February 6, 2012

To : Members of the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee

From : Medy Espiritu  
Assistant Secretary and SynApps System Administrator

The next meeting of the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee will be held on Monday, February 13, 2012 at 1:30 p.m. in MUSC-318.

Listed below are the agenda items for discussion.

Please email espirit@mcmaster.ca if you are unable to attend the meeting.

AGENDA

I. Minutes of the meeting of April 15, 2011

II. Business arising

III. Graduate curriculum revisions

Chemistry (Dr. Alex Adronov)

Ph.D. program – change in the calendar description of the Comprehensive Examination Procedure

#734 – Applications of Mass Spectrometry – course cancellation
#737 – Mass Spectrometry Theory – change in course title
#740 – Basic Theory of NMR – change in course title
#741 – Two Dimensional NMR Spectroscopy – course cancellation

Geography and Earth Sciences (Dr. Altaf Arain)

*6CC3 – Environmental Reconstruction Using Stable Isotopes – new course (undergraduate course for graduate credit)
*6EA3 – Environmental Assessment – new course (undergraduate course for graduate credit)
Kinesiology  (Dr. Stuart Phillips)

*706 – Cardiac Rehabilitation – course cancellation
*710 – Exercise and Skeletal Development: A Lifespan Perspective – course cancellation

Mathematics  (Dr. Manfred Kolster)

New courses (undergraduate courses for graduate credit):
*6FM3 – Financial Markets and Derivatives
*6FT3 – Topics in Differential Equations
*6MB3 – Mathematical Biology

Course cancellations:
*6G03 – Dynamical Systems
*6K03 – Mathematics of Finance

Statistics  (Dr. Manfred Kolster)

*6U03 – Nonparametric Methods in Statistics – course cancellation

Medical Physics and Applied Radiation Sciences  (Dr. Tom Farrell)

Change in course requirements:
M.Sc. Radiation Sciences (Medical Physics)
M.Sc. Radiation Sciences (Radiation Biology)
M.Sc. Health and Radiation Physics

*6U03 – Radiation Biology – course cancellation

Physics and Astronomy  (Dr. Alan Chen)

Change in course description:
#715 – Mathematical Introduction to Fluid Mechanics
#716 – Incompressible Computational Fluid Dynamics

Psychology, Neuroscience and Behaviour  (Dr. Bruce Milliken)

Ph.D. program – change in admission requirements
I. Minutes of meeting

The minutes of the meeting of April 22, 2011 were approved on a motion by Dr. Kevlahan, seconded by Mr. Teeter.

II. Business arising

There was no business arising from the previous meeting.

III. Curriculum recommendations

Biology

The Department of Biology proposed the following graduate curriculum revisions.

- Change from Biology *6DD3 to Molecular Biology *6DD3
- Change from Biology *6H03 to Molecular Biology *6H03
- Change from Biology *6P03 to Molecular Biology *6P03

Course cancellations:
- *6Y03 – Ecology of Inland Waters
- 764 – Ultrastructure of Cells

New course:
- *6YY3 – Ecology and Management of Coastal Waters

Dr. Dalnoki-Veress moved, and Dr. Kevlahan seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the proposed graduate curriculum revisions from the Department of Biology, as described in the documents.”

The motion was carried.
Chemistry

The Department of Chemistry requested to cross-list the Computational Engineering and Science course, *6PB3 – Computational Models for Electronic Structure and Chemical Bonding.

Dr. Adronov moved, and Dr. Farrell seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the cross-listing of Computational Engineering and Science course, *6PB3 – Computational Models for Electronic Structure and Chemical Bonding, as Chemistry *6PB3.”

The motion was carried.

Geography and Earth Sciences

The School of Geography and Earth Sciences proposed the following changes to its graduate curriculum.

New courses:
*758 - Advanced Structural Geology
*759 – Numerical Modelling in Global Climatology

Course cancellations:
*6Q03 – Environmental Isotope Geochemistry
*6Q03 – Sedimentary Geochronology
*6S03 – Advanced Topics in Spatial Statistics

Dr. Kevlahan moved, and Ms. Selvamenan seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the proposed graduate curriculum changes from the School of Geography and Earth Sciences, as described in the documents.”

For course *759 – Numerical Modelling in Global Climatology, Dr. Welch commented that all undergraduate courses in climatology that are prerequisites to this course should be listed in the form.

The motion was carried, subject to the additional information required for *759.

Kinesiology

The Department of Kinesiology has proposed the cancellation of course *716 – Skeletal Muscle Cell Biology and Clinical Myology. The instructor no longer has the time or resources to offer this course, and another instructor in the department is offering a similar course.

Dr. Dalnoki-Veress moved, and Dr. Kevlahan seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the cancellation of Kinesiology *716 – Skeletal Muscle Cell Biology and Clinical Myology, as described in the document.”
The motion was **carried**.

**Mathematics**

The following graduate curriculum changes were proposed for the Mathematics programs.

Change in course requirements for the Ph.D. program – reduce course requirements for Ph.D. students who have already fulfilled the M.Sc. course requirements.

Change in course requirements for the M.Sc. program

New courses:
*749 – Mathematical and Computational Fluid Dynamics *(to be cross-listed as CES *749)*
#778 – Applied Computational Finance I
#779 – Applied Computational Finance II

Change in course title and description: *711 – Model Theory

Course cancellations: *773 – Applied Computational Finance

Dr. Farrell moved, and Dr. Adronov seconded,

>“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the proposed graduate curriculum changes for the M.Sc. and Ph.D. programs in Mathematics, as described in the documents.”

Dr. Kevlahan said his department is proposing to reduce the minimum course requirement for Ph.D. students from four one-term courses beyond the M.Sc. level to two one-term courses. He explained that the current policy requires students who have completed the M.Sc. in mathematics to complete a minimum of 10 one-term courses during their Ph.D. and M.Sc. studies. He further said the minimum is in need of modification given the range of appropriate courses currently offered and the fact that essentially all Ph.D. students enter through the M.Sc. program (either by transferring or completing an M.Sc.).

Dr. Kevlahan stated that his department has also proposed adding an M-phimac option to the M.Sc. program and updating the Ph.D. course requirement to two courses for those students transferring from the M.Sc.

The motion was **carried**.

**Statistics**

The following graduate curriculum changes were proposed for the Statistics program:

Change in course requirements for the M.Sc. program – Statistics *770 will be a required course
Dr. Balakrishnan explained that the department is proposing to make Statistics *770 a required course for the Statistics M.Sc. program. Dr. Balakrishnan further explained that the course will assist graduate students in Statistics in developing technical report writing skills. In addition, the course would effectively introduce research components into the Coursework Option, which was one of the concerns raised in the recent OCGS evaluation of the M.Sc. program in Statistics.

New course:
*721 – Statistical Modelling in Practice

Dr. Balakrishnan explained that the new course, *721, would be required by students in the Financial Mathematics option.

Change in course description:
*770 – Statistics Seminar

Dr. Balakrishnan explained Statistics *770 is being proposed as a required course for the M.Sc. Statistics program. The proposed change in the description of this course is necessary since it explains that the course consists of the seminars delivered in the weekly seminar series, as well as the reports on selected seminars that graduate students must prepare and submit for evaluation. In this process, the research component can be introduced for all students in the Masters program irrespective of whether they are in the thesis option or in the course work option.

Dr. Dalnoki-Veress moved, and Dr. Farrell seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the proposed graduate curriculum changes for the M.Sc. Statistics program, as described in the documents.”

The motion was carried.

Medical Physics and Applied Radiation Sciences

The Department of Medical Physics and Applied Radiation Sciences has proposed the following graduate curriculum changes.

