

## Request for Calendar Change Form

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

Date:

To From	Secretary of Senate Name(Dean): <input style="width: 100%;" type="text" value="Andrew P. Dean"/>	Faculty <input style="width: 100%;" type="text" value="Science and Environmental Studies"/>
	Department the change relates to <input style="width: 100%;" type="text" value="Department of Mathematical Sciences"/>	
	Contact Person <input style="width: 100%;" type="text" value="Adam Van Tuyl"/>	

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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>
2. Is a transition plan needed for student in progress?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
3. Are the proposed changes likely to affect student enrollment in your department/school/faculty?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
4. Are the proposed changes likely to affect student enrollment in other departments/schools/faculties at Lakehead University?	Yes <input type="checkbox"/>	No <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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>
6 Will the proposed changes affect existing teaching loads within your department/school/faculty?	Yes <input type="checkbox"/>	No <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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>
8. Will the proposed change require direct or in-kind support from outside the academic unit?	Yes <input type="checkbox"/>	No <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 <input checked="" type="checkbox"/>	No <input 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	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
	<input type="checkbox"/>		<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	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
Signatures:	Date approved by faculty council			
	<input style="width: 150px; height: 20px;" type="text"/>			

<b>Section 1</b>
Description of the Proposed Calendar Change:
Split Math 1281 into two half courses
Rationale of the Proposed Calendar Change(s):
(Corresponding to Section 2 where required)
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> <p>1 <input style="width: 50px; height: 20px;" type="text"/></p> <p>Math 1281 is currently a full year course. We wish to split this course into two half year courses. There a number of advantages of this split:</p> <ol style="list-style-type: none"> <li>1. It is inline with the changes suggested in our recent program review.</li> <li>2. Students who currently drop out after the half-way point receive no credit. The new structure would allow them to receive some credit.</li> <li>3. The new courses have been designed to be attractive as a one semester first year elective for those who need a credit in science.</li> <li>4. It gives the chair some additional flexibility in teaching assignments.</li> </ol> </div>
<div style="border: 1px solid #ccc; padding: 5px;"> <p><input style="width: 50px; height: 20px;" type="text"/></p> <p>-----</p> <p><b>EXPLANATION OF QUESTIONS WITH A YES</b></p> <p>-----</p> <ol style="list-style-type: none"> <li>1. This calendar change affects the Department of Mathematical Sciences, the Department of Computer Science, the Department of Economics, and the Faculty of Education.</li> <li>9. Math 1281 is a required course for ALL math programs. It is also a required course in all computer science programs, and in all concurrent education programs in either mathematics and computer science. Math 1281 is also a required course for BA in Economics and Mathematics program in Economics.</li> <li>10. As noted above, Math 1281 is a required course in computer science, economics, and in some of the concurrent education programs.</li> </ol> </div>

