up the exam process, as usual. Following the initial meeting with the examiners, the student will have 6 weeks (instead of 8 as in the current process) to complete the papers and 10 weeks (instead of 12 as in the current process) in special circumstances (e.g. if they are working). The remainder of the process will remain the same as in the current process.

RATIONALE FOR THE RECOMMENDED CHANGE:

The time required to complete the 4 outlines is significant so wiith this change, the students will save time at the beginning of the process, as well as saving 2 weeks during the writing of the papers. The rationale for the shorter writing time period is that the student knows the topics ahead of time and, therefore, should require less time to complete the papers. The Board felt that these changes would simplify and shorten the time of the examination process, while still maintaining the intent/purpose of the examination.

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*

This change would take place as of September 2009. However, we would like to request that those students who started prior to September 2009 be given the option to use the new procedure if they wish.

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

NA

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

No change

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Margaret Black Email: blackm@mcmaster.ca Extension: 22259 Date: November 17,2008

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

Request for Change to the Current Comprehensive Examination Process for the PhD Nursing Program

OLD PROCEDURE
3.2
Continue to meet as necessary with the supervisory committee to develop and to prepare 4 outlines, 2 for Area A and 2 for Area B.

NEW PROCEDURE
Continue to meet as necessary with the supervisory committee to develop and prepare 2 outlines, one for Area A (Practice and Specialization-Related Issues) and one for Area B (Research Methods-Related Issues)

Comment [S1]: This is how it is worded in the most recent version of the booklet

OLD PROCEDURE
3.4
The Health Sciences Graduate Programs Administrative Assistant will circulate the 4 outlines and the accompanying documents to the other members of the Board of Comprehensive Examination Chairs, who will meet to select 1 outline from each of the two areas on which the student will write, and to select potential examiners (Appendix C, "Criteria for Evaluating Comprehensive Examination Outlines" will be used by the Board to assess the topics). If any of the 4 outlines is considered unsatisfactory, the unsatisfactory outline(s) will be returned to the student to be rewritten and resubmitted. The student will be required to resubmit the outlines to the Board the following month for approval. Feedback and suggestions for improvement to the outlines will be communicated to the student and the members of the supervisory committee by the Comprehensive Examination Chair. Once the 2 outlines for the papers have been approved by the Board of Comprehensive Examination Chairs, the student's Comprehensive Examination Chair, in consultation with the Board will choose the examiners, one primary examiner for each topic and a generalist (See Section 10.0, p.9 for composition of the Examination Committee). The Comprehensive Examination Chair will then secure their agreement to serve and arrange a time to meet with examiners and the student. The date for submission of the two papers, the date for return of the written feedback on the papers, and the date and the place for oral examination will also be finalized with the examiners.

NEW PROCEDURE
3.4
The Health Sciences Graduate Programs Administrative Assistant will circulate the 2 outlines and the accompanying documents to the other members of the Board of Comprehensive Examination Chairs, who will meet to review and approve the outlines, and select potential examiners (Appendix C, "Criteria for Evaluating Comprehensive Examination Outlines" will be used by the Board to assess the topics). If one or both of the outlines is considered unsatisfactory, the unsatisfactory outline(s) will be returned to the student to be rewritten and resubmitted. The student will be required to resubmit the outlines to the Board the following month for approval. Feedback and suggestions for improvement to the outlines will be communicated to the student and the members of the supervisory committee by the Comprehensive Examination Chair. Once the 2 outlines for the papers have been approved by the Board of Comprehensive Examination Chairs, the student's Comprehensive Examination Chair, in consultation with the Board will notify the student and choose the examiners, one primary examiner for each topic and a generalist (See Section 10.0, p.9 for composition of the Examination Committee). The Comprehensive Examination Chair will then secure their agreement to serve and arrange a time to meet with examiners and the student. The date for submission of the two papers, the date for return of the written feedback on

the papers, and the date and the place for oral examination will also be finalized with the examiners and the student.

OLD PROCEDURE
Students will normally have eight weeks to prepare the written papers. Students may add one week to the 8 week period of preparation if this period includes the Christmas holiday. In special circumstances, students may request up to 12 weeks to prepare the written papers. Such a request must be supported by the thesis supervisor and supervisory committee and made in writing to the Associate Dean of Graduate Studies (Health Sciences).

NEW PROCEDURE
Students will normally have six weeks to prepare the written papers. Students may add one week to the 6 week period of preparation if this period includes the Christmas holiday. In special circumstances, students may request up to 10 weeks to prepare the written papers. Such a request must be supported by the thesis supervisor and supervisory committee and made in writing to the Associate Dean of Graduate Studies (Health Sciences).

OLD PROCEDURE
12.0 ROLE OF THE EXAMINERS
The student learns which 2 of the 4 outlines have been selected by the Board of Comprehensive Examiners at a meeting between the 3 examiners, the student and the Comprehensive Examination Chair. The purpose of the meeting is to discuss the 2 outlines and clarify any issues concerning them. Any changes to the outlines that are agreed upon by the examiners should be confirmed at this meeting. Meeting minutes stipulating any outline changes will be prepared by the Comprehensive Examination Chair and sent to the student, the examiners and the supervisor. The examiners will have no further contact with the student until the time of the oral examination.

NEW PROCEDURE
12.0 ROLE OF THE EXAMINERS
The student attends a meeting with the 3 examiners and the Comprehensive Examination Chair to discuss the 2 outlines and clarify any issues concerning them. Any changes to the outlines that are agreed upon by the examiners should be confirmed at this meeting. Meeting minutes stipulating any outline changes will be prepared by the Comprehensive Examination Chair and sent to the student, the examiners and the supervisor. The examiners will have no further contact with the student until the time of the oral examination.

School of Rehabilitation Science
Physiotherapy Program

Revisions for 2009-2010 Graduate Calendar

1. Introduction
The Faculty of Health Sciences Graduate Program and the School of Rehabilitation Science offer a Master of Science degree program in Physiotherapy. The Master of Science in Physiotherapy will prepare students with the knowledge, skills and professional behaviours to practice as an entry level physiotherapist in a variety of health care and community settings. The M.Sc. (PT) is a full-time course-based Master's degree. Its curriculum is based on the principles of problem-based, small group, self-directed learning. Students will learn to integrate theory, evidence and practice to become evidence-based practitioners in the present and future health care environment. Graduates with a strong research bias may be eligible to proceed to thesis-based graduate programs should they wish to do so in the future.