Change in course title and description:
*770 – Medical Imaging Systems I (to be cross-listed as Biomedical Engineering *770 and Electrical and Computer Engineering *780)

Change in course description:
*776 – Introduction to Operational Health Physics

Request to cross-list a course:
Biomedical Engineering *702 – Medical Imaging Systems II (to be cross-listed as Medical Physics *702)
Dr. Farrell moved, and Mr. Teeter seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the graduate curriculum changes proposed by the Department of Medical Physics and Applied Radiation Sciences, as described in the documents.”

The motion was carried.

Psychology, Neuroscience and Behaviour

The Department of Psychology, Neuroscience and Behaviour has proposed the cancellation of course, *721 – Scientific Ethics and Professional Issues. Dr. Bennett explained that the course is no longer taught because the content overlaps significantly with SGS #101.

Dr. Bennett moved, and Dr. Farrell seconded,

“that the Faculty of Science Graduate Curriculum, Policy, Admissions and Study Committee approve the recommendation of the Department of Psychology, Neuroscience and Behaviour to cancel course *721 – Scientific Ethics and Professional Issues, as described in the document.”

The motion was carried.

There was no other business and the meeting adjourned at 2:15 p.m.
### 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.

<table>
<thead>
<tr>
<th>DEPARTMENT</th>
<th>Chemistry and Chemical Biology</th>
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<tbody>
<tr>
<td>NAME OF PROGRAM</td>
<td>Chemistry</td>
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<tr>
<th>PROGRAM DEGREE</th>
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<th>M.A. ( )</th>
<th>M.A.Sc. ( )</th>
<th>M.B.A. ( )</th>
<th>M. Eng. ( )</th>
<th>M.Sc. ( )</th>
<th>Diploma Program ( )</th>
<th>Other (Specify)</th>
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</thead>
</table>

### NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)

- [ ] CHANGE IN ADMISSION REQUIREMENTS
- [ ] CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE
- [x] CHANGE IN COURSE REQUIREMENTS
- [x] CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR

**EXPLAIN:**
Some text clarifying what is required from students as part of their comprehensive examination has been inserted into the calendar copy.

### OTHER CHANGES

**EXPLAIN:**

### DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

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

The new text is as follows:

All Ph.D. candidates must pass a Comprehensive Examination, taken within the first 20 months after beginning Ph.D. work, that tests breadth of knowledge within the student’s major field of study. The Comprehensive Examination will require the submission of a document that provides a review of a relevant, current field of research, along with an original proposal for research. The defence will consist of a brief presentation, followed by an oral examination.

The original text was:

All Ph.D. candidates must pass a Comprehensive Examination that tests breadth of knowledge within the student's major field of study.
### Rationale for the Recommended Change:
Clarification of the process

### Provide Implementation Date: *(Implementation date should be at the beginning of the academic year)*
Sept., 2012

### 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:
See above

### Contact Information for the Recommended Change:
Name: Alex Adronov  
Email: adronov@mcmaster.ca  
Extension: 23514  
Date: Feb. 6, 2012

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

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SGS/Medy/2011
**SCHOOL OF GRADUATE STUDIES**

**RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES**

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**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

1. This form must be completed for ALL course changes. 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.

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<tbody>
<tr>
<td>COURSE TITLE</td>
<td>Applications of Mass Spectrometry</td>
</tr>
<tr>
<td>COURSE NUMBER</td>
<td>734</td>
</tr>
<tr>
<td>COURSE CREDIT</td>
<td>FULL COURSE</td>
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<tr>
<td>INSTRUCTOR(S)</td>
<td>Terlouw</td>
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<td>PREREQUISITE(S)</td>
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<td>NEW COURSE DATE TO BE OFFERED:</td>
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<td>WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?</td>
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<td>IF YES, ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S). NOTE: CROSS-LISTING OF COURSES REQUIRES APPROVAL FROM EACH DEPARTMENT AND FACULTY CONCERNED.</td>
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<tbody>
<tr>
<td>X</td>
<td>The instructor teaching this course has retired. We will be replacing it with something else in the future.</td>
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1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION:** (For 600-level course, indicate the **Extra Work** to be required of graduate students, i.e., exams, essays, etc.)

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Alex Adronov  
Email: adronov@mcmaster.ca  
Extension: 23514  
Date: Feb. 11, 2010

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
**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

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<td>COURSE NUMBER</td>
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<td>INSTRUCTOR(S)</td>
<td>Green, Kirk</td>
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2. EXPECTED ENROLMENT:

3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):

4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION:  (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

Assignments, midterm, and final exam. Extra work required of graduate students will take the form of an extra assignment as well as a class presentation and/or written report describing an advanced topic in the field or an original research proposal. The instructor may substitute these requirements with a suitable alternative where necessary.

5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?  
   IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).

6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?

PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Alex Adronov   Email: adronov@mcmaster.ca   Extension: 23514   Date: Feb. 12, 2010

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
### School of Graduate Studies

**Recommendation for Change in Graduate Curriculum - For Change(s) Involving Courses**

**Please read the following notes before completing this form:**

1. This form must be completed for **ALL** course changes. 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).
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<tr>
<td>Course Title</td>
<td>Basic Theory of 1D &amp; 2D NMR Spectroscopy</td>
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<tr>
<td>Course Number</td>
<td>740</td>
</tr>
<tr>
<td>Course Credit</td>
<td>Full Course ( )</td>
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<tr>
<td>Instructor(s)</td>
<td>Berno, Bob</td>
</tr>
<tr>
<td>Prerequisite(s)</td>
<td></td>
</tr>
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</table>

**Nature of Recommendation (please check appropriate box):**

- **New Course**
- **Date to be Offered:**
- **Was the proposed course offered on Dean’s approval?** No
- **If yes, provide the date:**

- **Will the course be cross-listed with another department?** If yes, attach to this form any relevant correspondence with the other department(s). **Note:** Cross-listing of courses requires approval from each department and faculty concerned.

- **Change in course title**
- **Provide the current course title:** Basic Theory of NMR

- **Change in course description**
- **600-level course (Undergraduate course for graduate credit) Please see #4 on page 2 of this form**

- **Change to full course**
- **Change to half course**
- **Change to quarter course**

- **Course cancellation**
- **Provide the reason for course cancellation:**

- **Other**
- **Explain:**

**Brief description for calendar** - Provide a brief description *(maximum 6 lines)* to be included in the Graduate Calendar.

**Content/Rationale** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
### 1. STATEMENT OF PURPOSE
(How does the course fit into the department’s program?)

### 2. EXPECTED ENROLMENT:

### 3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL
(i.e., lectures, seminars):

### 4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION:
(For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

Assignments, midterm, and final exam. Extra work required of graduate students will take the form of an extra assignment as well as a class presentation and/or written report describing an advanced topic in the field or an original research proposal. The instructor may substitute these requirements with a suitable alternative where necessary.

### 5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?
If yes, please attach to this form any relevant correspondence with the other department(s).

### 6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Alex Adronov  
Email: adronov@mcmaster.ca  
Extension: 23514  
Date: Feb. 12, 2010

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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
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**DEPARTMENT/PROGRAM**  Chemistry

**COURSE TITLE**  Two dimensional NMR Spectroscopy

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<th>COURSE CREDIT</th>
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<tbody>
<tr>
<td>741</td>
<td>FULL COURSE ( )  HALF COURSE ( )  QUARTER (MODULE) ( X )</td>
</tr>
</tbody>
</table>

**INSTRUCTOR(S)**  Hughes

**PREREQUISITE(S)**

**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

**NEW COURSE**

**DATE TO BE OFFERED:**

**WAS THE PROPOSED COURSE OFFERED ON DEAN’S APPROVAL?**
If Yes, Provide the Date:

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?**
If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s). **Note:** Cross-listing of courses requires approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**

**Provide the Current Course Title:**

**CHANGE IN COURSE DESCRIPTION**

**600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form**

**CHANGE TO FULL COURSE**

**CHANGE TO HALF COURSE**

**CHANGE TO QUARTER COURSE**

**COURSE CANCELLATION**

* Provide the Reason for Course Cancellation:
The instructor teaching this course has passed away.

