

Concurrent  
Educ  
Math/Science  
Requirements

**Request for Calendar Change Form**

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

To Secretary of Senate  
From Name(Dean): Faculty  
Dr John O'Meara Education  
Department the change relates to  
SocSc & H; Sc & Env St; Health & Behavioural Sc  
Contact Person  
Dr Philip Allingham

Is the proposed calendar change Undergraduate

**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 checked="" type="checkbox"/> | No<br><input 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 checked="" type="checkbox"/> | No<br><input 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 checked="" type="checkbox"/> | No<br><input 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  | Yes  | No  |

- |  |                                 |   |
|--|---------------------------------|---|
| service/required course(s) in another program?   | <input type="checkbox"/>        | <input checked="" type="checkbox"/>       |
| 11. Do the proposed changes include change in course(s) which is/are open elective available to any student in any program?      | Yes<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |
| 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<br><input type="checkbox"/> | No<br><input checked="" type="checkbox"/> |

Signatures:

Date approved by faculty council

19/11/2010

Section 1

Description of the Proposed Calendar Change:

As generalists, Primary/Junior and Junior/Intermediate teacher candidates must be prepared to teach all subjects in the K-10 curriculum, but many of our potential elementary teachers lack the necessary mathematics and general science background to teach these subjects competently because their academic backgrounds are often in Humanities and Social Sciences. To support our Concurrent P/J and J/I candidates in their generalist C & I courses in the Professional Year, we are requiring that they take "Mathematics for Teachers" and General Science 1000 (both closely based on the K-8 curriculum in Ontario schools), unless they are in programs which require sciences. Because university-level mathematics courses do not review the essential concepts of elementary mathematics, we are requiring even Mathematics Majors and Minors to take at least 0.5 FCE "Mathematics for Teachers" before the Professional Year. These new provisions are not obligatory for I/S candidates since they are expected to be Gr. 11/12 specialists; however, since many senior secondary teachers have junior division teaching responsibilities, especially on practicum, we highly recommend that even these candidates take the J/I "Mathematics for Teachers."

Rationale of the Proposed Calendar Change(s):

(Corresponding to Section 2 where required)

Section 2

Existing Calendar Entries:  
(Page reference based on hard copy or URL based on electronic version of calendar)

Proposed Calendar Entries/Addition/ Deletion  
-If only addition, specify page number and placement in university calendar  
-If only deletion, write Deleted

1

<http://mycoursecalendar.lakeheadu.ca/pg22.html>

Concurrent Bachelors Degree Programs  
CONCURRENT CONTENT REGULATIONS

1. Mathematics or Science Electives  
When Primary-Junior or Junior-Intermediate Concurrent Education programs require students to take one or more Mathematics or Science electives, these electives must be selected from among: Biology, Chemistry, Physics, Geology, General Science 2010, 2310, 2330, Mathematics, Computer Science, or another acceptable Science Course from Geography, Environmental Studies, or Anthropology (see list in the appropriate departmental entries). Students may need to meet prerequisites for some courses. Mathematics 0140 or General Science 1000 are recommended.

2. Music or Visual Arts Requirement  
All Primary/Junior and Junior/Intermediate concurrent programs require students to take one FCE in Music or Visual Arts.

2

<http://mycoursecalendar.lakeheadu.ca/pg25.html>

Primary/Junior Specialization  
Primary-Junior Core Courses

Third Year:  
(a) Four Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)\*  
\*Education 3239 may be taken for credit more than once if the topics are different.  
Note:  
Concurrent Education students should check the timetable for non-Professional Year course offerings.

Junior/Intermediate Specialization

Concurrent Bachelors Degree Programs  
CONCURRENT CONTENT REGULATIONS

1. Mathematics or Science Electives  
When Primary-Junior or Junior-Intermediate Concurrent Education programs require students to take one or more Science electives, these electives must be selected from among: Astronomy, Biology, Chemistry, Physics, Geology, General Science 1000, 2010, 2310, 2330, Computer Science, or another eligible Science course from Physical Geography and Environmental Studies (see list in the appropriate departmental entries). Students may need to meet prerequisites for some courses.