Enquiries: 905 525-9140 Ext. 27829, Admissions Coordinator

Fax: 905 524-0069
Email: otpt@mcmaster.ca
Website: http://www.srs-mcmaster.ca

2. Staff / Fall 2009

PROFESSORS
Patricia Solomon, Dip.PT (Manitoba), M.H.Sc. (McMaster), Ph.D. (Waterloo)
Paul Stratford, Dip. PT (Mohawk), M.Sc. (McMaster)

CLINICAL PROFESSOR
Lynne Geddes, B.Sc.PT (Western), M.R.E. (Toronto)

ASSOCIATE PROFESSORS
Vickie Galea, B.Sc., M.Sc. (Waterloo), Ph.D. (McMaster)
Joy MacDermid, B.Sc. (St. Mary's), B.H.Sc.PT., M.Sc., Ph.D. (Western)
Michael Pierrynowski, B.Sc. M.Sc. (Waterloo), Ph.D. (Simon Fraser)
Julie Richardson, Dip.PT (New Zealand), B.Sc.PT (Toronto)., M.Sc. (New Zealand), Ph.D. (Toronto)
Laurie Wishart, Dip. P&OT (Toronto), B.Sc. PT. (Toronto), M.Sc., Ph.D. (McMaster)

ASSISTANT PROFESSORS
Liliana Coman, M.D. (Bucharest), M.Sc. (Waterloo), B.H.Sc.PT (McMaster)
Norma MacIntyre, B.Sc. PT (Toronto), M.Sc. (Western), Ph.D. (McMaster)
Monica Maly, B.Sc., M.Sc., Ph.D. (Queen's)
John McCluskie, B.Sc. (Guelph), M.Sc. PT, M.Sc. MedSci (McMaster)
Bronwen Thomas, B.Sc.PT (Western), M.Sc. PT (Western)
Christopher Winn, B.Sc. Kinesiology (Simor Fraser), M.Sc. PT (McMaster)
Linda Woodhouse, B.A. (Western), B.Sc.PT (Toronto), M.A. (Western), Ph.D. (Toronto)

PROFESSOR EMERITI
Jean Wessel, B.Sc. PT (McGill), M.H.Sc. (McMaster), Ph.D. (Alberta)
Renee Williams, Dip. P&OT (Toronto), M.H.Sc. (McMaster), Ph.D. (Waterloo)

*please see attached "2009 PT Program revised info" ITEM 3 for the rest of the entry.

3. Program Requirements
The Master of Science (PT) will meet professional accreditation and practice standards. Students will complete course work, clinical placements and an independent research project. All students will be required to complete the equivalent of 23 half-courses over 6 terms of full-time study across two extended study years.

4. Admission Requirements
To be eligible for admission to the MSc (PT) program, applicants must have completed a four-year baccalaureate degree or the equivalent number of courses (120 units/credits), and have achieved a minimum grade-point average of "B" or 75% or 3.0/4.0 or 8.0/12.0 in their final 60 units of credit. Post-graduate coursework is also considered in this GPA calculation.

Applicants may apply during the fourth year of their degree. In this case, the pre-admission GPA for eligibility purposes is calculated using the most recent 60 units of credit towards their degree. If an applicant in this category is

subsequently offered admission to the program, the offer is “conditional” upon successful completion of their four-year degree by June 30 in that year, and maintenance of a B average in their final 60 units of credit.

Additional requirements include:

a) a minimum of one biological or life science course at any level with a grade of at least B (75%) or higher
b) a minimum of one social science or humanities course at any level with a grade of at least B (75%) or higher.

Please see program website for more details regarding prerequisites.

5. Application Procedure

Applicants are required to apply via the COMPASS.ORPAS on-line application service located at the Ontario Rehabilitation Sciences Programs Application Service (ORPAS), Guelph, Ontario website: http://www.ouac.on.ca/orpas/.

The M.Sc. (PT) International Students Brochure and International Students application package are available from the M.Sc. (OT/PT)Admissions Office, McMaster University.

The M.Sc. (PT) invites aboriginal applicants to submit applications via the COMPASS.ORPAS on-line application service located at the ORPAS website: http://www.ouac.on.ca/orpas/

Top ranked applicants (based on GPA) will be invited for a personal interview, which entails a series of 7 “mini interviews.” Personal qualities and life experiences are assessed at these “mini” interviews. Interviewers are drawn from the faculty, the community, and current students.

Enquiries: 905 525-9140 Ext. 27829, Admissions Coordinator
Fax: 905 524-0069
Email: otpt@mcmaster.ca
Website: http://www.srs-mcmaster.ca/

6. Accreditation
The M.Sc. (PT) Program is accredited by the Accreditation Council of Canadian Physiotherapy Academic Programs (ACCPAP).

7. Regulation of Practice
All physiotherapists in Canada must be registered with the appropriate provincial regulatory body in order to practice in that province. Each regulatory body has a separate and distinct registration process; however, in all circumstances, a degree in physiotherapy is required. In Ontario, successful completion of the Physiotherapy Competence Examination (PCE) is also required.

McMaster University **School of Graduate Studies**

1280 Main Street West
Hamilton, Ontario, Canada
L8S 4M2

Phone 905.525.9140
Ext. 23679
Fax 905.521.0689
http://www.mcmaster.ca/graduate

FACULTY OF SCIENCE GRADUATE CURRICULUM, POLICY, ADMISSIONS AND STUDY COMMITTEE

At its meeting on April 13, 2009, the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approved the graduate curriculum revisions for 2009-2010.

FOR GRADUATE COUNCIL APPROVAL

Chemistry
- Changes to calendar description
  - M.Sc. Degree
  - Departmental Colloquia and Seminars

FOR GRADUATE COUNCIL INFORMATION

Chemistry
- Course cancellations
  - #701 – Molecular Modeling
  - #702 – Microcomputers
  - #709 – Mass Spectrometry in Drug Discovery
  - #752 – Organic Ions
  - #776 – Theory of Heterogeneous Reactions

Geography
- New courses
  - *6GI3 – Advanced Vector GIS
  - *734 – Qualitative Approaches to Health Geography
- Change in course description
  - *770 – Advanced Analysis of Survey Data (also change to prerequisities)
- Course cancellation
  - *6I03 – Advanced Vector GIS

Kinesiology
- Change in course description
  - *711 – Motor Control
- Change in course title and description
  - *720 – Social and Psychobiological Factors in Health and Exercise Psychology

Physics and Astronomy
- New course
    #773 – Education and Teaching in Physics

Psychology
- Change in course description
    *770 – Advanced Analysis of Survey Data (also change to prerequisities)

/medy
April 14, 2009

Revised regulations to appear in the 2009-10 Graduate Calendar for the Chemistry Graduate Programs

M.Sc. Degree

The minimum course requirement for the M.Sc. degree is four graduate modules or the equivalent, selected from Chemistry #701-790, 600-level courses (one module credit each), or extra-departmental graduate courses (usually two module credits each). A maximum of two instrumental modules (Chem #730, 736, 737, 740, 741) and a maximum of one 600-level course may be included in the minimum course requirement. Additional courses beyond the minimum requirement may be recommended by the supervisory committee. The minimum passing grade for any module or course is B-. M.Sc. candidates must also present a departmental research colloquium (see below). In addition, a thesis embodying the results of original research must be defended in a final oral examination.

Students who have satisfactorily completed most of the course requirements for the M.Sc. degree and have made satisfactory progress in their research may apply to the Department for transfer to the Ph.D. program, without first satisfying the M.Sc. thesis requirement. The transfer examination involves the submission and defence of a report detailing the student's research progress and projected research goals. This examination must be scheduled no later than the beginning of Term 6.

Ph.D. Degree

The minimum course requirement for the Ph.D. degree is two graduate modules or the equivalent beyond the requirements for the M.Sc. degree. For students who have transferred from the M.Sc. program, the total minimum course requirement is, therefore, six graduate modules. Additional courses beyond the minimum requirement may be recommended by the supervisory committee.

