MEETING OF THE FACULTY COUNCIL OF THE FACULTY OF SCIENCE

A regular meeting of the Faculty Council of the Faculty of Science will be held on Wednesday, November 20, 2013, at 1 p.m. in C-2045.

AGENDA

1. Regrets

2. Adoption of the Minutes of October 16, 2013

3. Business Arising from the Minutes

4. Correspondence:
   A. Secretary, Senate Committee on Undergraduate Studies has provided two memos regarding the process for considering calendar changes, paper 4.A (2 pages).
   B. Notifications received of representatives to Faculty of Science Faculty Council, as per paper 4.B (1 page):
      Nathan Cook, School of Music

5. Reports of Standing Committees:
   A. Undergraduate Studies Committees:
      b. Department of Computer Science, proposal for new course, COMP 4750, Introduction to Natural Language Processing, paper 5.A.b (13 pages).
      c. Department of Computer Science, calendar changes, paper 5.A.c (43 pages).
      e. Department of Earth Sciences, proposal for new course, EASC 4703, Environmental Change and Quaternary Geography, paper 5.A.e (14 pages).
      f. Department of Earth Sciences, calendar changes, paper 5.A.f (18 pages).
      g. Department of Mathematics and Statistics, calendar changes, paper 5.A.g (4 pages).

   B. Graduate Studies Committee:
      a. Computational Science, calendar changes, paper 5.B.a (8 pages).
      b. Department of Psychology, proposal for new courses, PSYC 6623, Child
Psychopathology, Assessment and Diagnosis, and PSYC 7022, Practicum in Child Assessment and Diagnosis, paper 5.B.b (11 pages).


C. Nominating Committee: None
D. Library Committee: None

6. Reports of Delegates from Other Councils

7. Report of the Dean

8. Question Period


10. Adjournment

Mark Abrahams
Dean of Science
FACULTY OF SCIENCE
FACULTY COUNCIL OF SCIENCE
MINUTES OF MEETING OF OCTOBER 16, 2013

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, October 16, 2013, at 1:00 p.m. in room C-2045.

FSC 2203
Present
Biochemistry
Mulligan, M.

Biology
Leroux, S. Marino, P.

Chemistry
Merschrod, E. Pickup, P.

Computer Science
Banzhaf, W. Gong, M. Wang, C.A.

Earth Sciences
Hanchar, J.

Mathematics & Statistics
Booth, I. Loredo-Osti, J. Pike, D. Sullivan, S.

Ocean Sciences Centre
Fletcher, G.

Physics & Physical Oceanography
Poduska, K.

Dean of Science Office
Abrahams, M. Foster, A. Wall, M.

Economics
Lyssenko, N.

Geography
Simms, E.
Library
Alcock, E.

Graduate Students
Mersereau, J.

Undergraduate Students
Kennedy, Sean O’Dea, Andrew Devin Grant

FSC 2204
Regrets
Joan Burry
Nathan Cook
Donna Stapleton
Dorothy Vaandering
Len Zedel

FSC 2205
Adoption of Minutes
There was one amendment to the September 18 minutes. At the September 18 meeting of Faculty Council, the Dean was asked to invite the Provost and the Vice-President (Research) to a Faculty Council meeting. The Dean suggested at that time that having Departments issue the invitation directly would be preferential.
Moved: Minutes of the September 18 meeting be adopted as amended (Pickup/Mulligan). Carried.

FSC 2206
Business Arising: None

FSC 2207
Correspondence
December 17 is the deadline for receipt of calendar changes for 2014-2015 by the Senate Committee on Undergraduate Studies. Given this deadline, the Faculty of Science Faculty Council meeting for December will take place one week earlier on December 11 instead of the previously scheduled December 18. The Dean of Science office will notify all members of this change of date.

Academic units submitting calendar changes must complete the appropriate form as listed on the Registrar’s Office website and attach it to the documentation being submitted. Academic units must not submit electronic versions of calendar changes directly to the Registrar’s Office but rather to the Dean’s office for onward submission to the Registrar’s Office.

Senate Committee on Undergraduate Studies is asking that calendar changes be forwarded for approval electronically in both word/wordperfect and PDF versions in addition to paper copy. S. Sullivan asked if the Faculty of Science would like to use electronic submission. It was agreed that the Faculty of Science would submit calendar changes electronically in addition to the paper copy.
The Dean welcomed representatives Dorothy Vaandering, Anna Hicks, Donna Stapleton, Barun Maity, Joe Mersereau, Jin-jun Tong, Marc Mackinnon, and Balogun Adeniyi to the Faculty of Science Faculty Council.