DELETE #2 Music or Visual Arts Requirement

Primary/Junior Specialization  
Primary-Junior Core Courses

CHANGE TO:  
First, Second, or Third Year:  
(a) Education Mathematics PJ 2010 (0.5 FCE) and two Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)\*  
\*Education 3239 may be taken for credit more than once if the topics are different.  
Note:  
Concurrent Education students should check the timetable for non-Professional Year course offerings.

### Junior-Intermediate Core Courses

Third Year:

(a) Four Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)\*

\*Education 3239 may be taken for credit more than once if the topics are different.

Note:

Concurrent Education students should check the timetable for non-Professional Year course offerings.

### Intermediate/Senior Specialization Intermediate-Senior Core Courses

Third Year:

(a) Four Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)\*

\*Education 3239 may be taken for credit more than once if the topics are different.

Note:

Concurrent Education students should check the timetable for non-Professional Year course offerings.

### Junior/Intermediate Specialization Junior-Intermediate Core Courses

CHANGE TO:

Third Year:

(a) Education Mathematics JI 2011 (0.5 FCE) and two Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)\*

\*Education 3239 may be taken for credit more than once if the topics are different.

Note:

Concurrent Education students should check the timetable for non-Professional Year course offerings.

### Intermediate/Senior Specialization Intermediate-Senior Core Courses

CHANGE TO:

Third Year:

(a) Four Education electives with Education Mathematics JI 2011 (0.5 FCE) recommended (see Electives in the Department of Undergraduate Studies in Education Courses list)\*

\*Education 3239 may be taken for credit more than once if the topics are different.

Note:

Concurrent Education students should check the timetable for non-Professional Year course offerings.

3

<http://mycoursecalendar.lakeheadu.ca/pg23.htm>

### CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS

#### A. Primary/Junior Specialization

2. 1 FCE in Mathematics or Science
3. 1 FCE in Music or Visual Arts

### CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS

#### B. Junior/Intermediate Specialization

2. 1 FCE in Mathematics or Science
3. 1 FCE in Music or Visual Arts

### CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS

#### A. Primary/Junior Specialization

CHANGE TO:

2. 1 FCE in Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

3. Education Mathematics PJ 2010 and one half course open elective (Music or Visual Arts required)

### CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS

#### B. Junior/Intermediate Specialization

CHANGE TO:

2. 1 FCE in Science (see Concurrent Bachelor of

**CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS**

Professional Year

C. Intermediate/Senior Specialization

3. Education 4412, 4413, 4416, and one Education elective (see Electives in the Department of Undergraduate Studies in Education Courses list) (.25 x 4 = 1 FCE)

4

<http://mycoursecalendar.lakeheadu.ca/pg25.html>

Concurrent Bachelors Programs  
Primary/Junior Specializations

BA Programs

**ANTHROPOLOGY, ENGLISH, GEOGRAPHY**

First Year

(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Second Year

(c) One FCE elective in Music or Visual Arts

**FRENCH, HISTORY**

First Year

(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year

(b) One FCE elective in Music or Visual Arts

**GEOGRAPHY**

First Year

(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Education, Concurrent Content Regulations, #1)

3. Education Mathematics JI 2011 and one half course open elective (Music or Visual Arts required)

**CONCURRENT HONOURS BACHELOR DEGREE PROGRAMS**

Professional Year

C. Intermediate/Senior Specialization

CHANGE TO:

3. Education 4412, 4413, 4416 (.25 x 3 = .75 FCE)

ADD

4. Three Education electives (.75 FCE) (see Electives in the Department of Undergraduate Studies in Education Courses list) (Education Mathematics JI 2011 is recommended)

Concurrent Bachelors Programs  
Primary/Junior Specializations

BA Programs

CHANGE TO:

**ANTHROPOLOGY, ENGLISH**

First Year

(e) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Second Year

(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**FRENCH, HISTORY**

First Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(b) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**GEOGRAPHY**