**OTHER**

**EXPLAIN:**

**BRIEF DESCRIPTION FOR CALENDAR** - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

**CONTENT/RATIONALE** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>STATEMENT OF PURPOSE</strong>  (How does the course fit into the department’s program?)</td>
</tr>
<tr>
<td>2.</td>
<td><strong>EXPECTED ENROLMENT:</strong></td>
</tr>
<tr>
<td>3.</td>
<td><strong>DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL</strong> (i.e., lectures, seminars):</td>
</tr>
<tr>
<td>4.</td>
<td><strong>DESCRIBE IN DETAIL THE METHOD OF EVALUATION:</strong>  (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)</td>
</tr>
<tr>
<td>5.</td>
<td><strong>TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).</strong></td>
</tr>
<tr>
<td>6.</td>
<td><strong>IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?</strong></td>
</tr>
<tr>
<td></td>
<td><strong>PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:</strong></td>
</tr>
<tr>
<td>Name:</td>
<td>Alex Adronov</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:adronov@mcmaster.ca">adronov@mcmaster.ca</a></td>
</tr>
<tr>
<td>Extension:</td>
<td>23514</td>
</tr>
<tr>
<td>Date:</td>
<td>Feb. 11, 2010</td>
</tr>
</tbody>
</table>

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
**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**
1. This form must be completed for ALL course changes. 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/PROGRAM**
School of Geography and Earth Sciences/Faculty of Science

**COURSE TITLE**
Environmental Reconstruction Using Stable Isotopes

<table>
<thead>
<tr>
<th>COURSE NUMBER</th>
<th>COURSE CREDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6CC3</td>
<td>FULL COURSE</td>
</tr>
<tr>
<td></td>
<td>HALF COURSE</td>
</tr>
<tr>
<td></td>
<td>QUARTER (MODULE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INSTRUCTOR(S)</th>
<th>PREREQUISITE(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sang-Tae Kim</td>
<td>Permission of the instructor</td>
</tr>
</tbody>
</table>

**NATURE OF RECOMMENDATION**
(PLEASE CHECK APPROPRIATE BOX)

- NEW COURSE [X]
- Date to be Offered: Term 2, 2012-2013
- Was the Proposed Course Offered on Dean’s Approval? If yes, provide the date:

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?**
NO
- If yes, attach to this form any relevant correspondence with the other department(s). NOTE: Cross-listing of courses requires written approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**
Provide the NEW Course Title:

**CHANGE IN COURSE DESCRIPTION**
600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form [X]

**CHANGE TO FULL COURSE**

**COURSE CANCELLATION**
Provide the Reason for Course Cancellation:

**OTHER CHANGES**
[EXPLAIN: We request this course (6CC3) to be listed as a graduate course, with the base being Earth Sc/Envir Sc 4CC3. There will be extra work for graduate students

**BRIEF DESCRIPTION FOR CALENDAR**
Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.
Stable isotopes are widely used in today’s earth and environmental sciences because their unique chemical properties enable us to reconstruct past and current environmental processes. This course will cover the principles of stable isotope geochemistry and introduce the basic analytical techniques in the field of stable isotope geochemistry. Furthermore, this course will also focus on the applications of stable isotopes to paleoclimatology or environmental reconstruction studies.

**CONTENT/RATIONALE**
Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. STATEMENT OF PURPOSE (How does the course fit into the department’s program?)

2. EXPECTED ENROLMENT:

3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):
   lectures

4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)
   In-Class Quizzes (5%), Laboratory Participation/Exercises (15%), Assignment (15%), Mid Term (20%), Final Exam (25%)
   For graduate students or 600-level course: Literature Review (20%)

5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).

6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?

PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

| Name: Ann Wallace | Email: wallann@mcmaster.ca | Extension: 23535 | Date: Jan 25, 2012 |

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

SGS/Medy/2011
## School of Graduate Studies

### Recommendation for Change in Graduate Curriculum - For Change(s) Involving Courses

#### Please read the following notes before completing this form:
1. This form must be completed for **all** course changes. 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/Program
SGES (School of Geography and Earth Sciences)/Faculty of Science

### Course Title
Environmental Assessment

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Credit</th>
<th>Instructor(s)</th>
<th>Prerequisite(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6EA3</td>
<td></td>
<td>Maureen Padden</td>
<td>No</td>
</tr>
</tbody>
</table>

### Nature of Recommendation (Please check appropriate box)

- **New Course** [X]
- **Date to be Offered:**
- **Was the Proposed Course Offered on Dean’s Approval?**
  - If Yes, Provide the Date:
  - **Will the Course be Cross-listed with Another Department?**
    - If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s). **Note:** Cross-listing of courses requires approval from Each Department and Faculty Concerned.

### Change in Course Title
Provide the Current Course Title:

### Change in Course Description

- **600-Level Course (Undergraduate course for graduate credit)** Please see #4 on page 2 of this form [X]

### Change to Full Course

<table>
<thead>
<tr>
<th>Change to Half Course</th>
<th>Change to Quarter Course</th>
</tr>
</thead>
</table>

### Course Cancellation
Provide the Reason for Course Cancellation:

### Other
Explain:
We are asking for this to be a grad course, with the base being 4EA3. There will be extra work from the instructor to qualify this as a grad course.

#### Brief Description for Calendar
- Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.
Technical and policy issues involved in the production and the appraisal of environmental impact assessments. Two lectures, one lab; one term.

#### Content/Rationale
- Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. STATEMENT OF PURPOSE  (How does the course fit into the department’s program?)</td>
<td></td>
</tr>
<tr>
<td>2. EXPECTED ENROLMENT:</td>
<td>1</td>
</tr>
<tr>
<td>3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):</td>
<td>lectures</td>
</tr>
<tr>
<td>4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION: (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)</td>
<td>lab debate 6%, short paper 18%, midterm 12%, final exam 24%, term paper for 600-level students 40%</td>
</tr>
<tr>
<td>5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).</td>
<td>No</td>
</tr>
<tr>
<td>6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?</td>
<td>Yes</td>
</tr>
</tbody>
</table>

PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Ann Wallace  Email: wallann@mcmaster.ca  Extension: 23535  Date: October 21/11

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

SGS/medy
1. BASIC COURSE INFORMATION

Course: Environmental Assessment Geog/Earth Sc/Envir Sc 4EA3  
Lecture Time: Monday and Thursday, 4:30-5:20  
Lecture Location: ABB 102  
Labs:  
Section 1: Wednesday, 1:30 - 2:20 in BSB B138  
Section 2: Thursday, 3:30 - 4:20 in BSB B138  
Section 3: Tuesday, 10:30 - 11:20 in BSB B138  
Section 4: Monday, 3:30 - 4:20 in BSB B142  

Prerequisites: Geog 2EI3, Earth Sc 2EI3 or registration inHonours Biology, a Civil Engineering program, an Engineering and Society program or an Honours program in the School of Geography and Earth Sciences  

Note: The last day to withdraw and get a refund of fees is September 21

2. INSTRUCTOR INFORMATION

Instructor: Dr. Maureen Padden  
Office: GSB 205  
Phone: (905) 525-9140 ext. 20118  
Email: paddenm@mcmaster.ca  
Office Hours: Monday, 10-12

3. VERY IMPORTANT DATES

Lecture Midterm: Thursday, Oct. 15 (in class)  
Final Exam: TBA (Scheduled by the Registrar)

4. COURSE CONTENT, OBJECTIVES AND ORGANIZATION

Course Content and Objectives
Environmental assessments are widely applied tools in the environmental industry in Canada to identify and mitigate potential negative consequences of proposed projects. We’ll explore the stages and techniques used in environmental assessments in Canada and apply them to both completed environmental assessments and current, on-going assessments.

