

Request for Calendar Change Form

Tracking No:
 (Senate Secretary's Office
 use only)
 Date:
 02/09/2010

To Secretary of Senate
 From Name(Dean): Faculty
 Dr. Andrew P. Dean Science and Environmental Studies
 Department the change relates to
 Department of Computer Science
 Contact Person
 Dr, M. Benson

*Game Programming
 Specialization*

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 type="checkbox"/> | No
<input checked="" 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 checked="" type="checkbox"/> | No
<input 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 | 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 <input type="checkbox"/> | No <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 checked="" type="checkbox"/> | No <input type="checkbox"/> |

Signatures:

Date approved by faculty council

Section 1
Description of the Proposed Calendar Change: Modifications of Existing courses to accommodate a Game Programming Specialization
Rationale of the Proposed Calendar Change(s): (Corresponding to Section 2 where required)
1 Description updates to formally indicate game programming content incorporated into course
2 Description updates to formally indicate game programming content incorporated into course
3 Description updates to formally indicate game programming content incorporated into course
4 Divide project course into general topics and game specific topics. The new course will run concurrent with the existing COMP4431
5 Add requirements for specialization in game programming
6 Update Business Option so students can take game programming project in last term.
7 Update Science Option so students can take game programming project in last term.

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

Existing Entry
Computer Science 4471 Computer Graphics
Credit Weight: 0.5

Prerequisite(s): Computer Science 2412

Description: Topics include raster graphics, graphics architectures, application programmer's interface, interactive graphics, two and three dimensional computer graphics primitives and attributes, transformations, viewing, animation, hidden surface removal, colour and shading, and curves and surfaces.

Offering: 3-0; or 3-0

Computer Science 4471 Computer Graphics
Credit Weight: 0.5

Prerequisite(s): Computer Science 2412

Description: Topics include raster graphics, graphics architectures, application programmer's interface, interactive graphics, two and three dimensional computer graphics primitives and attributes, transformations, viewing, animation, hidden surface removal, colour and shading, and curves and surfaces. Course topics will be related to game programming applications and assigned work will employ course material in the construction of two and three dimensional games.

Offering: 3-0; or 3-0

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

Computer Science 4475 Topics in Artificial Intelligence
Credit Weight: 0.5

Prerequisite(s): Computer Science 2412

Description:
Introduction to artificial intelligence (AI) and its applications. Topics include several of the following: logic and reasoning, AI languages, state-space search, heuristics, constraints-satisfaction problem, game-problem solving, planning, machine learning, agent and multi-agents programming, neural networks, genetic algorithms and reasoning about uncertainty. Students will design and implement a medium scale project as part of the course requirements.

Offering: 3-0; or 3-0

Computer Science 4475 Topics in Artificial Intelligence
Credit Weight: 0.5

Prerequisite(s): Computer Science 2412

Description:
Introduction to artificial intelligence (AI) and its applications. Topics include several of the following: logic and reasoning, AI languages, state-space search, heuristics, constraints-satisfaction problem, game-problem solving, planning, machine learning, agent and multi-agents programming, neural networks, genetic algorithms and reasoning about uncertainty. Students will design and implement a medium scale project related to game programming as part of the course requirements.

Offering: 3-0; or 3-0

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

Computer Science 4478 Object-Oriented Design and Methodology
Credit Weight: 0.5

Prerequisite(s): Computer Science 2477

Description:

Object oriented technology is based on a few simple concepts, techniques and methods that, when combined, produce significant improvements in software construction. Exposure to such technology begins with the OMG Agility and continues through a variety of add-on topics including design patterns, aspect-orientation, testing and refactoring, architectural design patterns, CBSE, actor-orientation, service-orientation and multi-agents. Individual and group projects are used to test the applicability of these concepts using modern IDEs (e.g. NetBeans, Eclipse) with a variety of plug-in APIs (e.g. AspectJ). The projects are focused on using design patterns for game development.

Offering: 3-0; or 3-0

Computer Science 4478 Games Design Patterns
Credit Weight: 0.5

Prerequisite(s): Computer Science 2477

Description:

This course presents a model to support the design, analysis, and comparison of games through the use of games design patterns, descriptions of reoccurring interaction relevant to game play. The model consists of a structural framework to describe the components of games, and patterns of interaction that describes how components are used by players (or a computer) to affect various aspects of the game play. Focusing on the patterns and identified methods for using them, this course describes variety of Object Oriented methods for identifying the variant behaviors of the system, encapsulating them into abstract subsystems and decoupling them from the invariant core. Games design patterns are used extensively to achieve the proper abstractions and decoupling. The results are gaming systems that can be easily modified, upgraded or adapted. The student will develop several games (e.g. single, multiplayer and mobile games) through the course assignments and projects.

Offering: 3-0; or 3-0

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To be added after listing of Computer Science 4431 Advanced Project
(<http://mycoursecalendar.lakeheadu.ca/pg144.html>)

Computer Science 4432 Advanced Game Programming Project
Credit Weight: 0.5

Prerequisite(s): Computer Science 2477 and 3415

Description: Students will be required to work in teams to design and implement a significant

multiplayer game. Design decision making will include the application of basic sciences, mathematics, computer science, and business fundamentals. Written and oral presentations will be an integral part of the course. Modern programming and design methodology will be stressed throughout.

NOTE: This course will run concurrent with Computer Science 4431. Students may not take both Computer Science 4431 and 4432 for credit.

Offering: 0-0; 3-0

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

Existing Entry

Recommended electives:
Graphics, Internet:
Computer Science 4471, 4476
Modeling:
Computer Science 4471
Physics 3411
Mathematics 3351, 3371

Proposed Entry:

Specialization in Game Programming

Years 1 and 2 are the same as for the HBSc program

By third year students may select the Game Programming Specialization which will be noted on their transcripts. Students must successfully complete five half courses from:

Required Computer Science Courses: COMP4471, COMP4475, COMP4478, COMP4432

Elective courses: 0.5 FCE approved by the Department of Computer Science

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

Existing Entry

Fifth Year (Winter):
(a) Computer Science 4413 and 4431
(b) Mathematics 3333
(c) One half-course elective from List of Program Electives
(d) One half-course elective

Proposed Entry

Fifth Year (Winter):

- (a) Computer Science 4413 and either 4431 or 4432
- (b) Mathematics 3333
- (c) One half-course elective from List of Program Electives
- (d) One half-course elective

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

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Existing Entry

Fifth Year (Winter):

- (a) Computer Science 4413, 4431, and 4451
- (b) One half-course from List of Program Electives
- (c) One half-course elective

Proposed Entry

Fifth Year (Winter):

- (a) Computer Science 4413, 4451, and either 4431 or 4432
- (b) One half-course from List of Program Electives
- (c) One half-course elective

Section 3

The Faculty(ies) affected by the proposed calendar change

Engineering (Courses changing (COMP4471, 4475, 4478) are on list of electives for Software 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: Henri Saliba

Faculty: Engineering

Date: Nov. 1, 2010

Signature of Dean


Dr. Andrew P. Dean
Dean, Science & Environmental Studies

November 17, 2010

Computer Science Proposed Game Programming Specialization

Notes for Calendar submission

Item 3:

Game programming is an attractive aspect of our courses. We expect a formal acknowledgement of a set of related courses through a specialization will help to attract and retain students.

Item 9:

COMP4475 is required in our hardware option; COMP4475, COMP4471 and COMP4478 are on our list of program electives from which our students must select a number of courses.

Item 12:

COMP4471, COMP4475, and COMP4478 are on a list of electives for Software Engineering. Engineering has no objections to the changes.