

## Request for Calendar Change Form

Tracking No:  
(Senate Secretary's Office  
use only)  
Date:

|      |                                  |                   |
|------|----------------------------------|-------------------|
| To   | Secretary of Senate              |                   |
| From | Name(Dean):                      | Faculty           |
|      |                                  | Graduate Studies? |
|      | Department the change relates to |                   |
|      | Chemistry                        |                   |
|      | Contact Person                   |                   |
|      | Dr. C. Gottardo                  |                   |

Is the proposed calendar change Graduate

**Instructions:**

1. In all cases please complete and attach section 1 and 2
2. If the calendar change affect other departments/schools/faculties complete and attach section 3
3. If the answer to any of the questions below is yes, explain. Attach separate sheets with reference to the question

- |  |                                 |   |
|--|---------------------------------|---|
| 1. Do the proposed changes affect other departments/ schools/faculties in terms of their calendar change?                                | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 2. Is a transition plan needed for student in progress?  | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 3. Are the proposed changes likely to affect student enrollment in your department/school/faculty?                                       | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 4. Are the proposed changes likely to affect student enrollment in other departments/schools/faculties at Lakehead University?           | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 5. Will the proposed changes require additional teaching space and/or teaching staff and/or equipment and/or other resources?            | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 6 Will the proposed changes affect existing teaching loads within your department/school/faculty?  | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 7. Will the proposed changes increase demand for teaching support services such as the library, computing services and technical staff ? | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 8. Will the proposed change require direct or in-kind support from outside the academic unit?  | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 9. Do the proposed changes include change in course(s) which is/are required core course(s) for a major?                                 | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 10. Do the proposed changes include a change in course which is service/required course(s) in another program?                           | Yes                             | No  |

11. Do the proposed changes include change in course(s) which is/are open elective available to any student in any program?  Yes  No

12. Do the proposed changes include change in course(s) which is/are elective in a major i.e. restricted to students in a major?  Yes  No

Signatures:

Date approved by faculty council

|   |
|---|
| Section 1   |
| Description of the Proposed Calendar Change:<br>Wording has been modified so that the PhD in Chemistry and Materials Science calendar entry uses the same terminology as found in the PhD general regulations section of Lakehead University. |
| Rationale of the Proposed Calendar Change(s):<br>(Corresponding to Section 2 where required)  |
| <br><br><br><br><br>  |

| Section 2  |  |
|--|--|
| Existing Calendar Entries:<br>(Page reference based on hard copy or URL based on electronic version of calendar)   | Proposed Calendar Entries/Addition/ Deletion<br>-If only addition, specify page number and placement in university calendar<br>-If only deletion, write Deleted  |
| <p>1 <input type="text"/></p> <p><a href="http://mycoursecalendar.lakeheadu.ca/pg771.html">http://mycoursecalendar.lakeheadu.ca/pg771.html</a></p> <p>Doctor of Philosophy (PhD) in Chemistry and Materials Science</p> <p>PHD (CHEMISTRY AND MATERIALS SCIENCE)</p> <p>Graduate Co-ordinator      G. Spivak<br/>Core Doctoral<br/>D. Alexandrov (Electrical Engineering),<br/>K. Butcher (Adjunct to Electrical Engineering),<br/>L. Catalan (Chemical Engineering) (Canada Research Chair),<br/>A. Chen (Chemistry) (Canada Research Chair),<br/>G. Das (Physics),<br/>W. Floriano (Chemistry),<br/>M. Gallagher (Physics),<br/>W. Gao (Civil Engineering),<br/>C. Gottardo (Chemistry),<br/>Z-H. Jiang (Chemistry),<br/>S.D. Kinrade (Chemistry),<br/>D. Law (Biology),<br/>B. Liao (Chemical Engineering),<br/>A. Linhananta (Physics),<br/>C.D. MacKinnon (Chemistry),<br/>R. Mawhinney (Chemistry),<br/>A. Reznik (Physics),<br/>O. Rubel (Adjunct to Physics),<br/>G. Spivak (Chemistry),<br/>Z. Suntres (NOSM),<br/>J. Th'ng (NOSM),<br/>D. Yang (Adjunct to Chemistry)</p> <p>Non-Core Membership<br/>M. Campbell (Adjunct to Chemistry),<br/>T. Laredo (Chemistry),<br/>M. Rappon (Chemistry)</p> <p>DOCTOR OF PHILOSOPHY IN CHEMISTRY AND MATERIALS SCIENCE (PhD)<br/>The PhD in Chemistry and Materials Science is a research-intensive graduate program focused on the intellectual development and advanced training of scientists in two fields of specialization - Physical Chemistry, the study</p> | <p>Doctor of Philosophy (PhD) in Chemistry and Materials Science</p> <p>PHD (CHEMISTRY AND MATERIALS SCIENCE)</p> <p>Graduate Co-ordinator      G. Spivak<br/>Core Doctoral<br/>D. Alexandrov (Electrical Engineering),<br/>K. Butcher (Adjunct to Electrical Engineering),<br/>L. Catalan (Chemical Engineering) (Canada Research Chair),<br/>A. Chen (Chemistry) (Canada Research Chair),<br/>G. Das (Physics),<br/>W. Floriano (Chemistry),<br/>M. Gallagher (Physics),<br/>W. Gao (Civil Engineering),<br/>C. Gottardo (Chemistry),<br/>Z-H. Jiang (Chemistry),<br/>S.D. Kinrade (Chemistry),<br/>D. Law (Biology),<br/>B. Liao (Chemical Engineering),<br/>A. Linhananta (Physics),<br/>C.D. MacKinnon (Chemistry),<br/>R. Mawhinney (Chemistry),<br/>A. Reznik (Physics),<br/>O. Rubel (Adjunct to Physics),<br/>G. Spivak (Chemistry),<br/>Z. Suntres (NOSM),<br/>J. Th'ng (NOSM),<br/>D. Yang (Adjunct to Chemistry)</p> <p>Non-Core Membership<br/>M. Campbell (Adjunct to Chemistry),<br/>T. Laredo (Chemistry),<br/>M. Rappon (Chemistry)</p> <p>DOCTOR OF PHILOSOPHY IN CHEMISTRY AND MATERIALS SCIENCE (PhD)<br/>The PhD in Chemistry and Materials Science is a research-intensive graduate program focused on</p> |