A student who enters the Ph.D. program with an M.Sc. degree from another university must complete a minimum of two modules or the equivalent, and present a departmental research colloquium (see below).

All Ph.D. candidates must pass a Comprehensive Examination concerned mainly with their major field of study. A thesis embodying the results of original research must be defended in a final oral examination. In their final year of study, Ph.D. students must present a departmental seminar on their research before defending their thesis.

Departmental Colloquia and Seminars

Regular attendance at departmental colloquia and seminars is expected from all graduate students. Specifically, attendance at colloquia is mandatory for M.Sc. students and direct-entry Ph.D. students during the first two years of their program. These students must present a colloquium on their own research during their second year.

All Ph.D. students must also present their research work in a departmental seminar during their final year of study before defending their thesis.

Courses

The Department of Chemistry offers graduate courses in the form of “modules”, which are the formal equivalent of one-quarter of a full graduate course. 600-level half courses are also available for credit at the M.Sc. level only and with approval from the Department, to a maximum of one half course (equivalent to one module credit). Students are free to include Education *750 (Principles and Practice of University Teaching) in their program, but this cannot be counted toward their course requirements for the degree.

McMaster University **School of Graduate Studies**

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REPORT TO GRADUATE COUNCIL
FROM THE JOINT FACULTIES OF HUMANITIES AND SOCIAL SCIENCES GRADUATE CURRICULUM AND POLICY COMMITTEE

At its meeting on April 8, 2009, the Joint Faculties of Humanities and Social Sciences Graduate Curriculum and Policy Committee approved the graduate curriculum revisions for 2009-2010.

FOR GRADUATE COUNCIL APPROVAL

Faculty of Humanities
- Calendar copy: M.Sc./Ph.D. Cognitive Science of Language
- Calendar copy: M.A. Communication and New Media
- Change in course requirements: History M.A. by Thesis

Faculty of Social Sciences
- Calendar copy: M.A. International Relations

FOR GRADUATE COUNCIL INFORMATION

Faculty of Humanities

Cognitive Science of Language
- New courses
    - *721 – Fundamentals of the Cognitive Neuroscience of Language
    - *722 – Contemporary Issues in the Cognitive Neuroscience of Language
    - #725 – The Cognitive Science of Language Lecture Series
    - #726 – The Cognitive Science of Language Ph.D. Lecture Series
    - *730 – Language Analysis Methods: Phonology and Morphology
    - *731 – Language Analysis Methods: Syntax and Semantics
    - #741 – Research Proposal Development
    - #742 – Research Proposal Development (Ph.D. Thesis)
    - *750 – Research Design and Methods

Communication and New Media
- New courses
    - *6Q03 – Advanced Topics in Communication I
    - *6QQ3 – Advanced Topics in Communication II

English and Cultural Studies

- New courses
    - ENG/CSCT *749 - Getting and Spending: The Birth of Consumer Culture
    - ENG/CSCT *761 - Framing CanLit
    - ENG/CSCT *762 – Queer Historicisms and British Cultural Memory
    - ENG/CSCT *765 – Biopolitics: An Introduction
    - ENG/CSCT *769 - Science Fiction: Mindworlds and the Boundaries of the Human
    - ENG/CSCT *771 – Canadian Literary Celebrity
    - ENG/CSCT *793 – Oh Behave! Post-war Sexualities
- Course cancellations
    - CSCT *705 – Music and Feminist Theory
    - ENG *706 – Contemporary Fiction and the Burdens of the Past
    - ENG/CSCT - *712 – Contemporary Memoirs
    - ENG/CSCT - *770 – Margaret Atwood Inc.
    - ENG *774 – Women Writers of the 18th Century
    - ENG *778 – Minimalist Cinema
    - ENG/CSCT *785 – Lives of Humans and Other Animals
    - ENG/CSCT *786 – Imaging Global Community
    - ENG *794 – The Subject in Question
    - ENG *796 – Bodies/Spirits: Post-Enlightenment Subjectivities

French

- Course cancellation
    - *707 - Le roman de Flaubert à Huysmans

History

- New courses
    - *723 – Global Environmental History
    - *765 – Canadian Sport History (offered on Dean's approval January 2009)
- Change in course title and description
    - *731 – War and Society in the Early Modern World

<u>Faculty of Social Sciences</u>

Anthropology

- Course cancellations
    - *706 – Developing Societies
    - *707 – Problems of Hunting and Gathering Societies
    - *708 – Nature, Culture and Power
    - *716 – Gender and Anthropology
    - *729 – Interpretive Anthropology
    - *733 – Symbolic Anthropology

Economics
- Change in course description
    *723 – Macroeconomic Theory 1
    *741 – Monetary Economics (remove the Economics *724 prerequisite)
    770 – Advanced Analysis of Survey Data (also change in prerequisite)
    *791 – Topics in Advanced Health Economics
    *795 – Analysis of Health Data
- Change in prerequisite
    *742 – Topics in Money and Macroeconomics

Globalization
- New course
    *715 – Globalization and China

Health, Aging and Society
- New course
    *712 – Special Topics in Health

Political Science
- New courses
    *755 – Lying in Politics
    *756 – The Autonomy of Politics
    *757 – Theories of Political Community
    *775 – M.A. International Relations Colloquium
- Change in course title
    *750 – Topics in Political Theory
    *751 – Classic Theories of "Realpolitik"
- Course cancellations
    *745 – Problems of Post-Communist Transition
    *791 – Punishment and Social Order

Social Work
- New courses
    *6G03 – Selected Topics
    *773 – Doctoral Research Seminar
- Course cancellations
    *710 – Health and Medical Care
    *714 – International and Interprovincial Comparisons
    *724 – Racism and Social Marginalization in Canadian History

Sociology
- Course cross-listing
    765 – Advanced Analysis of Survey Data (same as Economics 770, Geog 770, Psychology 770, and HRM 790)

/medy
April 14, 2009

DEPARTMENT OF LINGUISTICS AND LANGUAGES

GRADUATE PROGRAMS IN THE

COGNITIVE SCIENCE OF LANGUAGE

CALENDAR COPY

COGNITIVE SCIENCE OF LANGUAGE

Based in the Department of Linguistics and Languages, the graduate program (MSc; PhD) in the Cognitive Science of Language is interdisciplinary and includes faculty from Humanities, Science, and Health Sciences. The program has a strong research orientation and has expertise in the areas of Linguistics, Cognitive Science, Sociolinguistics, Neurolinguistics, Forensic Linguistics, Applied Linguistics, Computational Linguistics, Digital Media and Cognition, and Psycholinguistics. The breadth of faculty research areas provides a rich environment for graduate training. The graduate program introduces students to the issues in those fields that form the nexus of cognitive science, linguistics, and languages and trains them in the research methods employed to study them. Our graduate programs provide flexibility so that students can optimize their studies around their own areas of interest.