The learning outcomes for this course are summarized below:

1. You will understand the process of environmental assessments in Canada.
2. You will learn to critically assess the information provided to the public about environmental assessments.
3. You will be able to state a persuasive opinion on a current environmental project and back it up with an evidence-based argument.

**Course Organization**
This course involves two 50-minute lectures per week and one 50-minute lab period. Assessment will be in the form of two tests (one during the semester and one in the final exam period), lab debates and a major project. The project will be peer-reviewed before final submission. The lecture schedule for this course outlines what topics will be covered and when they will be covered during the term. Please note that the lecture schedule will likely be modified throughout the term as some topics may not be finished in the predicted lecture time.

### Geog/Earth Sc/Envir Sc 4EA3 Lecture Schedule*

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Date</th>
<th>Chapter</th>
<th>Topic</th>
<th>Labs</th>
<th>Hand-in?</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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<td>Sept. 10</td>
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<td>Introduction to course</td>
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<tr>
<td>2</td>
<td>2</td>
<td>Sept. 15</td>
<td>1</td>
<td>EIA aims and objectives</td>
<td>1 Using Env. Registries</td>
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<td></td>
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<td>3</td>
<td>4</td>
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<td>EIA in Canada</td>
<td>2 Debate I</td>
<td>marked in lab</td>
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<td>Sept. 24</td>
<td>3</td>
<td>EIA classification</td>
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<tr>
<td>4</td>
<td>6</td>
<td>Sept. 29</td>
<td>4</td>
<td>Methods I</td>
<td>3 Debate II</td>
<td>marked in lab</td>
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<tr>
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<td>Oct. 1</td>
<td>4</td>
<td>Methods II</td>
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<td>5</td>
<td>8</td>
<td>Oct. 6</td>
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<td>Screening</td>
<td>4 Debate III</td>
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<td></td>
<td>Review</td>
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<td>11</td>
<td>Oct. 15</td>
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<td>Midterm</td>
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<td>7</td>
<td>12</td>
<td>Oct. 20</td>
<td>7</td>
<td>Prediction I</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>13</td>
<td>Oct. 22</td>
<td>7</td>
<td>Prediction II</td>
<td></td>
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<td>Oct. 27</td>
<td>8</td>
<td>Impact Significance</td>
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<td>15</td>
<td>Oct. 29</td>
<td>9</td>
<td>Managing Impacts I</td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>16</td>
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<td>9</td>
<td>Managing Impacts II</td>
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<td>Post-decision Monitoring II</td>
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<td>20</td>
<td>Nov. 17</td>
<td>11</td>
<td>Cumulative Effects II</td>
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<td>24</td>
<td>Dec. 3</td>
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<td>Review</td>
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</tr>
</tbody>
</table>

*Lecture schedule may be subject to change throughout the term.*
5. TEXTBOOK AND RESOURCE MATERIALS

**Recommended Text Books:**
Introduction to Environmental Impact Assessment: A Guide to Principles and Practice by Bram F. Noble (available in University Bookstore)

**Resource Materials:**
Lecture notes (available on the course website)
Online web resource links may be posted on the course website

6. CLASSROOM CONDUCT

This is a large class but you are not a small part of it! To make our time together as valuable as possible, we both have to work hard at it. It is important that the classroom and lab learning environment is one of mutual respect and I will do everything I can to create that environment for you. Please note the following basic statements below for my expectations of student conduct.

1. Every student has the right to learn as well as the responsibility not to deprive others of their right to learn.
2. Every student is accountable for his or her own actions.
3. Please arrive on time and do not schedule other activities during class or lab time. Late arrivals and early departures are very disruptive.
4. In order to get the most out of this class please attend all scheduled classes and labs. I will try to make class as interesting and informative as possible, but I can’t learn the material for you.
5. Please let me know immediately if you have a problem that is preventing you from performing satisfactorily in this class.

Below is what you can expect of me this semester.

1. I will treat you with respect and I will try to make my expectations clear.
2. I will be respectful of your schedule and start and end class on time.
3. I will be available to you for help outside of classroom times should you want to review concepts that you do not understand or learn material beyond the course content.
4. I will manage classroom disruptions to the best of my ability so that you have a safe and distraction-free learning environment.

7. ASSESSMENT AND GRADING

The distribution of marks in this course is as listed below:

- **In-lab Debate** 10% (9% for debate performance, 1% for feedback)
- **Midterm Test** 20%
- **Assignment** 30%
- **Final Exam** 40% (all course material – cumulative)
Final grades will be changed should an error in grade addition or grade entry occur. If there is an error in your final grade contact the instructor immediately.

The Registrar schedules all deferred final exams. If you miss or leave an examination for medical reasons you must submit a Petition for Special Consideration form with supporting documentation of illness, personal or family reasons, to the Office of the Associate Dean normally within five working days of the missed examination.

8. ACADEMIC DISHONESTY

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at

http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrates only three forms of academic dishonesty: Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained. Improper collaboration in group work. Copying or using unauthorized aids in tests and examinations.

9. ETHICS STATEMENT

If you agree, your course work may be used for research purposes. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested.

10. COURSE MODIFICATIONS

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

If you have any questions regarding the course outline please contact me at any time. I am looking forward to working with you this semester!

Sincerely,

Maureen Padden
### PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for **ALL** course changes. 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/PROGRAM
- **KINESIOLOGY**

### COURSE TITLE
- Cardiac Rehabilitation

<table>
<thead>
<tr>
<th>COURSE NUMBER</th>
<th>KIN 706</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE CREDIT</td>
<td>FULL COURSE ( )</td>
</tr>
</tbody>
</table>

### INSTRUCTOR(S)
- Neil McCARTNEY

### PREREQUISITE(S)
- N/A

### NATURE OF RECOMMENDATION *(PLEASE CHECK APPROPRIATE BOX)*

<table>
<thead>
<tr>
<th>NEW COURSE</th>
<th>DATE TO BE OFFERED</th>
<th>WAS THE PROPOSED COURSE OFFERED ON DEAN’S APPROVAL? IF YES, PROVIDE THE DATE:</th>
</tr>
</thead>
</table>

**Will the course be cross-listed with another department?** If yes, attach to this form any relevant correspondence with the other department(s). **Note:** Cross-listing of courses requires written approval from each department and faculty concerned.

### CHANGE IN COURSE TITLE
- Provide the **NEW** Course Title:

### CHANGE IN COURSE DESCRIPTION
- **600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form**

### CHANGE TO FULL COURSE
- **Provide the new course title:**

### COURSE CANCELLATION
- X **Provide the reason for course cancellation:**
  - N McCARTNEY is no longer at McMaster; similar information is offered via KIN 704 (MacDONALD) and MEDSCI 706. Course was last taught in 2006-07 academic year.

### OTHER CHANGES
- **Explain:**

### BRIEF DESCRIPTION FOR CALENDAR - Provide a brief description *(maximum 6 lines)* to be included in the Graduate Calendar.

### CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. **STATEMENT OF PURPOSE**  (How does the course fit into the department’s program?)

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL**  (i.e., lectures, seminars):

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION**  (percentage breakdown, if possible):  (For 600-level course, indicate the **Extra Work** to be required of graduate students, i.e., exams, essays, etc.)