of physical principles which govern the behaviour and properties of chemical systems; and Molecular and Materials Science, the synthesis and characterization of novel compounds and materials.

#### ADMISSION REQUIREMENTS

Admission will be subject to the availability of a primary supervisor(s) for the student. Normally, an applicant to the program would be expected to have completed a master's degree in one of the fields of specialization (Physical Chemistry, or Molecular and Materials Science). Applicants who do not have a master's degree in one of the fields of specialization will be considered on a case-by-case basis and, if admitted, may have additional course requirements.

Students in the first year of a master's degree program in one of the fields of specialization may apply for transfer into the PhD program provided they have successfully completed two full course equivalents (2 FCEs) towards the master's degree and have had their research proposal approved by the Program Committee. These 2 FCEs cannot be counted towards the PhD.

#### ACADEMIC REGULATIONS

In addition to the Faculty of Graduate Studies Regulations governing doctoral (PhD) programs, the following regulations apply to students in the PhD in Chemistry and Materials Science program.

1. Program Coordinating Committee  
A Chemistry and Materials Science PhD Program Coordinating Committee, chaired by the Program Coordinator/Graduate Co-ordinator, provides overall direction for the Program.

2. Supervisory Committee  
The Supervisory Committee will consist of at least three members, of whom two are core faculty including the student's Principal Supervisor (Committee Chair), and Co-supervisor (if any). The Supervisory Committee will be chosen by the Program Coordinator in consultation with the Principal Supervisor and the student. Membership on the Committee may be altered to reflect changes in expertise/requirements, in consultation with the Program Coordinator. The Committee will meet with the student at least once every six months, and the student will submit a written summary of progress to the Committee at least once a year. The

the intellectual development and advanced training of scientists in two fields of specialization: Physical Chemistry, the study of physical principles which govern the behaviour and properties of chemical systems; and Molecular and Materials Science, the synthesis and characterization of novel compounds and materials.

#### ADMISSION REQUIREMENTS

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Students in the first year of a master's degree program in one of the fields of specialization may apply for transfer into the PhD program provided they have successfully completed two full course equivalents (2 FCEs) towards the master's degree and have had their research proposal approved by the Program Coordinating Committee. These 2 FCEs cannot be counted towards the PhD.

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1. Program Coordinating Committee  
A Chemistry and Materials Science PhD Program Coordinating Committee, chaired by the Program Coordinator/Graduate Co-ordinator, provides overall direction for the Program.