Enquiries

Graduate Secretary
Department of Linguistics & Languages
McMaster University
1280 Main Street West
Hamilton Ontario Canada L8S 4M2

Faculty - Fall 2009 (N.B. *Additional professors from other departments in the Faculties of Humanities, Science, Engineering, and Health Sciences will be joining the Cognitive Science of Language program as their appointments are confirmed.)*

PROFESSORS

John J. Colarusso/B.A. (Cornell), M.A. (Northwestern), Ph.D. (Harvard)/ Linguistics & Languages, Anthropology
John F.Connolly/A.B. (College of the Holy Cross), M.A. (Saskatchewan), Ph.D. (London)/ Linguistics & Languages
Magda Stroinska/M.A. (Warsaw), Ph.D. (Edinburgh)/ Linguistics & Languages

ASSOCIATE PROFESSORS

Vittorina Cecchetto,B.A., M.A., Ph.D. (Toronto)/ Linguistics & Languages
Inga Dolinina Hitchcock, M.A., Ph.D. (Leningrad)/ Linguistics & Languages
Anna L. Moro,B.A., M.A., Ph.D. (Toronto)/ Linguistics & Languages

ASSISTANT PROFESSORS
Catherine Anderson/B.A. (McMaster), Ph.D. (Northwestern)/ Linguistics & Languages
Elisabet Service/B.A., M.A., Ph.D. (Helsinki)/ Linguistics & Languages

PROFESSORS EMERITI
George Thomas, B.A. Ph.D. (London)/ Linguistics & Languages

M.Sc. Degree

Applicants will be eligible for admission if they hold a 4 year Honours undergraduate degree in one of the following disciplines, and fulfill McMaster's School of Graduate Studies general requirements (http://www.mcmaster.ca/graduate/): Linguistics; Psychology; Neuroscience; Speech Sciences; Health Sciences; Communication Studies; Multimedia; Computer Science; and Engineering. Some applicants may require additional courses in core areas (e.g., linguistics or psychology) in order to be eligible for admission. Each application will be evaluated on an individual basis.

Coursework (2.5 courses plus additional requirements below)

*** denotes half courses; # denotes quarter course modules**

Required courses:

COGSCIL *750 (or PSYCH *710)

COGSCIL *721 and *722

One of COGSCIL *730 or *731.

Plus the equivalent of one additional half course (within the Department of Linguistics & Languages or in another related Department).

Additional requirements (these are Pass/Fail courses):

COGSCIL #741

COGSCIL #725

Plus the M.Sc. Thesis

The M.Sc. Thesis is a work of original research (empirical or theoretical) under the supervision of a participating faculty member and evaluated by an evaluating committee established by the Department. The Thesis must be submitted by August of the second year of the M.Sc. program.

Ph. D. Degree

The M.Sc. in the Cognitive Science of Language or an equivalent Master's degree is required for entrance into the Ph.D. program. Some applicants may require additional courses in core areas (e.g., linguistics or psychology) in order to be eligible for admission. Each application will be evaluated on an individual basis.

A. For students holding an M.Sc. in the Cognitive Science of Language

Students entering with the M.Sc. in the Cognitive Science of Language are required to complete the equivalent of 2 full year courses. If the following courses were not included in the M.Sc. program they must be included in the Ph.D. program of study: COGSCIL *730, *731, *750; PSYCH *710.

Additional requirements (these are Pass/Fail courses):

COGSCIL #742

COGSCIL #726

B. For students entering with a Master's degree but not an M.Sc. in the Cognitive Science of Language

Coursework (4 courses total plus additional requirements below)

Required courses:

COGSCIL *750

PSYCH *710

COGSCIL *721 and *722

COGSCIL *730 or *731.

Plus additional courses to total 4 courses

Additional requirements (these are Pass/Fail courses):

COGSCIL #742

COGSCIL #726

Ph.D. Comprehensive Exam

The Ph.D. Comprehensive Exam must be completed within two years of entering the Ph.D. program and is articulated in three phases:

Phase 1: Directed Reading: The student will develop a reading list in collaboration with the supervisor and the thesis supervisory committee.

Phase 2: Written Exam: In the Spring of the second year of the Ph.D. program, students will be required to sit for a comprehensive exam. If the student fails the exam, there will be one opportunity to re-write the exam.

Phase 3: Oral Exam: Having passed the written exam the student will be examined orally by the supervisory committee. If the student fails the exam, there will be one opportunity to re-take it.

Courses

*721 Fundamentals of the Cognitive Neuroscience of Language

The course will examine a range of linguistic topics from the cognitive and cognitive neuroscience perspectives. Linguistic topics will include but not be limited to: phonetics, phonology, morphology, syntax, and semantics. The course will emphasize cognitive processing mechanisms for typical language as well as a range of developmental and acquired disorders of language processing. No single text will be used but rather selected readings that will include current research articles and book chapters.

*722 Contemporary Issues in the Cognitive Neuroscience of Language

The course is a continuation of CSL 721 and will examine current issues and controversies in the cognitive science and cognitive neuroscience of language areas. Linguistic topics will include but not be limited to: phonetics, phonology, morphology, syntax, and semantics. The course will emphasize cognitive processing mechanisms for typical language as well as a range of developmental and acquired disorders of language processing. No single text will be used but rather selected readings that will include current research articles and book chapters.

***730 Language Analysis Methods: Phonology and Morphology**

This course is a foundational course whose aim is to ensure that students are familiar with current approaches and issues in the areas of phonology and morphology. Students will work through complex cross-linguistic data from a variety of approaches in order to evaluate the effectiveness of particular theoretical models in handling phonological, morphological and morphophonological phenomena. Particular attention will be paid to phonological phenomena that are sensitive to morphological (morpheme) structure.

***731 Language Analysis Methods: Syntax and Semantics**

This course is a foundational course whose aim is to ensure that students are familiar with current approaches and issues in the areas of syntax and semantics. Students will work through complex cross-linguistic data from a variety of approaches in order to evaluate the effectiveness of particular theoretical models in handling syntactic phenomena and in how meaning is derived at the word, sentence or discourse level.

***750 Research Design and Methods**

The course will cover general quantitative and qualitative methods in language research, providing skills for independent planning of research projects. Specific topics will vary from one year to another, targeting, for instance, methods for psycholinguistic, neurolinguistic, sociolinguistic and applied linguistic research as well as corpus-based analysis, computational linguistics and phonetics.

#725 The Cognitive Science of Language Master's Lecture Series

The course is comprised of a series of one-hour lectures by established researchers in areas encompassed by the Cognitive Science of Language program. Talks will occur biweekly (i.e., fortnightly) and will be followed by a discussion period.

#741 Research Proposal Development (Master's Thesis)

The course functions as a tutorial/mentor experience with the student developing a research protocol in consultation with the relevant supervisor.

#726 The Cognitive Science of Language Ph.D. Lecture Series

The course is comprised of a series of one-hour lectures by established researchers in areas encompassed by the Cognitive Science of Language program. Doctoral students will be expected to make at least one presentation in the series. Talks will occur biweekly and will be followed by a discussion period.

#742 Research Proposal Development (Ph.D. Thesis)

The course functions as a tutorial/mentor experience with the student developing a detailed protocol, in consultation with his/her supervisor, in preparation for the doctoral thesis.