Third Year  
(c) One FCE in Music or Visual Arts

#### MATHEMATICS

Third Year  
(c) One FCE in Music or Visual Arts  
(d) One FCE elective

#### PHILOSOPHY

First Year  
(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Third Year  
(b) One FCE elective in Music or Visual Arts

#### PSYCHOLOGY (4 and 5-year)

First Year  
(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Second Year  
(c) Two FCE electives, one of which may be in Psychology (see Note X1 above)

#### SOCIOLOGY, WOMEN STUDIES

First Year  
(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year  
(c) One FCE elective in Music or Visual Arts

#### VISUAL ARTS

Second Year  
(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year  
(d) Education Third Year P/J Core Courses. (See Department of Undergraduate Studies in Education, Concurrent Bachelor Degree Programs, Primary-Junior Specialization.)

#### BSc Programs

#### ANTHROPOLOGY

Second Year  
(c) One FCE elective in Music or Visual Arts

First Year  
(e) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year  
(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

#### MATHEMATICS

Third Year  
(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

(d) One FCE in Science, excluding Mathematics (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

#### PHILOSOPHY

First Year  
(e) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year  
(b) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

#### PSYCHOLOGY (4 and 5-year)

First Year  
(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Second Year  
(c) Education Math PJ 2010 and one and a half electives, one of which may be in Psychology (see Note X1 above)

#### SOCIOLOGY, WOMEN STUDIES

First Year  
(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year  
(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**CHEMISTRY**

Third Year

(b) One FCE elective in Music or Visual Arts

**EARTH SCIENCE**

First Year

(d) One FCE in Music or Visual Arts

**GEOGRAPHY**

First Year

(d) One FCE in Mathematics or Science (Geography excluded) (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Third Year

(c) One FCE in Music or Visual Arts

**MATHEMATICS**

Second Year

(c) One FCE in Music or Visual Arts

**NATURAL SCIENCE**

First Year

(e) One FCE in Mathematics (Mathematics 0140 recommended)

**PHYSICS**

Second Year

(c) One half-course in Music or Visual Arts

Third Year

(d) One half-course in Music or Visual Arts

**VISUAL ARTS**

Second Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(d) Education Math PJ 2010 and two Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)

**BSc Programs****CHANGE TO:****ANTHROPOLOGY**

Second Year

(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**CHEMISTRY**

Third Year

(b) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**EARTH SCIENCE**

First Year

(d) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**GEOGRAPHY**

First Year

(d) One FCE in Science excluding Geography (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**MATHEMATICS**

Second Year

(c) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**NATURAL SCIENCE**

First Year

(e) Education Math PJ 2010 and one half course open elective (Music or Visual Arts required)

**PHYSICS**

Second Year

(c) One half-course elective (Music or Visual Arts

5

<http://mycoursecalendar.lakeheadu.ca/pg26.html>

Concurrent Bachelors Programs  
Junior/Intermediate Specializations

BA Programs

ANTHROPOLOGY

First Year

(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Second Year

(c) One FCE elective in Music or Visual Arts

FRENCH, HISTORY

First Year

(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year

(b) One FCE elective in Music or Visual Arts

MATHEMATICS

Third Year

(c) One FCE in Music or Visual Arts

PHILOSOPHY

First Year

(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Third Year

(b) One FCE elective in Music or Visual Arts

PSYCHOLOGY (4 and 5-year)

First Year

(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Second Year

(c) Two FCE electives, one of which may be

required)

Third Year

DELETE

(d) Education Math PJ 2010

Concurrent Bachelors Programs  
Junior/Intermediate Specializations

BA Programs

ANTHROPOLOGY, ENGLISH, GEOGRAPHY

First Year

(e) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Second Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

FRENCH, HISTORY

First Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(b) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

MATHEMATICS

Third Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

PHILOSOPHY, POLITICAL SCIENCE

First Year

(e) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(b) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

PSYCHOLOGY (4 and 5-year)



in Psychology (see Note X1 above)

#### SOCIOLOGY, WOMEN STUDIES

First Year

(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year

(c) One FCE elective in Music or Visual Arts

#### VISUAL ARTS

Second Year

(d) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1)

Third Year

(d) Education Third Year P/J Core Courses. (See Department of Undergraduate Studies in Education, Concurrent Bachelor Degree Programs, Primary-Junior Specialization.)