Section 2			
<p>Existing Calendar Entries: (Page reference based on hard copy or URL based on electronic version of calendar)</p>	<p>Proposed Calendar Entries/Addition/ Deletion -If only addition, specify page number and placement in university calendar -If only deletion, write Deleted</p>		
<table border="1"> <tr> <td data-bbox="164 449 729 953"> <p>1 <a href="http://mycoursecalendar.lakeheadu.ca/pg180.html">http://mycoursecalendar.lakeheadu.ca/pg180.html</a></p> <p>Mathematics 1281 Discrete Mathematics Credit Weight: 1.0 Prerequisite(s): MHF4U or permission of the Department Description: Basic set theory; introduction to logic and proofs including propositional calculus, quantifiers, and mathematical induction; basic combinatorics; discrete probability; relations, including recurrence relations, equivalence relations, and partial orderings; graphs and trees; Boolean algebra; and algorithms. Offering: 3-1; 3-1</p> </td> <td data-bbox="729 566 1427 1676"> <p>[Replace Math 1281 with the following two half year courses]</p> <p>Math 1XXX Discrete Mathematics Credit Weight: 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: Sets, logic, and functions; Boolean Algebras, Algorithms; Basic counting principles; permutations and combinations; discrete probability, recurrence relations; principle of inclusion and exclusion; pigeonhole principle; graph theory.</p> <p>Offering: 3-1; 0-0</p> <p>Math 1ZZZ Logic, Set Theory, and Proofs Credit Weight 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: An introduction to proofs and to writing mathematics. Logic; propositional calculus; quantifiers, rules of inference, sets; set operations; cardinality and countability; relations, including partial orders and equivalence relations; functions; proof techniques such as direct proof; indirect proof; contradiction, and mathematical induction; basic properties of the integers.</p> <p>Offering: 0-0; 3-1;</p> </td> </tr> </table>		<p>1 <a href="http://mycoursecalendar.lakeheadu.ca/pg180.html">http://mycoursecalendar.lakeheadu.ca/pg180.html</a></p> <p>Mathematics 1281 Discrete Mathematics Credit Weight: 1.0 Prerequisite(s): MHF4U or permission of the Department Description: Basic set theory; introduction to logic and proofs including propositional calculus, quantifiers, and mathematical induction; basic combinatorics; discrete probability; relations, including recurrence relations, equivalence relations, and partial orderings; graphs and trees; Boolean algebra; and algorithms. Offering: 3-1; 3-1</p>	<p>[Replace Math 1281 with the following two half year courses]</p> <p>Math 1XXX Discrete Mathematics Credit Weight: 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: Sets, logic, and functions; Boolean Algebras, Algorithms; Basic counting principles; permutations and combinations; discrete probability, recurrence relations; principle of inclusion and exclusion; pigeonhole principle; graph theory.</p> <p>Offering: 3-1; 0-0</p> <p>Math 1ZZZ Logic, Set Theory, and Proofs Credit Weight 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: An introduction to proofs and to writing mathematics. Logic; propositional calculus; quantifiers, rules of inference, sets; set operations; cardinality and countability; relations, including partial orders and equivalence relations; functions; proof techniques such as direct proof; indirect proof; contradiction, and mathematical induction; basic properties of the integers.</p> <p>Offering: 0-0; 3-1;</p>
<p>1 <a href="http://mycoursecalendar.lakeheadu.ca/pg180.html">http://mycoursecalendar.lakeheadu.ca/pg180.html</a></p> <p>Mathematics 1281 Discrete Mathematics Credit Weight: 1.0 Prerequisite(s): MHF4U or permission of the Department Description: Basic set theory; introduction to logic and proofs including propositional calculus, quantifiers, and mathematical induction; basic combinatorics; discrete probability; relations, including recurrence relations, equivalence relations, and partial orderings; graphs and trees; Boolean algebra; and algorithms. Offering: 3-1; 3-1</p>	<p>[Replace Math 1281 with the following two half year courses]</p> <p>Math 1XXX Discrete Mathematics Credit Weight: 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: Sets, logic, and functions; Boolean Algebras, Algorithms; Basic counting principles; permutations and combinations; discrete probability, recurrence relations; principle of inclusion and exclusion; pigeonhole principle; graph theory.</p> <p>Offering: 3-1; 0-0</p> <p>Math 1ZZZ Logic, Set Theory, and Proofs Credit Weight 0.5 Prerequisites: MHF4U or permission of the Department</p> <p>Description: An introduction to proofs and to writing mathematics. Logic; propositional calculus; quantifiers, rules of inference, sets; set operations; cardinality and countability; relations, including partial orders and equivalence relations; functions; proof techniques such as direct proof; indirect proof; contradiction, and mathematical induction; basic properties of the integers.</p> <p>Offering: 0-0; 3-1;</p>		
<p>COURSES CHANGES (MATHEMATICS)</p>			

2

<http://mycoursecalendar.lakeheadu.ca/pg180.html>

Mathematics 2231 Ring Theory with Applications  
Credit Weight: 0.5  
Prerequisite(s): Mathematics 1281

Math 2231 Introduction to Abstract Algebra  
Credit Weight: 0.5  
Prerequisite(s): Math 1ZZZ