Additional courses that can be used to fulfill the M.Sc. and/or Ph.D. program requirements:

Linguistics & Languages:

*6D03: Computers and Linguistic Analysis

*6XX3: Topics in Linguistic Theory

*6B03: Second Language Acquisition

*6LB3: Advanced Phonetics and Phonology

Psychology, Neuroscience & Behaviour

*710: Statistics and research design

*726: Behavioural neuroscience

*729: Physiological psychology

*730: Quantitative methods

*734: Neural network models of cognition and perception

#711 Advanced statistics and computational methods I

#712 Advanced statistics and computational methods II

#713 Special Topics in Psychology, Neuroscience and Behaviour I

#714 Special Topics in Psychology, Neuroscience and Behaviour II

#715 Special Topics in Psychology, Neuroscience and Behaviour III

#716 Special Topics in Psychology, Neuroscience and Behaviour IV

COMMUNICATION AND NEW MEDIA

The Department of Communication Studies and Multimedia offers a program leading to an M.A. degree in Communication and New Media.

Enquiries: (905) 525-9140, Ext. 27603
Fax: 9905) 577-6930
Email: gradcnm@mcmaster.ca
Website: http://csmm.mcmaster.ca/grad/contacts.html

Staff/Fall 2008

In addition to the faculty listed below, students in the M.A. program may select a supervisor from outside the department where appropriate.

PROFESSORS
Graham Knight, B.A. (Kent), M.A., Ph.D. (Carleton)

ASSOCIATE PROFESSORS
Christina Baade, B.Mus. (Northwestern), M.Mus., Ph.D. (Wisconsin-Madison)
Robert S. Hamilton, M.F.A. (SAIC), M.F.A. (Jan van Eyck Acadamie)
Violetta Igneski, B.A., M.A. (Western Ontario), Ph. D. (Toronto)
Andrew MacTavish, B.A. (Mount Saint Vincent), M.A. (Dalhousie), Ph.D. (Alberta)
Liss Platt, B.F.A. (Connecticut), M.F.A. (California-San Diego)
Alexandre Sevigny, B.A. (York), M.A., Ph.D. (Toronto)
Stefan Sinclair, B.A. (British Columbia), M.A. (Victoria), Ph.D. (Queen's)

ASSISTANT PROFESSORS
Faiza Hirji, B.A. (Simon Fraser), M.A., PhD. (Carleton)
David Ogborn, B.Sc. & B.A. combined (Mary), B.A. (Manitoba), M.A., PhD. (Toronto)
Christina Quail, B.A., M.A. (Pennsylvania), Ph.D. (Oregon)
Philip Savage, B.A. (Carleton), M.A. (Simon Fraser), Ph.D. (York)

M.A. Degree

Admission to the program will be on a full-time basis only, starting in September of the academic year.

Admission to the M.A. degree program will normally require an Honour's Bachelor's degree (four-year degree) in a Communication Studies and/or Multimedia program, or its equivalent with a minimum grade point average of B+ (equivalent to a McMaster 8.5 GPA out of 12) in the last 10 one-term courses relevant to studies in communication and digital media.

Students holding Honours Bachelor's degrees (four-year degrees) from other disciplines including (but not limited to) linguistics, cultural studies, fine art and the social sciences may also be considered, if they can demonstrate sufficient training in Communication Studies and Multimedia to undertake studies at the graduate level.

Degree Requirements

The M.A. in Communication and New Media will typically be completed within twelve months. Students will take five 3-unit courses, in addition to a major research project (either a 40 page research paper or a combination of a smaller paper and a digital media project).

Course Requirements

Course requirements consist of a required core course in research methods relevant to communication studies and new media (CSMM 700; see Course Listing) and four additional courses from Course Listing. Students must achieve a grade of at least a B- in all courses they take for credit in order to qualify for the degree.

Major Research Project

In addition to the course requirements, students will complete a major research project under the supervision of a core faculty member. Students will be assigned a supervisor on entry into the program, but have the option of changing supervisors. Any change of supervisor must be submitted for approval to the departmental Graduate Committee by the end of February.

The major research project will be evaluated on a pass/fail basis by the project supervisor.

There are **two** options for the major research project:

1. A paper (approximately 40 pages) based on original empirical research.

   This may consist of primary data gathering and analysis or analysis of secondary data. The paper will provide an opportunity to apply methodological skills acquired in the mandatory research methods course (CSMM 700) to theoretical and substantive issues taken up in other courses. A short proposal outlining the research should be completed and approved by the supervising faculty member by the end of Term II. A copy of the proposal and the supervisor's written approval and comments must be submitted to CSMM's Graduate Committee within one week of approval being given. The Graduate Committee may seek further clarification about the project if deemed appropriate.

2. A digital media product (e.g. a methodological tool, an educational application, or computer game related to communication skills) together with a shorter paper (approximately 15-20 pages) explaining the conception and development of the product.

   The digital media product should reflect expertise and knowledge acquired during course work. A short proposal outlining the project must be completed and approved by the supervising faculty member by the end of Term II. A copy of the proposal and the supervisor's written approval and comments must be submitted to CSMM's Graduate

Committee within one week of approval being given. The Graduate Committee may seek further clarification about the project if deemed appropriate.

Program Timeline

Students will normally be expected to take 3 courses in Term I and 2 courses in Term II. Preparation for the major research project will normally begin in Term II and be completed by the end of Term III.

Students are expected to complete all program requirements within 12 months of entry.

Courses

With the exception of CSMM 700, which will be offered every year, other 700 course offerings will vary from year to year depending on student and faculty interest. All courses listed below run for one term.

CSMM 700 - Research Methods in Communication and New Media

This course provides an overview of research methodology relevant to the study of human communication. Topics include formulation of a research problem and research questions, appropriate methods of data gathering (questionnaires, focus groups, interviewing, ethnography, digitalized document collection), and data analysis (quantitative and qualitative approaches).

CSMM 701 - Media, Gender & Performance

This course examines how gendered identities are performed and/or constructed in complex social, historical, and cultural processes and conditions. Particular attention is paid to the impact of the media and mediation upon gender performance. Topics may include fashion, popular music, and queer genders.

CSMM 702 - Media and Social Issues

An analysis of relationships between mass media and modern society. Topics may include ideology and agenda-setting in the news, representations of social problems (e.g., homelessness, violence), moral panics, media scandals, media and violence, media and racism, media and religion, media and social activism, etc.

CSMM 703 - New Media Arts: Theory & Practice

This course examines the impact of new media technologies, ranging from cell phones to websites and interactive installations, on communication and culture from the perspective of both commercial and artistic applications.

CSMM 704 - Media, Discourse & Communication

This course will investigate different forms of communication (e.g. print media, TV/radio news, television entertainment, reality TV, infomercials, advertisements, science shows), using the methods of discourse analysis, from both a quantitative and qualitative perspective. Data will be analyzed from the perspective of critical discourse analysis, which investigates how social relations and cultural identities are entrenched in verbal and non-verbal ways. The course will expose students to both psychological and sociocultural communication perspectives.

CSMM 705 - Media, Audiences & Interactivity

This course explores the social, cultural, and economic effects of forms of audience impact and participation that arise in and around conventional and interactive media. The course will focus on a broad range of media, and draw upon a range of critical work such as studies of audience reception practices, cultivation analysis, fan culture, participatory culture, and theories of interactivity.