2. Dissertation Committee  
The Dissertation Committee will consist of at least three members, of whom two are core faculty and include the student's Principal Supervisor (Committee Chair) and Co-supervisor (if any). The Dissertation Committee will be chosen by the Program Coordinator in consultation with the Principal Supervisor and the student. Membership on the Committee may be altered to reflect changes in expertise/requirements, in consultation with the Program Coordinator. The Committee will meet with the student at least once every six months, and the student will submit a written summary of progress to the Committee at least

Committee Chair will provide a written report of the meeting to the Program Coordinator and the student, who may follow up with a written response to the committee. An unsatisfactory performance in three consecutive committee meetings shall be grounds for dismissal from the program. The Supervisor in consultation with the student will normally be responsible for convening the meetings.

The academic program of each PhD candidate will be tailored by the Supervisory Committee in consultation with the student, and recommended to the Program Coordinating Committee for approval.

### 3. Residency

The full-time residency requirement at Lakehead University will be a minimum of one year (three terms), of which two terms must be consecutive.

### 4. Qualifying Examination

A Qualifying Examination will be held within 12 months of initial registration in the program to assess the student's general preparedness for the PhD degree in his or her chosen area of study. It will also assess the student's ability to integrate material from divergent areas, to reconcile theoretical, methodological and empirical issues, and to think creatively. The examination will be conducted orally by a Qualifying Examination Committee that is selected by the Supervisory Committee. There may also be a written component, if so recommended by the Supervisory Committee. Only two attempts at the examination will be permitted. Students who fail the second attempt will be required to withdraw from the PhD program.

### 5. Dissertation and Defense

The dissertation research must be original and significantly advance knowledge in chemistry or materials science. The dissertation will be published in a standard thesis format, for example, consisting of a literature survey, a materials and methods section, experimental results with corresponding narrative, a discussion of the findings in a context of previous knowledge, and a comprehensive bibliography. The thesis will be reviewed by the Examination Committee, consisting of members of the Supervisory Committee and an examiner who is external to Lakehead University and has expertise in the student's area of research. The student must successfully defend the dissertation in a public oral presentation and

once a year. The Committee Chair will provide a written report of the meeting to the Program Coordinator and the student, who may follow up with a written response to the Committee. An unsatisfactory performance in three consecutive Committee meetings shall be grounds for dismissal from the program. The Supervisor in consultation with the student will normally be responsible for convening the meetings.

The academic program of each PhD candidate will be tailored by the Dissertation Committee in consultation with the student, and recommended to the Program Coordinating Committee for approval.

### 3. Residency

The full-time residency requirement at Lakehead University will be a minimum of one year (three terms), of which two terms must be consecutive.

### 4. Comprehensive Examination

A Comprehensive Examination will be held within 12 months of initial registration in the program to assess the student's general preparedness for the PhD degree in his or her chosen area of study. It will also assess the student's ability to integrate material from divergent areas, to reconcile theoretical, methodological and empirical issues, and to think creatively. The examination will be conducted orally by a Comprehensive Examination Committee that is selected by the Dissertation Committee. There may also be a written component, if so recommended by the Dissertation Committee. Only two attempts at the examination will be permitted. Students who fail the second attempt will be required to withdraw from the PhD program.

### 5. Dissertation and Defense

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an in-camera exam before the Examination Committee. If the External examiner cannot come to the defense in person, he/she may participate by video conferencing or by proxy (represented by the student's Examination Committee).

#### 6. Period of Study

Students will be expected to complete their course requirements, qualifying exam, dissertation and defense within a maximum of 4 years from entry into the PhD program.  
PROGRAM

To fulfill the degree requirements, students must complete a total of seven (7) full course equivalents at the graduate level consisting of the following components:

- (a) Qualifying Examination (Chemistry and Materials Science 6010) (a non-credit required course)
- (b) PhD Seminar (CHMS 6600 and 6601) (two non-credit required courses)
- (c) two half-course electives at the graduate level
- (d) PhD Dissertation CHMS 6901 (9900) (worth 6 FCEs)
- (e) Thesis Proposal and Seminar (CHMS 6050) (a non-credit required course)

The half-course electives may be drawn from 5000-level courses offered within the Department of Chemistry and other cognate departments as recommended by the Supervisory Committee.

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The half-course electives may be drawn from 5000-level courses offered within the Department of Chemistry and other cognate departments as recommended by the Dissertation Committee.

Section 3

The Faculty(ies) affected by the proposed calendar change

Graduate Studies, Science and Environmental Studies, Engineering

**I have been consulted regarding the attached calendar change and understand the academic and budgetary implication on my Dept./School/Faculty.**

I agree to this calendar change proposal

Yes

No

Name:

Faculty:

SES

Date:

Dec 19/12

Signature of Dean



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I agree to this calendar change proposal

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No

Name:

Faculty:

*Engineering*

Date:

*1/3/2012*

Signature of Dean