#### BSc Programs

#### ANTHROPOLOGY

Second Year

(c) One FCE elective in Music or Visual Arts

#### CHEMISTRY

Third Year

(b) One FCE elective in Music or Visual Arts

#### EARTH SCIENCE

First Year

(d) One FCE in Music or Visual Arts

#### GEOGRAPHY

First Year

(e) One FCE elective in Mathematics or Science (see Concurrent Bachelor of Education, Concurrent Content Regulations #1)

Third Year

(c) One FCE in Music or Visual Arts

#### MATHEMATICS

Second Year

(c) One FCE in Music or Visual Arts

#### NATURAL SCIENCE

First Year

(e) One FCE in Mathematics (Mathematics 0140 recommended)

First Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Second Year

(c) Education Math JI 2011 and one and a half electives, one of which may be in Psychology (see Note X1 above)

#### SOCIOLOGY, WOMEN STUDIES

First Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

#### VISUAL ARTS

Second Year

(d) One FCE in Science (General Science 1000 recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(d) Education Math JI 2011 and two Education electives (see Electives in the Department of Undergraduate Studies in Education Courses list)

#### BSc Programs

#### ANTHROPOLOGY

Second Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

#### CHEMISTRY

Third Year

(b) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

#### EARTH SCIENCE

First Year

(d) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

#### GEOGRAPHY

First Year

(d) One FCE in Science (General Science 1000

**PHYSICS**

Second Year

(c) One half-course in Music or Visual Arts

Third Year

(d) One half-course in Music or Visual Arts

recommended) (see Concurrent Bachelor of Education, Concurrent Content Regulations, #1 regarding eligible Science courses).

Third Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

**MATHEMATICS**

Second Year

(c) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

**NATURAL SCIENCE**

First Year

(e) Education Math JI 2011 and one half course open elective (Music or Visual Arts required)

**PHYSICS**

Second Year

(c) One half-course elective (Music or Visual Arts required)

Third Year

DELETE

(d) Education Math PJ 2010

6

<http://mycoursecalendar.lakeheadu.ca/pg149.html>

**ADD to Electives**

**Education 2010: Mathematics for PJ Teachers**

**Mathematics for Teachers P/J**

0.5 FCE

3.0; or, 3.0

Topics include mathematics content and processes as needed by prospective teachers for effective and conceptually-rich classroom teaching. As well as examining the conceptual underpinnings to essential mathematics topics across the five strands the course will include a focus on modeling and reasoning as needed to support problem-based learning. Standard and non-standard algorithms will be developed via inquiry, modeling and sense-making.

**Education 2011: Mathematics for JI Teachers**

**Mathematics for JI Teachers**

0.5 FCE

3.0; or, 3.0

Topics include mathematics content and processes which prospective teachers require for effective and conceptually-rich classroom teaching. As well as examining the conceptual underpinnings to, and connections within, middle to upper elementary and junior secondary mathematics topics, the course will include a focus on modeling and reasoning as needed to support problem-based learning. Standard and non-standard algorithms will be developed via inquiry, modeling and sense-making.

Section 3

The Faculty(ies) affected by the proposed calendar change,

Dr Gillian Siddall, Dean, Social Sciences & Humanities

Dr Andrew Dean, Dean, Science & Environmental Studies

Dr Lori Livingston, Dean, Health & Behavioural Science

*Gillian Siddall - email for Dean of Education to follow re-approval requirements for V&A music*  
*Andrew Dean (See Note:)*  
*JJC*

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:  
Dr John O'Meara  
Faculty:  
Education  
Date:  
23/11/2010

Signature of Dean 

*Note: This is subject to sufficient funds being available to SES to staff GSCI 1000. Minimum of 1.5 fee of sessional funding per year.*