CSMM 706 - Technologies of Communication

This course will examine technological dimensions of communication practices from various perspectives (e.g., actor-network theory, media ecology, science studies, material culture studies, and policy formation). Topics may include: the debate over technological determinism; feminist critiques of technology; bio-technology as a communicative medium; technology and democracy; and media technologies in historical and cross-cultural perspective.

CSMM 707 - Theoretical & Ethical Issues in Communication

This course examines selected topics, both theoretical (e.g., Habermas's discourse ethics and other normative ethical theories) and applied (e.g., truthfulness, role of mass media in a democratic society, ethics on the internet). The main focus will be to advance understanding of normative frameworks of media and communication as applied to both personal and professional interactions. Specific topics may vary from year to year.

CSMM 708 - Selected Topics in Communication and New Media

The course consists of an examination of different aspects of communication and new media as determined by the course instructor.

CSMM 709 - Independent Study

Students will undertake an in-depth examination of a particular topic of their choice under the supervision of a faculty member.

Students may also take ONE of the following cross-listed 400/600 level courses for program credit:

CMST 6C03 - Issues in Performance Studies

This course serves to synthesize and expand students' engagement with issues studied in performance studies courses through the examination of writings that draw on anthropology, phenomenology, materialist analysis, psychoanalysis, gender theory, postmodernism, postcolonialism and intercultural reception.

CMST 6D03 - International Communication

The relationship between globalization and the media is examined in light of the debates over cultural imperialism, information and technology flow, cultural hybridization, and the media's impact on socio-economic development.

CMST 6E03 - Media and Promotionalism

An examination of the media's role in the promotion of different interests, values, and patterns of behaviour. Topics include advertising, public relations, social activism, and public information campaigns.

CMST 6M03 - Communication, Culture & Technology

This course surveys social patterns of reception and adaptation of communication technologies and their interaction with cultural constructions of (gendered) bodies, everyday life, organization of space and time, and other cultural distinctions.

CMST 6N03 - News Analysis: Theory and Practice

This course will examine how the mode of production of the news influences audiences' perceptions and values of social and political life. Specific emphasis will be put on gate-keeping, agenda-setting and headline transformation.

CMST 6P03 - Social Activism & the Media

This course examines the role of print, electronic and digital media in the relationship between social movements, the state and corporate interests.

CMST 6Q03 – Advanced Topics in Communication I

Students will learn about specific areas or aspects of research in communication studies, such as critical media discourse, culture and consumption, media and globalization, media organization, media and the social environment.

CMST 6QQ3 – Advanced Topics in Communication II

Students will learn about specific areas or aspects of research in communication studies, such as critical media discourse, culture and consumption, media and globalization, media organization, media and the social environment.

Students may also take up to one 3-unit graduate course in another program, as approved by the department.

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	History
NAME OF PROGRAM	MA by Thesis

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. (X)**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	X

CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR	X	**EXPLAIN:** Dropping of one half course for those admitted to the MA by Thesis stream and additional language on regulations for admission
OTHER		**EXPLAIN:**

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Current regulations stipulate that students pursuing their MA by Thesis are required to complete five graduate half courses (four seminars of their choice and History 741 Historiography), a comprehension test in another language acceptable to the department, and a thesis of 25,000-30,000 words of text.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

Students in the MA by Thesis stream will be required to complete four graduate half courses (three seminars of their choice and History 741 Historiography), a comprehension test in another language acceptable to the department, and a thesis of 25,000-30,000 words of text. The calendar would also include the language of our regulations about how a student is accepted into the MA by thesis stream.

Requirements for MA by Thesis in the calendar should therefore read:

1. Three half-course seminars from those offered by the Department in any given year. Master's Candidates may choose one half course seminar from those offered by another department, subject to approval of the History Department.
2. History 741 (Historiography)
3. A comprehension test in French or German or a language acceptable to the Department.
4. A thesis of 25,000-30,000 words of text, under the supervision of a member of the department.

Acceptance in the MA by thesis stream is not automatic with admission to the MA program. Students will require approval in writing from their prospective supervisor, submission of a formal thesis proposal and approval by the Departmental Graduate Studies Committee.

RATIONALE FOR THE RECOMMENDED CHANGE:

During the last review of the Department by OCGS in 2007, the assessors expressed concern that the course requirements were too heavy for a 1 year MA program (currently they are only one half course less than the MA by course and major research paper stream). The Graduate Studies Committee investigated and debated both abolishing the MA by thesis stream and reducing the length of the MA Thesis. After extensive consultation the consensus of the Committee was that the thesis stream does perform a valuable function for the Department, even if only a small number of students are admitted to the stream, and that it was essential to preserve the MA thesis as a substantial piece of primary research. These aims could be best achieved by reducing, by one half-course, the coursework requirement. The language on admission procedures already exists in our departmental regulations, but we think it necessary to be made clear in the Graduate Calendar too.

PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)***

September 2009

ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN.

PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR:

B. Requirements for M.A. by Thesis:

1. Three half-course seminars from those offered by the Department in any given year. Master's Candidates may choose one half course seminar from those offered by another department, subject to approval of the History Department.
2. History 741 (Historiography)
3. A comprehension test in French or German or a language acceptable to the Department.
4. A thesis of 25,000-30,000 words of text, under the supervision of a member of the department.

Acceptance in the MA by thesis stream is not automatic with admission to the MA program. Students will require approval in writing from their prospective supervisor, submission of a formal thesis proposal and approval by the Departmental Graduate Studies Committee.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Stephen Heathorn Email: heaths@mcmaster.ca Extension: 24150 Date: 25 January 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

McMaster University

SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING DEGREE PROGRAM REQUIREMENTS / PROCEDURES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** changes involving degree program requirements/procedures. **All** sections of this form **must** be completed.
2. An electronic version of this form must be emailed to the Assistant Secretary and SynApps System Administrator (Email: *espiritu@mcmaster.ca*).
3. A representative from the department is required to attend the Faculty Curriculum and Policy Committee meeting during which this recommendation for change in graduate curriculum will be discussed.

DEPARTMENT	Political Science
NAME OF PROGRAM	MA in International Relations

PROGRAM DEGREE	**Ph.D. ( )**	**M.A. (X)**	**M.A.Sc. ( )**	**M.B.A. ( )**	**M. Eng. ( )**	**M.Sc. ( )**	**Diploma Program ( )**	**Other *(Specify)***

NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

CHANGE IN ADMISSION REQUIREMENTS		**CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE**		**CHANGE IN COURSE REQUIREMENTS**	
CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR		**EXPLAIN:**			
OTHER	X	**EXPLAIN:** Calendar copy only to reflect the Department's new OCGS-approved MA in IR. The new program was approved at McMaster in the Winter of 2007 and by OCGS in 2008.			

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Please see the attached calendar copy with strike outs and additions.