[Note -- we are currently putting in a calendar change for Math 2231; this change reflects the new title]

3

<http://mycoursecalendar.lakeheadu.ca/pg180.html>

Mathematics 3231 Introductory Analysis I  
Credit Weight: 0.5  
Prerequisite(s): Mathematics 1180 and either Mathematics 1281 or permission of the Department

Mathematics 3231 Introductory Analysis I  
Credit Weight: 0.5  
Prerequisite(s): Mathematics 1172 and either Mathematics 1ZZZ or permission of the Department

PROGRAM CHANGES (MATHEMATICS)

4

<http://mycoursecalendar.lakeheadu.ca/pg550.html>

1. BA (Mathematics Major)  
Three Year program  
  
4. Honours BA (Mathematics)  
Four Year program  
  
3. BA (Mathematics Major)  
Four Year Non-Direct Entry program  
  
First Year:  
(a) Mathematics 1180 and 1281

1. BA (Mathematics Major)  
Three Year program  
  
4. Honours BA (Mathematics)  
Four Year program  
  
3. BA (Mathematics Major)  
Four Year Non-Direct Entry program  
  
First Year:  
(a) Mathematics 1171, 1172, 1XXX, and 1ZZZ

5

<http://mycoursecalendar.lakeheadu.ca/pg551.html>

1. BSc (Mathematics Major)  
Three Year program  
  
3. Honours BSc (Mathematics)  
Four Year program

1. BSc (Mathematics Major)  
Three Year program  
  
3. Honours BSc (Mathematics)  
Four Year program

2. BSc (Mathematics Major)  
Four Year Non-Direct Entry program

6. BSc (Mathematics and Physics Majors)  
Three Year program

First Year:  
(a) Mathematics 1180 and 1281

2. BSc (Mathematics Major)  
Four Year Non-Direct Entry program

6. BSc (Mathematics and Physics Majors)  
Three Year program

First Year:  
(a) Mathematics 1171, 1172, 1XXX, and 1ZZZ

PROGRAM CHANGES (COMPUTER  
SCIENCE)

6

<http://mycoursecalendar.lakeheadu.ca/pg277.html>

1. Honours BSc (Computer Science)  
Cooperative Program  
(a) Business Option  
(b) Science Option

2. BSc (Computer Science) - Co-op  
Four Year Non-Direct Entry program

3. BSc (Computer Science Major)  
Three year program

4. HBSc (Computer Science Major)  
Four Year program

5. BSc (Computer Science Major)  
Four Year Non-Direct Entry program

First Year (Fall and Winter):  
(a) Mathematics 1180, 1281; Computer  
Science 1411, 1431

1. Honours BSc (Computer Science)  
Cooperative Program  
(a) Business Option  
(b) Science Option

2. BSc (Computer Science) - Co-op  
Four Year Non-Direct Entry program

3. BSc (Computer Science Major)  
Three year program

4. HBSc (Computer Science Major)  
Four Year program

5. BSc (Computer Science Major)  
Four Year Non-Direct Entry program

First Year (Fall and Winter):  
(a) Mathematics 1171, 1172, 1XXX, 1ZZZ;  
Computer Science 1411, 1431

7

<http://mycoursecalendar.lakeheadu.ca/pg277.html>

1. Honours BSc (Computer Science)  
Cooperative Program  
(c) Hardware Option

First Year (Fall and Winter):  
(b) Mathematics 1281 or Chemistry 1110,  
1130

1. Honours BSc (Computer Science)  
Cooperative Program  
(c) Hardware Option

First Year (Fall and Winter):  
(b) Mathematics 1XXX, 1ZZZ or Chemistry 1110,  
1130

COURSE CHANGES (COMPUTER SCIENCE)

8

<http://mycoursecalendar.lakeheadu.ca/pg144.html>

Computer Science 4433 Algorithm Design and Analysis  
Credit Weight: 0.5  
Prerequisite(s): Computer Science 2412, Mathematics 1281