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?  
   IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

| Name: Stuart PHILLIPS | Email: phillis | Extension: 24465 | Date: January 11, 2012 |

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

SGS/Medy/2011
SCHOOL OF GRADUATE STUDIES

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for ALL course changes. 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/PROGRAM: KINESIOLOGY

COURSE TITLE: Exercise & Skeletal Development : A Lifespan Perspective

COURSE NUMBER: KIN 710

COURSE CREDIT

| FULL COURSE ( ) | HALF COURSE (X) | QUARTER (MODULE) ( ) |

INSTRUCTOR(S): C Joseph BLIMKIE

PREREQUISITE(S): N/A

NATURE OF RECOMMENDATION: (PLEASE CHECK APPROPRIATE BOX)

NEW COURSE

DATE TO BE OFFERED:

Was the proposed course offered on Dean’s approval? If yes, provide the date:

Will the course be cross-listed with another department? If yes, attach to this form any relevant correspondence with the other department(s). Note: Cross-listing of courses requires written approval from each department and faculty concerned.

CHANGE IN COURSE TITLE

Provide the NEW course title:

CHANGE IN COURSE DESCRIPTION

600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

CHANGE TO FULL COURSE

CHANGE TO HALF COURSE

CHANGE TO QUARTER COURSE

COURSE CANCELLATION: X

Provide the reason for course cancellation:

CJ BLIMKIE is no longer teaching this course; similar information is offered via MS 747, taught by B TIMMONS, who is an associate member of Kinesiology. Course was last taught in 2007-08 academic year.

OTHER CHANGES

EXPLAIN:

BRIEF DESCRIPTION FOR CALENDAR - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?**
   If YES, please attach to this form any relevant correspondence with the other department(s).

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

| Name: Stuart PHILLIPS | Email: phillis | Extension: 24456 | Date: January 11, 2012 |

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

SGS/Medy/2011
**SCHOOL OF GRADUATE STUDIES**

**RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES**

**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

1. This form must be completed for **ALL** course changes. 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/PROGRAM**
Mathematics and Statistics

**COURSE TITLE**
Financial Markets and Derivatives

**COURSE NUMBER**
6FM3

<table>
<thead>
<tr>
<th>COURSE CREDIT</th>
<th>FULL COURSE ( )</th>
<th>HALF COURSE (X)</th>
<th>QUARTER (MODULE) ( )</th>
</tr>
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</table>

**INSTRUCTOR(S)**
Grasselli, Hurd, Lovinski, Pirvu

**PREREQUISITE(S)**

**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

<table>
<thead>
<tr>
<th>NEW COURSE</th>
<th>Date to be Offered:</th>
<th>Date Offered on Dean’s Approval:</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Fall 2012</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?** No

**IF YES, PROVIDE THE DATE:**

**IF YES, ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).** Note: Cross-listing of courses requires written approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**

**PROVIDE THE NEW COURSE TITLE:**

**CHANGE IN COURSE DESCRIPTION**

600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

**CHANGE TO FULL COURSE**

**CHANGE TO HALF COURSE**

**CHANGE TO QUARTER COURSE**

**COURSE CANCELLATION**

**PROVIDE THE REASON FOR COURSE CANCELLATION:**

**OTHER CHANGES**

**EXPLAIN:**

**BRIEF DESCRIPTION FOR CALENDAR**

Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

Modelling of options, futures, interest rate securities and other financial derivatives in continuous time using Brownian motion and stochastic calculus. Topics include risk-neutral pricing, the Black-Scholes framework, dynamic hedging, volatility and risk.

**CONTENT/RATIONALE**

Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

Same as for 4FM3.
1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

   This course replaces the course 6K03. The change was necessary because of a new undergraduate program in Financial Mathematics, which led to the restructuring of the course 4K03.

2. **EXPECTED ENROLMENT:**

   5

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

   lectures

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

   The Extra Work for Graduate students will consist of enriched Assignments, Presentations and Projects

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?**
   **IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

   No

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

   **PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

   Name: Manfred Kolster   Email: kolster@mcmaster.ca   Extension: 27243   Date: 19/01/2012

---

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

SGS/Medy/2011
### School of Graduate Studies

**Recommendation for Change in Graduate Curriculum - For Change(s) Involving Courses**

**Please read the following notes before completing this form:**

1. This form must be completed for **ALL** course changes. 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.

<table>
<thead>
<tr>
<th><strong>Department/Program</strong></th>
<th>Mathematics and Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Title</strong></td>
<td>Topics in Differential Equations</td>
</tr>
<tr>
<td><strong>Course Number</strong></td>
<td>6FT3</td>
</tr>
<tr>
<td><strong>Course Credit</strong></td>
<td>FULL COURSE ( )</td>
</tr>
<tr>
<td><strong>Instructor(s)</strong></td>
<td>Alama, Bronsard, Craig, Kevlahan, Pelinovski, Protas</td>
</tr>
</tbody>
</table>

**Nature of Recommendation (Please Check Appropriate Box):**

- **New Course**: X
- **Date to be Offered**: Fall 2012
- **Was the Proposed Course Offered on Dean’s Approval?** No
- **If Yes, Provide the Date:**

**Will the Course be Cross-listed with Another Department?**

- No

**If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s).**

**Note:** Cross-listing of courses requires written approval from each department and faculty concerned.

**Change in Course Title**: Provide the new course title.

**Change in Course Description**: 600-Level Course (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

**Change to Full Course**

**Change to Half Course**

**Change to Quarter Course**

**Course Cancellation**: Provide the reason for course cancellation.

**Other Changes**: Explain:

**Brief Description for Calendar** - Provide a brief description (**maximum 6 lines**) to be included in the Graduate Calendar.

- Topics to be selected from the theory of ordinary differential equations, bifurcation and stability, and partial differential equations.
- Three lectures; one term

**Content/Rationale** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

- Same as for 4FT3
**1. STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

This course replaces the course 6G03. The change was necessary because of new undergraduate programs in Financial Mathematics and Mathematical Biology, which led to the restructuring of the course 4G03.

**2. EXPECTED ENROLMENT:**

5

**3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

lectures

**4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

The Extra Work for Graduate students will consist of enriched Assignments, Presentations and Projects.

**5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?**

If yes, please attach to this form any relevant correspondence with the other department(s).

No

**6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

Please provide the contact information for the recommended change:

Name: Manfred Kolster  Email: Kolster@mcmaster.ca  Extension: 27243  Date: 19/01/2012

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

SGS/Medy/2011
**SCHOOL OF GRADUATE STUDIES**

RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES

---

**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

1. This form must be completed for **ALL** course changes. 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).
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**DEPARTMENT/PROGRAM**
Mathematics and Statistics

**COURSE TITLE**
Mathematical Biology

**COURSE NUMBER**
6MB3

**COURSE CREDIT**

<table>
<thead>
<tr>
<th></th>
<th>FULL COURSE</th>
<th>HALF COURSE</th>
<th>QUARTER (MODULE)</th>
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<tbody>
<tr>
<td>INSTRUCTOR(S)</td>
<td>Bolker, Earn, Wolkowitz</td>
<td></td>
<td></td>
</tr>
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</table>

**PREREQUISITE(S)**

---

**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

<table>
<thead>
<tr>
<th>NEW COURSE</th>
<th>DATE TO BE OFFERED:</th>
<th>WAS THE PROPOSED COURSE OFFERED ON DEAN’S APPROVAL?</th>
<th>IF YES, PROVIDE THE DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>Fall 2012</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?**

If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s). **Note:** Cross-listing of courses requires written approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**

**Provide the NEW Course Title:**

---

**CHANGE IN COURSE DESCRIPTION**

**600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form**

**CHANGE TO FULL COURSE**

**CHANGE TO HALF COURSE**

**CHANGE TO QUARTER COURSE**

---

**COURSE CANCELLATION**

**Provide the Reason for Course Cancellation:**

---

**OTHER CHANGES**

**Explain:**

---

**BRIEF DESCRIPTION FOR CALENDAR** - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

Population dynamics: models of discrete and continuous growth; competition and predation; epidemic models. Other topics selected by instructor.

Three lectures; one term

---

**CONTENT/RATIONALE** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

Same as 4MB3

---
1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

The new undergraduate program in Mathematical Biology created a course 4MB3. This is an opportunity to offer the course also to Graduate Students.