PROVIDE A DETAILED DESCRIPTION OF THE RECOMMENDED CHANGE *(Attach additional pages if space is not sufficient.)*

Please see attached

RATIONALE FOR THE RECOMMENDED CHANGE: Reflects new approved MA program
PROVIDE IMPLEMENTATION DATE: ***(Implementation date should be at the beginning of the academic year)*** September 2009
ARE THERE ANY OTHER DETAILS OF THE RECOMMENDED CHANGE THAT THE CURRICULUM AND POLICY COMMITTEE SHOULD BE AWARE OF? IF YES, EXPLAIN. The only change since the approval of the program is the addition of one course, Classic Theories of "Realpolitik"
PROVIDE A DESCRIPTION OF THE RECOMMENDED CHANGE TO BE INCLUDED IN THE CALENDAR: See attached
CONTACT INFORMATION FOR THE RECOMMENDED CHANGE: Name: Richard Stubbs Email: stubbsr@mcmaster.ca Extension: 23890 Date: February 6, 2009

If you have any questions regarding this form, please contact the Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.

SGS/December 2006

MA in International Relations Calendar Changes, January 14, 2009:

Notes: Grey text indicates new additional text. Strike-out font indicates deletions. Only sections of the calendar relevant to the new MA in IR are included in this memo. Commentary on the changes that should not appear in the calendar is in Times New Roman. Calendar copy is in Arial type.

M.A. Degree in Political Science

Admission to the M.A. in Political Science degree program requires an average of B+ or better in Honours Political Science or, with the approval of the Department's Graduate Chair, in another discipline. The Department offers a regular M.A. in Political Science program in ~~five~~ four areas: Canadian Politics, Comparative Politics, ~~International Relations,~~ Political Theory and Public Policy. There is also a Collaborative M.A. Program with the University of Guelph in Public Policy and Administration.

In the regular M.A. in Political Science program, studies in all areas may take the form of course work and comprehensive examinations, or course work and a thesis.

A. Course Work with Comprehensive Examinations

Six half courses (or equivalent) at the graduate level and written comprehensive examinations. Normally 3 half courses are taken during the Fall term and 3 half courses during the Winter term. The comprehensive examinations are written in the latter half of July. Students are responsible for one major (two subfields) and one minor (one subfield) area chosen from: Canadian Politics, Comparative Politics, International Relations, Political Theory, and Public Policy and Administration.

B. Course Work with Thesis

Five half courses (or equivalent) and a thesis, which must demonstrate independent research skills. Full-time students who wish to write a thesis must submit a thesis proposal for departmental approval by a date to be determined by the Department. If the thesis proposal is not approved, students may continue in the course/ comprehensive option. The thesis option is normally a two-year program.

C. Public Policy and Administration

The Public Policy and Administration Program is offered in collaboration with the Department of Political Science at the University of Guelph. Students concentrating in this area must satisfy the following requirements:

a) Six half courses (or equivalent) at the graduate level including *783 - Comparative Public Policy, *794 - Public Policy and Administration Research Seminar, *784 - Statistical Analysis for Public Policy and either *785 - Public Sector Management or *786 - Organizational Theory and the Public Sector.

b) The two half year courses beyond those required may be taken on either campus or, with the approval of the Graduate Advisor, up to six units (2 half courses) may be taken from an allied discipline at the McMaster campus; and

c) Written comprehensive examinations in the major field of Public Policy and Administration with a minor field of Canadian Politics, Comparative Politics, International Relations or Political Theory.

MA in International Relations

Admission to the M.A. in International Relations degree program requires an average of B+ or better in Honours Political Science or, with the approval of the Department's Graduate Chair, in another discipline. The Department offers two streams in this MA program: (1) Global Politics and (2) Global Political Economy. Students must indicate the stream in which they wish to major in their application.

Students in the MA in International Relations program are required to complete:

a) 4 International Relations courses; 3 in major stream, 1 other International Relations course
b) 1 additional graduate course
c) 1 MA in International Relations Colloquium course
d) Major Research Paper (10,000) words

Normally completion of the MA in International Relations will take one year.

Ph.D. Degree

[PhD section of calendar not included here]

Courses for the MA in Political Science and the PhD

Courses marked with an asterisk (*) are half courses. The following courses are offered for graduate credit. The 600-level courses are also available to senior undergraduate Honours students. Graduate students normally may take no more than one 600-level course (or equivalent). A student may take only two half courses (or equivalent) offered by another department in the University. Not all courses are offered each academic year. The list of courses to be offered in the following academic year can be obtained from the Department of Political Science after March.

[Note: list of courses for the MA in Political Science and the PhD is not included in this document since that list does not concern the new MA in IR. The international relations courses that the Department offers will be open to students in the MA in Political Science and will be listed under this heading—ie. the new MA in IR does not require a structural change in the part of the calendar listing of courses that does not appear here. The new MA in IR list of courses appears below]

Courses for the MA in International Relations

Courses marked with an asterisk (*) are half courses. The following courses are offered for graduate credit. Courses with a dagger (†) are offered by the Institute on Globalization and the Human Condition.

GLOBAL POLITICS STREAM
*†703, Acts of Global Citizenship
*771 / Advanced Concepts in International Relations Theory / M. Beier, P. Nyers, R. O'Brien, T. Porter, R. Stubbs
*772 / Theories of International Politics / Staff
*773 / Selected Topics in International Politics / Staff
*751 Classic Theories of "Realpolitik" / J. Seaman
*776 / Advanced Issues in Critical Securiy Studies / M. Beier, P. Nyers
*777 / Global Governance / R. O'Brien, T. Porter
(same as Globalization *777)
*778 / Globalization / W. Coleman
*788 / Comparative Foreign Policy: Canadian and US Foreign Policy/L. Wylie

Note: 751 is a new course that was not included in the original proposal for the MA in IR

GLOBAL POLITICAL ECONOMY STREAM
*769 / The Political Economy of East Asia / R. Stubbs
*†712 International Trade and Economic Development
*774 / Global Political Economy / Staff (same as Globalization *774)
*777 / Global Governance / R. O'Brien, T. Porter
(same as Globalization *777)
*778 / Globalization / W. Coleman
*789 / Global Finance / T. Porter

*†704

Other courses of interest:
~~*701~~ / Global Social Policy
*705 / Global Public Policy
(same as Globalization *705)
*†714 / The United States and Globalization since the Late Nineteenth Century
(same as History *714)
*†757 / The British Empire and Global Integration
(same as History *757)
*740 / Theories of Comparative Politics / Staff
*742 / Politics of Developing Areas/ N. Galleguillos
*782 / Development Theory and Administration / S. Huque

Responsibilities of the Course Instructor and Expectations of the Graduate Course

Generally, graduate courses are either given over one term (a half-course) or two consecutive terms (a full course). To most faculty members, the pleasures of constructing, revising and running a graduate course are many. The small classes of people who want to learn, the freedom to allow students to give opinion, to discuss, to explore, to experiment, are all activities that appeal to the intellect and give satisfaction to the witness. Nevertheless, in order for an instructor to offer and present a successful graduate course which meets the expectations of the students, guidelines are required:

1. The graduate course instructor is advised to meet with prospective students before the course starts, particularly those who are from outside the program, in order to provide brief details of the content of the course, the methods of assessment to be used and answer any individual concerns of the student. The overall objectives of the course should be discussed. The instructor should also assess the prospective student for suitability and may wish to offer advice to any student who may not benefit from taking the course, or who should take a pre-requisite course first.