Computer Science 4433 Algorithm Design and Analysis  
Credit Weight: 0.5  
Prerequisite(s): Computer Science 2412, Mathematics 1XXX, 1ZZZ

9

<http://mycoursecalendar.lakeheadu.ca/pg144.html>

Computer Science 4451 Theory of Computing  
Credit Weight: 0.5  
Prerequisite(s): Computer Science 2412 and Mathematics 1281

Computer Science 4451 Theory of Computing  
Credit Weight: 0.5  
Prerequisite(s): Computer Science 2412 and Mathematics 1XXX, 1ZZZ

PROGRAM CHANGES (FACULTY OF EDUCATION)

10

<http://mycoursecalendar.lakeheadu.ca/pg636.html>

15. BA, BEd (Mathematics Major) P/J  
Four Year program  
Second Year:  
(a) Mathematics 1281, 2111, 2131

MATHEMATICS  
15. BA, BEd (Mathematics Major) P/J  
Four Year program  
Second Year:  
(a) Mathematics 1XXX, 1ZZZ, 2111, 2131

11

<http://mycoursecalendar.lakeheadu.ca/pg636.html>

16. BSc, BEd (Mathematics Major) P/J  
Four Year program  
First Year:  
(a) Mathematics 1180, 1281

16. BSc, BEd (Mathematics Major) P/J  
Four Year program  
First Year:

(a) Mathematics 1171, 1172, 1XXX, 1ZZZ

12

<http://mycoursecalendar.lakeheadu.ca/pg653.html>

14. BA, BEd (Mathematics Major) J/I  
Four Year program

Second Year:  
(a) Mathematics 1281, 2111, 2131

14. BA, BEd (Mathematics Major) J/I  
Four Year program

Second Year:  
(a) Mathematics 1XXX,1ZZZ, 2111, 2131

13

<http://mycoursecalendar.lakeheadu.ca/pg653.html>

15. BSc, BEd (Mathematics Major) J/I  
Four Year program

First Year:  
(a) Mathematics 1180, 1281

15. BSc, BEd (Mathematics Major) J/I  
Four Year program

First Year:  
(a) Mathematics 1171, 1172, 1XXX, 1ZZZ

14

<http://mycoursecalendar.lakeheadu.ca/pg673.html>

16. BA, BEd (Mathematics Major) I/S  
Four Year program

Second Year:  
(a) Mathematics 1281, 2111 and 2131

16. BA, BEd (Mathematics Major) I/S  
Four Year program

Second Year:  
(a) Mathematics 1XXX,1ZZZ, 2111 and 2131

15

<http://mycoursecalendar.lakeheadu.ca/pg673.html>

17. BSc, BEd (Mathematics Major) I/S  
Four Year program

First Year:  
(a) Mathematics 1180, 1281

17. BSc, BEd (Mathematics Major) I/S  
Four Year program

First Year:  
(a) Mathematics 1171, 1172, 1XXX, 1ZZZ

16

<http://mycoursecalendar.lakeheadu.ca/pg665.html>

6. BSc, BEd (Computer Science Major) I/S  
Four Year program

First Year:  
(b) Mathematics 1180, 1281

6. BSc, BEd (Computer Science Major) I/S  
Four Year program

First Year:  
(b) Mathematics 1171, 1172, 1XXX, 1ZZZ

PROGRAM CHANGES (ECONOMICS)

17

<http://mycoursecalendar.lakeheadu.ca/pg703.html>

2. BA (Mathematics and Economics Majors)  
Three Year program

Second Year:  
(b) Mathematics 1281, 2111, 2131, 2255 and 2275

2. BA (Mathematics and Economics Majors)  
Three Year program

Second Year:  
(b) Mathematics 1XXX, 1ZZZ, 2111, 2131, 2255 and 2275



**Section 3**

The Faculty(ies) affected by the proposed calendar change

Department of Mathematical Sciences (SES)

Department of Computer Science (SES)

Department of Economics (SES)

Faculty of Education

**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:

Date:

Signature of Dean