2. **EXPECTED ENROLMENT:**

5

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

Lectures

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the **Extra Work** to be required of graduate students, i.e., exams, essays, etc.)

The Extra Work for Graduate students will consist of enriched Assignments, Presentations and Projects.

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?**

   **IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

   NO

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Extension</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manfred Kolster</td>
<td><a href="mailto:kolster@mcmaster.ca">kolster@mcmaster.ca</a></td>
<td>27243</td>
<td>19/01/2012</td>
</tr>
</tbody>
</table>

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

SGS/Medy/2011
# Recommendation for Change in Graduate Curriculum - For Change(s) Involving Courses

**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/PROGRAM**

Mathematics and Statistics

**COURSE TITLE**

Dynamical systems

<table>
<thead>
<tr>
<th>COURSE NUMBER</th>
<th>COURSE CREDIT</th>
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</thead>
<tbody>
<tr>
<td>6G03</td>
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</tbody>
</table>

**INSTRUCTOR(S)**


**PREREQUISITE(S)**


**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

<table>
<thead>
<tr>
<th>NEW COURSE</th>
<th>DATE TO BE OFFERED</th>
<th>WAS THE PROPOSED COURSE OFFERED ON DEAN’S APPROVAL?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>IF YES, PROVIDE THE DATE:</td>
</tr>
</tbody>
</table>

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?**  
If yes, attach to this form any relevant correspondence with the other department(s). Note: Cross-listing of courses requires written approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**

Provide the NEW Course Title:

**CHANGE IN COURSE DESCRIPTION**

600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

**CHANGE TO FULL COURSE**

**CHANGE TO HALF COURSE**

**CHANGE TO QUARTER COURSE**

**COURSE CANCELLATION**

X Provide the Reason for Course Cancellation:  
This course is being replaced by 6FT3

**OTHER CHANGES**

Explain:

**BRIEF DESCRIPTION FOR CALENDAR** - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

**CONTENT/RATIONALE** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
<table>
<thead>
<tr>
<th></th>
<th>Statement of Purpose (How does the course fit into the department’s program?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Expected Enrolment:</td>
</tr>
<tr>
<td>3</td>
<td>Describe in detail the method of presentation of course material (i.e., lectures, seminars):</td>
</tr>
<tr>
<td>4</td>
<td>Describe in detail the method of evaluation (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)</td>
</tr>
<tr>
<td>5</td>
<td>To prevent overlap, is a course in the same or a related area offered in another department? If yes, please attach to this form any relevant correspondence with the other department(s).</td>
</tr>
<tr>
<td>6</td>
<td>If the course is intended primarily for students outside your department, do you have the support of the department/program concerned?</td>
</tr>
</tbody>
</table>

**Please provide the contact information for the recommended change:**

Name: Manfred Kolster   Email: kolster@mcmaster.ca   Extension: 27243   Date: 19/01/2012

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

SGS/Medy/2011
# SCHOOL OF GRADUATE STUDIES

## RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES

---

### 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/PROGRAM

| Mathematics and Statistics |

### COURSE TITLE

| Mathematics of Finance |

### COURSE NUMBER

| 6K03 |

### COURSE CREDIT

<table>
<thead>
<tr>
<th>FULL COURSE</th>
<th>HALF COURSE</th>
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<tbody>
<tr>
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<td>X</td>
<td></td>
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</tbody>
</table>

### INSTRUCTOR(S)

|                  |

### PREREQUISITE(S)

|                  |

### NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)

**NEW COURSE**

<table>
<thead>
<tr>
<th>Date to be Offered</th>
<th>Was the Proposed Course Offered on Dean’s Approval?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Will the Course be Cross-listed with Another Department?**

**If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s).**

**Note:** Cross-listing of courses requires written approval from each department and faculty concerned.

### CHANGE IN COURSE TITLE

| Provide the NEW Course Title: |

### CHANGE IN COURSE DESCRIPTION

**600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form**

### CHANGE TO FULL COURSE

<table>
<thead>
<tr>
<th>Change to Half Course</th>
<th>Change to Quarter Course</th>
</tr>
</thead>
</table>

### COURSE CANCELLATION

- X

<table>
<thead>
<tr>
<th>Provide the Reason for Course Cancellation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This course is being replaced by 6FM3</td>
</tr>
</tbody>
</table>

### OTHER CHANGES

**Explain:**

### BRIEF DESCRIPTION FOR CALENDAR - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

### CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?** If yes, please attach to this form any relevant correspondence with the other department(s).

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

<table>
<thead>
<tr>
<th>Name</th>
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<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Manfred Kolster</td>
<td><a href="mailto:Kolster@mcmaster.ca">Kolster@mcmaster.ca</a></td>
<td>27243</td>
<td>19/01/2012</td>
</tr>
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</table>

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

SGS/Medy/2011
# School of Graduate Studies

**Recommendation for Change in Graduate Curriculum - For Change(s) Involving Courses**

**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**
1. This form must be completed for ALL course changes. 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: espirit@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/Program
- **MSc (Statistics)**

## Course Title
- **Nonparametric Methods in Statistics**

<table>
<thead>
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<th>Course Number</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>GU03</td>
<td>FULL COURSE ( )</td>
</tr>
</tbody>
</table>

### Instructor(s)

### Prerequisite(s)

## Nature of Recommendation (Please check appropriate box)

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<tr>
<th>New Course</th>
<th>Date to be Offered</th>
<th>Was the Proposed Course Offered on Dean's Approval?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>If Yes, Provide the Date:</td>
</tr>
</tbody>
</table>

Will the Course be Cross-listed with Another Department? If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s). Note: Cross-listing of courses requires written approval from each department and faculty concerned.

## Change in Course Title & Description
- Provide the **New Course** Title:
- **600-Level Course** (Undergraduate course for graduate credit) Please see #4 on page 2 of this form.

## Change to Full Course
- **Change to Full Course**
- **Change to Half Course**
- **Change to Quarter Course**

### Course Cancellation
- **Provide the Reason for Course Cancellation:**
- There was a course Stats 4103 some years ago, and this was offered as GU03 for graduate students. But, GU03 got cancelled some years ago, but GU03 got accidentally left in the calendar, so it needs to be removed.

### Other Changes
- **Explain:**

## Brief Description for Calendar - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar.

## Content/Rationale - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. **STATEMENT OF PURPOSE** (How does the course fit into the department's program?)

2. **EXPECTED ENROLMENT:**

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the **Extra Work** to be required of graduate students, i.e., exams, essays, etc.)

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).**

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

<table>
<thead>
<tr>
<th>Name:</th>
<th>Email:</th>
<th>Extension:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.BalaKrishnan</td>
<td><a href="mailto:balakrishnan@ryerson.ca">balakrishnan@ryerson.ca</a></td>
<td>23420</td>
<td>January 11, 2012</td>
</tr>
</tbody>
</table>

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

SGS/Medy/2011
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**
Medical Physics and Applied Radiation Sciences

**NAME OF PROGRAM**
Radiation Sciences (Medical Physics)

<table>
<thead>
<tr>
<th>PROGRAM DEGREE</th>
<th>Ph.D. ( )</th>
<th>M.A. ( )</th>
<th>M.A.Sc. ( )</th>
<th>M.B.A. ( )</th>
<th>M. Eng. ( )</th>
<th>M.Sc. (x)</th>
<th>Diploma Program ( )</th>
<th>Other (Specify)</th>
</tr>
</thead>
</table>

**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

**OTHER CHANGES**

**EXPLAIN:**

**DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:**

Students entering the program are required to take Medical Physics 6U03. This course covers Radiation Biology and is a core topic in the program. Students who have taken Medical Physics 4U03 during their undergraduate career are not required to repeat this course.