2. The graduate course instructor is expected to recruit any other faculty member(s) or invited qualified expert(s) who may be required to give a special lecture(s) during the course. Such an invitation should be done well in advance of the lecture date. Invited instructors are not usually expected to evaluate the students. However, if the invited instructors are required to assess the students, then the students should be made aware of this in advance.

3. Graduate course instructors, whether the course is at the 600- or 700- level, are responsible for providing students with a written course outline either before the course starts or, at the latest, during the first session. The outline shall specify the following: the content and week-to-week schedule of the course; the nature and timing of course assignments; the methods of assessment that will be used to evaluate the students' work and any penalties that may be assessed for lateness. If the course is to extend beyond the academic term or session, or if assignments are to be due beyond the end of term or session, such arrangements must be specified clearly in the course outline.

4. In addition, the course outline should include a reminder to the students about the expectations of academic honesty, and the perils of plagiarism, collusion and academic dishonesty generally [the instructor and all students in the course should read section 6.1 on ‘Academic Integrity’ in the Graduate Calendar]. The instructor is advised to also bring this message directly to the students’ attention during the first session.

5. At the first session, the instructor is expected to make sure that all students have formally registered for the course through their departments or graduate programs.

6. During the course, it is expected that the course instructor will provide written feedback to give each student an opinion of how well he/she is performing academically, preferably before the ‘drop’ date so that a student can withdraw from the course without academic penalty.
For example, in many graduate courses, the instructor demands that each student in turn gives a seminar to the class, or writes an essay on a topic selected jointly by the instructor and student.

After the seminar and a suitable question period, the instructor generally sends the student a written opinion of the seminar and awards a mark or a grade. Similarly, a submitted essay is critiqued, a grade is given and the essay handed back to the student. The instructor is urged to give such a written assessment to each student well before the end of the course.

7. Some students are slow or are even unwilling to participate in a discussion group. These students should be recognized early and tactfully drawn into the discussion during class by the instructor. The ultimate aim of any graduate course is not only to impart and exchange information to the student but also to equip the student with the confidence and ability to impart information to others, whether by the spoken word or in writing.

8. Many graduate students complete part of their course work by registering for "reading" or "independent study" courses that are accorded regular course numbers for registration, but in which the content and requirements may vary widely from student to student or instructor to instructor. Often, such courses will be taken by a single student working with one instructor. In such courses, an instructor should make an agreement early in the term with each student registered for the course under his or her supervision and a written copy of the agreement should be provided to the student. The agreement should specify the instructor's expectations as to the work to be done, the method of evaluation, the need for and duration of meetings and discussion, and any penalties to be assessed for missed deadlines.

9. In graduate courses concerned with the study of topics at the leading edge of research, it is frequently difficult to predict accurately the content and direction the course will take. Such matters cannot be easily accommodated in written course outlines prepared before courses begin. Course instructors must be allowed flexibility to shift the focus of courses as research and other interests dictate. The instructor is nevertheless responsible for keeping the students informed in writing of changes as the course progresses. While allowed flexibility with regard to content, instructors should refrain from altering the amount of work expected or the schedule of assignments and due dates specified in their original course outlines.

10. At the end of the course, the instructor is responsible for awarding the marks for all assignments, for calculating the final grade and for conveying this information to each student and to the School of Graduate Studies within a reasonable time, i.e. approximately one month after the course has finished (as given in the Graduate calendar).

McMASTER UNIVERSITY

Complete Policy Title:	**POLICY FOR KEEPING RECORDS OF GRADUATE STUDENT ORAL EXAMINATIONS**
Policy Number (if applicable):	**n/a**
Approved by:	**Graduate Council/Senate**
Date of Most Recent Approval:	**April 12, 1994 (Graduate Council)** **May 25, 1994 (Senate)**
Revision Date(s):	
Position Responsible for Developing and Maintaining the Policy:	**Associate Vice-President and Dean, ~~University Secretariat~~School of Graduate Studies**
Contact Department:	**University Secretariat**
DISCLAIMER:	*If there is a discrepancy between this electronic policy and the written copy held by the Policy owner, the written copy prevails.*

Assessment in graduate course work is usually based upon the evaluation of written work. In the rare case ~~when~~ in which an oral examination is part of the assessment process for a graduate course, an audio or video recording must be made ~~in the event~~ if there are fewer than three examiners. Oral examinations connected with or comprising a Ph.D. comprehensive examination, also must be recorded whenever there are fewer than three examiners.

The examiners are responsible for arranging the taping and for ensuring the recording is accessible to the Department Chair (or equivalent) until September 30 following the end of the Fall/Winter Session or until January 31 following the end of the Spring/Summer Session. The relevant Session is the one during which the last graded material for the course was due.

As described by the *Student Appeals Procedure* policy, neither Master's nor Doctoral oral examinations may be appealed. Accordingly, recordings of oral defenses of Master's and Doctoral theses are never required.

~~When there are three or more examiners, no recording is necessary.~~

~~The oral defense of a doctoral thesis is chaired by a representative of the Dean of Graduate Studies, and includes three members of the Supervisory Committee as well as two additional faculty members and, when possible, the External Examiner. Accordingly, there is no need to record any oral defense of a doctoral thesis.~~

~~Master's theses are defended only before the supervisory committee. When the committee is three or more, recording is not necessary. When there are fewer than three examiners, recording should be undertaken.~~

~~In the defense of a master's or a doctoral thesis there is an assumption that the thesis is good enough to go to defense, and therefore and assumption that approval is likely. In the case of an oral examination connected with or comprising a Ph.D. comprehensive examination, that assumption cannot be made. Accordingly, a recording should be made whenever there are fewer than three examiners.~~

~~In all cases audio recording is preferred to video recording because it is much less intrusive. The examiners are responsible for arranging the taping and preserving the tapes for six months after the end of the academic year (deemed to end August 31) in which the oral exam took place.~~

McMASTER UNIVERSITY

Complete Policy Title:	**POLICY CONCERNING RETENTION OF EXAMINATION PAPERS AND OTHER GRADED MATERIALS**
Policy Number (if applicable):	**n/a**
Approved by:	**Senate**
Date of Most Recent Approval:	**June 13, 1990**
Revision Date(s):	
Position Responsible for Developing and Maintaining the Policy:	**University Secretariat**
Contact Department:	**University Secretariat**
DISCLAIMER:	*If there is a discrepancy between this electronic policy and the written copy held by the Policy owner, the written copy prevails.*

The revised policy, which applies to graduate and undergraduate courses, reads as follows:

Instructors are responsible for ensuring that all graded material not meant to be returned to students, and the instructor's record of how the final grades in a course were determined, are accessible to the Department Chair (or equivalent) ~~for a period of seven months following the end of the academic year in which the course was offered (i.e., March 31 of the following winter session)~~until September 30 following the end of the Fall/Winter Session or until January 31 following the end of the Spring/Summer Session. The relevant Session is the one during which the last graded material for the course was due. ~~For deferred examinations, instructors are responsible for ensuring that the examination papers are accessible to the Department Chair for a period of seven months following the end of the academic year in which the deferred examination was written. The end of the academic year is defined in the Senate By-laws as August 31.~~