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

Students will be required to take Medical Physics 773 to satisfy the Radiation Biology content of the program rather than Medical Physics 6U03. The program change will consist of replacing Medical Physics 6U03 with Medical Physics 773. For the next one or two years there will still be students who have taken Medical Physics 4U03, and they will not be required to take Medical Physics 773.
**RATIONALE FOR THE RECOMMENDED CHANGE:**

Recent changes to the undergraduate program have changed Medical Physics *4U03/*6U03 to Medical Physics *4U03. Since Medical Physics *773 covers the same material as the Medical Physics *6U03 but is delivered at a higher level it is more appropriate that graduate students take the 700 level course that the 600 level course. This also allows Medical Physics *4U03 to be delivered exclusively as an upper level undergraduate course and may appeal to a wider group of students.

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

September 2012

**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:**

The M.Sc. in Radiation Sciences (Medical Physics) requires that a candidate complete satisfactorily the courses Medical Physics *775, Medical Physics *773 and one other half course at the 700-level. Students who have not satisfactorily completed Medical Physics *6R03 must also complete this course satisfactorily. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Tom Farrell  
Email: tom.farrell@jcc.hhsc.ca  
Extension: 67014  
Date: Jan 6, 2012

If you have any questions regarding this form, please contact Medy Espiritu, Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.
## 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: espirit@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
Medical Physics and Applied Radiation Sciences

### NAME OF PROGRAM
Radiation Sciences (Radiation Biology)

### PROGRAM DEGREE

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### 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 CHANGES
EXPLAIN:

### DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Students entering the program are required to take Medical Physics 6U03. This course covers Radiation Biology and is a core topic in the program. Students who have taken Medical Physics 4U03 during their undergraduate career are not required to repeat this course.

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

Students will be required to take Medical Physics 773 to satisfy the Radiation Biology content of the program rather than Medical Physics 6U03. The program change will consist of replacing Medical Physics 6U03 with Medical Physics *773. For the next one or two years there will still be students who have taken Medical Physics 4U03/6U03, and they will not be required to take Medical Physics 773.
**RATIONALE FOR THE RECOMMENDED CHANGE:**

Recent changes to the undergraduate program have changed Medical Physics *4U03/*6U03 to Medical Physics *4U03. Since Medical Physics *773 covers the same material as the Medical Physics *6U03 but is delivered at a higher level it is more appropriate that graduate students take the 700 level course that the 600 level course. This also allows Medical Physics *4U03 to be delivered exclusively as an upper level undergraduate course and may appeal to a wider group of students..

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

September 2012

**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:**

The M.Sc. in Radiation Sciences (Radiation Biology) requires that a candidate complete satisfactorily the course Medical Physics *773, and one other half course at the 700 level which can be either Medical Physics *779 or Medical Physics *780. Students who have not satisfactorily completed Medical Physics *6B03 must also complete this course satisfactorily. Candidates for this M.Sc. are also required to present and defend a thesis, which shall embody the results of original research.

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Tom Farrell      Email: tom.farrell@jcc.hhsc.ca      Extension: 67014      Date: Jan 6, 2012

If you have any questions regarding this form, please contact Medy Espiritu, Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.
### 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: espiritui@mcmaster.ca).
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<td>Diploma Program ( )</td>
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<td>Other (Specify)</td>
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**DEPARTMENT**

**Medical Physics and Applied Radiation Sciences**

**NAME OF PROGRAM**

**Health and Radiation Physics**

**PROGRAM DEGREE**

- Ph.D. ( )
- 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**
- **Change in Comprehensive Examination Procedure**
- **Change in Course Requirements**
- **Change in the Description of a Section in the Graduate Calendar**

<table>
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<th>Change in Admission Requirements</th>
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<th>Change in Course Requirements</th>
<th>Change in the Description of a Section in the Graduate Calendar</th>
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**Other Changes**

**EXPLAIN:**

**Describe the Existing Requirement/Procedure:**

Students entering the program are required to take Medical Physics 6U03. This course covers Radiation Biology and is a core topic in the program. Students who have taken Medical Physics 4U03 during their undergraduate career are not required to repeat this course.

**Provide a Detailed Description of the Recommended Change (Attach additional pages if space is not sufficient):**

Students will be required to take Medical Physics 773 to satisfy the Radiation Biology content of the program rather than Medical Physics *6U03*. The program change will consist of replacing Medical Physics 6U03 with Medical Physics *773*. For the next one or two years there will still be students who have taken Medical Physics 4U03/6U03, and they will not be required to take Medical Physics 773.
RATIONALE FOR THE RECOMMENDED CHANGE:
Recent changes to the undergraduate program have changed Medical Physics *4U03/*6U03 to Medical Physics *4U03. Since Medical Physics *773 covers the same material as the Medical Physics *6U03 but is delivered at a higher level it is more appropriate that graduate students take the 700 level course that the 600 level course. This also allows Medical Physics *4U03 to be delivered exclusively as an upper level undergraduate course and may appeal to a wider group of students.

PROVIDE IMPLEMENTATION DATE: *(Implementation date should be at the beginning of the academic year)*
September 2012

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:
Complete satisfactorily the courses: Medical Physics *772, Medical Physics *773, Medical Physics *775, and Medical Physics *776. Students must complete satisfactorily one additional *700-level course from the following list: Medical Physics *770, Medical Physics *771 or Medical Physics *778. Students who have not satisfactorily completed Medical Physics *6R03 must also complete this course satisfactorily.

CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:
Name: Tom Farrell  Email: tom.farrell@jcc.hhsc.ca  Extension: 67014  Date: Jan 6, 2012

If you have any questions regarding this form, please contact Medy Espiritu, Assistant Secretary and SynApps System Administrator, School of Graduate Studies, extension 24204.
**PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:**

1. This form must be completed for **ALL** course changes. 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/PROGRAM**  
Medical Physics and Applied Radiation Sciences

**COURSE TITLE**  
Radiation Biology

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<th>COURSE NUMBER</th>
<th>COURSE CREDIT</th>
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<tr>
<td><em>6U03</em></td>
<td><strong>FULL COURSE ( )</strong> <strong>HALF COURSE ( x )</strong> <strong>QUARTER (MODULE) ( )</strong></td>
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</table>

**INSTRUCTOR(S)**  

**PREREQUISITE(S)**  

---

**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

<table>
<thead>
<tr>
<th>NEW COURSE</th>
<th>DATE TO BE OFFERED:</th>
<th>WAS THE PROPOSED COURSE OFFERED ON DEAN’S APPROVAL? If Yes, Provide the Date:</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

**WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT?**  
**If Yes, Attach to this Form Any Relevant Correspondence with the Other Department(s).**  
**Note:** Cross-listing of courses requires written approval from each department and faculty concerned.

**CHANGE IN COURSE TITLE**  
Provide the **NEW** Course Title:

**CHANGE IN COURSE DESCRIPTION**  
600-LEVEL COURSE *(Undergraduate course for graduate credit)* Please see #4 on page 2 of this form

**CHANGE TO FULL COURSE**  
**CHANGE TO HALF COURSE**  
**CHANGE TO QUARTER COURSE**

**COURSE CANCELLATION**  
**x**  
Provide the **Reason for Course Cancellation:**  
Medical Physics *773 covers the same material as the Medical Physics *6U03 but is delivered at a higher level it is more appropriate that graduate students take the 700 level course and this will reduce duplication.

**OTHER CHANGES**

**EXPLAIN:**

---

**BRIEF DESCRIPTION FOR CALENDAR**  
Provide a brief description *(maximum 6 lines)* to be included in the Graduate Calendar.

**CONTENT/RATIONALE**  
Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.
1. STATEMENT OF PURPOSE (How does the course fit into the department’s program?)

2. EXPECTED ENROLMENT:

3. DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL (i.e., lectures, seminars):

4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)

5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).

6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?

PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Tom Farrell   Email: tom.farrell@jcc.hhsc.ca   Extension: 67014   Date: Jan 6, 2012

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

SGS/Medy/2011
SCHOOL OF GRADUATE STUDIES
RECOMMENDATION FOR CHANGE IN GRADUATE CURRICULUM - FOR CHANGE(S) INVOLVING COURSES

PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:
1. This form must be completed for ALL course changes. 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.

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<thead>
<tr>
<th>DEPARTMENT/PROGRAM</th>
<th>Physics and Astronomy</th>
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</thead>
<tbody>
<tr>
<td>COURSE TITLE</td>
<td>Mathematical Introduction to Fluid Mechanics</td>
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<tr>
<td>COURSE NUMBER</td>
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<td>COURSE CREDIT</td>
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<td>HALF COURSE ( )</td>
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<td>INSTRUCTOR(S)</td>
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<td>PREREQUISITE(S)</td>
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**NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)**

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<th>NEW COURSE</th>
<th>DATE TO BE OFFERED:</th>
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</table>

WILL THE COURSE BE CROSS-LISTED WITH ANOTHER DEPARTMENT? IF YES, ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S). NOTE: CROSS-LISTING OF COURSES REQUIRES WRITTEN APPROVAL FROM EACH DEPARTMENT AND FACULTY CONCERNED.

CHANGE IN COURSE TITLE

PROVIDE THE NEW COURSE TITLE:

CHANGE IN COURSE DESCRIPTION

600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

CHANGE TO FULL COURSE

CHANGE TO HALF COURSE

CHANGE TO QUARTER COURSE

COURSE CANCELLATION

PROVIDE THE REASON FOR COURSE CANCELLATION:

OTHER CHANGES

EXPLAIN:
The only correction to be made is that the descriptions for #715 and #716 need to be swapped. The content in each description is correct. This change does not affect the calendar entry for Mathematics 749 (cross-reg.)

BRIEF DESCRIPTION FOR CALENDAR - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar. Please see above.

CONTENT/RATIONALE - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

N/A
1. **STATEMENT OF PURPOSE** (How does the course fit into the department’s program?)
   N/A

2. **EXPECTED ENROLMENT:**
   N/A

3. **DESCRIBE IN DETAIL THE METHOD OF PRESENTATION OF COURSE MATERIAL** (i.e., lectures, seminars):
   N/A

4. **DESCRIBE IN DETAIL THE METHOD OF EVALUATION** (percentage breakdown, if possible): (For 600-level course, indicate the *Extra Work* to be required of graduate students, i.e., exams, essays, etc.)
   N/A

5. **TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT?**
   IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).
   N/A

6. **IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?**
   N/A

**PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Alan Chen   Email: chenal@mcmaster.ca   Extension: 27096   Date: January 18, 2012

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

SGS/Medy/2011
# Recommendation for Change in Graduate Curriculum - For Changes Involving Courses

## PLEASE READ THE FOLLOWING NOTES BEFORE COMPLETING THIS FORM:

1. This form must be completed for ALL course changes. 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/PROGRAM

Physics and Astronomy

## COURSE TITLE

Incompressible Computational Fluid Dynamics

## COURSE NUMBER

#716

### COURSE CREDIT

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<th>FULL COURSE</th>
<th>HALF COURSE</th>
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## INSTRUCTOR(S)

N/A

## PREREQUISITE(S)

N/A

## NATURE OF RECOMMENDATION (PLEASE CHECK APPROPRIATE BOX)

NEW COURSE

- Date to be Offered: N/A
- Was the Proposed Course Offered on Dean’s Approval? N/A
  - If Yes, Provide the Date: N/A

Will the Course be Cross-listed with Another Department? If Yes, Attach to This Form Any Relevant Correspondence with the Other Department(s). Note: Cross-listing of Courses requires written approval from each department and faculty concerned.

Provide the New Course Title:

### CHANGE IN COURSE TITLE

X

### CHANGE IN COURSE DESCRIPTION

600-LEVEL COURSE (Undergraduate course for graduate credit) Please see #4 on page 2 of this form

### CHANGE TO FULL COURSE

### CHANGE TO HALF COURSE

### CHANGE TO QUARTER COURSE

## COURSE CANCELLATION

Provide the Reason for Course Cancellation:

### COURSE CANCELLATION

X

### OTHER CHANGES

EXPLAIN:
The only correction to be made is that the descriptions for #715 and #716 need to be swapped. The content in each description is correct. This change does not affect the calendar entry for Mathematics 749 (cross-reg.)

**BRIEF DESCRIPTION FOR CALENDAR** - Provide a brief description (maximum 6 lines) to be included in the Graduate Calendar, please see above

**CONTENT/RATIONALE** - Provide a brief description, i.e., outline the topics or major sub-topics, and indicate the principal texts to be used.

N/A
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<td>4. DESCRIBE IN DETAIL THE METHOD OF EVALUATION (percentage breakdown, if possible): (For 600-level course, indicate the Extra Work to be required of graduate students, i.e., exams, essays, etc.)</td>
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<td>5. TO PREVENT OVERLAP, IS A COURSE IN THE SAME OR A RELATED AREA OFFERED IN ANOTHER DEPARTMENT? IF YES, PLEASE ATTACH TO THIS FORM ANY RELEVANT CORRESPONDENCE WITH THE OTHER DEPARTMENT(S).</td>
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<td>6. IF THE COURSE IS INTENDED PRIMARILY FOR STUDENTS OUTSIDE YOUR DEPARTMENT, DO YOU HAVE THE SUPPORT OF THE DEPARTMENT/PROGRAM CONCERNED?</td>
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PLEASE PROVIDE THE CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:

Name: Alan Chen  Email: chenal@mcmaster.ca  Extension: 27096  Date: January 18, 2012

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

SGS/Medy/2011
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.

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</tr>
<tr>
<td>CHANGE IN COMPREHENSIVE EXAMINATION PROCEDURE</td>
</tr>
<tr>
<td>CHANGE IN COURSE REQUIREMENTS</td>
</tr>
</tbody>
</table>

| CHANGE IN THE DESCRIPTION OF A SECTION IN THE GRADUATE CALENDAR EXPLAIN: |

| OTHER CHANGES | EXPLAIN: Simply delete the sentence in the Graduate Calendar (currently page 553) that states that "Applicants are required to submit the results of the Graduate Record Examination (verbal and quantitative).” |

DESCRIBE THE EXISTING REQUIREMENT/PROCEDURE:

Students are required to submit the results of the GRE exam (verbal and quantitative) with their application to the program.

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

Eliminate the requirement that applicants to our graduate program are required to submit the results of the Graduate Record Examination (verbal and quantitative).
**RATIONALE FOR THE RECOMMENDED CHANGE:**

For many years we have required applicants to submit results from the GRE with their application. However, over the past several years a significant number of our faculty (principally those in more biologically oriented areas of psychology) have found that the number of qualified applicants has been dropping steadily. They have noted that they are competing for applicants with many other programs that do not have a GRE requirement, and have indeed first-hand knowledge of having lost potentially good applicants to those programs, at least in part because of the GRE requirement. Although some of our faculty continue to believe that the GRE offers useful information about applicants, all of our faculty felt that retaining it as a firm requirement of all applicants is untenable given the harm it is doing to some research programs.

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

Beginning of the academic year, 2012-13

**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:**

Simply delete the sentence in the Graduate Calendar (currently page 553) that states that "Applicants are required to submit the results of the Graduate Record Examination (verbal and quantitative)."

**CONTACT INFORMATION FOR THE RECOMMENDED CHANGE:**

Name: Bruce Milliken  
Email: millike@mcmaster.ca  
Extension: x24361  
Date: January 20, 2012

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

SGS/Medy/2011