**FSC 2208** Reports of Standing Committees:

A. **Undergraduate Studies Committee:**
   Report presented by Shannon Sullivan, Chair, Undergraduate Studies Committee.
   a. **Moved:** Department of Chemistry, proposal for new course, CHEM 4156, Analytical Method Development and Sampling (Sullivan/Pickup). **Carried.**
      There was some discussion on hybrid undergraduate/graduate courses.
   b. **Moved:** Department of Ocean Sciences, proposal for new course, OCSC 4000, Scientific Diving Methods (Sullivan/Fletcher). **Carried.**
   c. **Moved:** Department of Mathematics and Statistics, calendar changes, MATH 2330, 4230, and 4300 (Sullivan/Pike). **Carried.**
   b. **Moved:** Response to Senate Committee on Undergraduate Studies, Penalties for Academic Misconduct (Sullivan/Foster). **Carried.**

B. **Graduate Studies Committee:**
   Report presented by J.C. Loredo-Osti, Chair, Graduate Studies Committee and W. Banzhaf, Head, Department of Computer Science
   a. **Moved:** Department of Chemistry, calendar change, comprehensive examination in Analytical, Inorganic and Physical Chemistry (Loredo-Osti/Pickup). **Carried.**
   b. Department of Computer Science, calendar changes plus new courses. W. Banzhaf requested the following amendments to the omnibus package: Credit restrictions be listed for COMP 6902 with COMP 6743, COMP 6904 with COMP 6722, COMP 6922 with COMP 6712, and COMP 6926 with COMP 6726; COMP 6923 be deleted from the package due to outdated references and COMP 6711 be retained. **Moved:** To approve this omnibus package as amended (Simms/Banzhaf). **Carried.**
   **Moved:** To revamp all remaining courses with possible further changes to be brought forward at the next Faculty Council meeting (Loredo-Osti/Banzhaf). **Carried.**
C. Nominating Committee:
   Report presented by Andy Foster, Associate Dean (Undergraduate
   and Administration).
   a. Moved: Approval of committee matrix (Foster/Sullivan).
      Carried.

D. Library Committee: None

FSC 2209 Reports of Delegates from Other Councils: None

FSC 2210 Report of the Dean:
   Presented by Mark Abrahams, Dean.

   Tenders are now being called for the engineering and architectural design
for the new core sciences building. While more than 1/3 of the funding will
be provided directly by the province, the remainder of the money (about
$200M) has yet to be secured. Part of that support will be made available as
a result of financial resources associated with an ongoing efficiency
review. Funding will also be sought through development by the university.

   Associated with the efficiency review, budget allocations to different
academic units are under review and will be moving in the direction of
activity. As a reminder, the university has moved to a position-based
budgeting model. This creates a more restrictive financial scenario for
academic units since transfer of funds between salary and operating
expenses will no longer be possible. Operating budgets will now be made up
of a basic allocation, a component linked to enrolment, and a portion of the
Indirect Costs of Research that represents the total support from tri-council
funding.

   The Dean acknowledged the passing of Jamie the Seal at Ocean Sciences on
Friday of last week. According to the news report released today, Jamie was
born in captivity and resided at Ocean Sciences for 20 years before his
untimely death. An autopsy has not provided insight into the cause of death.
Pending the results of further testing, it is hoped that the cause of death can
be determined. G. Fletcher, Head of Ocean Sciences, confirmed that there are
no ongoing issues that would jeopardize the health of the other seals.

FSC 2211 Question Period: None

FSC 2212 Adjournment:
The meeting adjourned at 1:50 p.m.
16 October 2013

TO: Deans and Department Heads, St. John’s Campus
    Vice-President, Marine Institute
    Associate Vice-President (Academic) and Division Heads, Grenfell Campus
    Chairpersons and Secretaries, Academic Councils (Faculties/Schools/Grenfell Campus/Marine Institute)

FROM: Secretary, Senate Committee on Undergraduate Studies

SUBJECT: Calendar Changes

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This memorandum is being forwarded as a follow-up to the memorandum dated 12 September 2013 regarding the submission of calendar changes for the 2014-2015 University Calendar (copy enclosed).

At a meeting held on 10 October 2013, the Senate Committee on Undergraduate Studies noted its concern that the documentation received with proposed calendar changes is often incomplete or insufficient and therefore jeopardizes the uniformity that Senate requires in the submission of calendar changes. In particular, the Committee was concerned that academic units are not complying with the Secondary Calendar Changes, Consultations and Library Holdings sections of the forms for calendar changes. In this regard, the forms have been revised so that the information that is required in submitting calendar changes is more specific. The forms are available in both Word Perfect and MS-Word versions at www.mun.ca/regoff/home/ under both Related Content (Forms for Calendar Changes) and Office of the Registrar Links (Forms/Applications) (Other Forms) (Forms for Calendar Changes).

In order for the Senate Committee on Undergraduate Studies to be consistent in considering calendar changes, it will ensure that the proper use of the forms for calendar changes, with all of its required documentation, is received. To this end, the Committee will return any incomplete/insufficient submissions of calendar changes to the appropriate Dean/Vice-Present/Associate Vice-President (Academic) with an accompanying request for the missing documentation.

If you have any questions regarding the above, please get in touch with me by phone at 864-4410 or by e-mail at importer@mun.ca.

Thank you,

Jennifer Porter
Deputy Registrar (Acting) and
Secretary to the Committee

JP/lmn

cc: Chairpersons and Secretaries, Undergraduate Studies Committees

PS: Please forward this memorandum to all staff in your academic unit who are involved in the preparation of calendar changes.

In order to expedite the approval process and to provide documentation to Senate that is clear and concise, calendar changes submitted to the Senate Committee on Undergraduate Studies must be submitted in electronic format in both MS-Word/Word Perfect and PDF versions.
30 October 2013

TO: Deans and Department Heads, St. John’s Campus
Vice-President, Marine Institute
Associate Vice-President (Academic) and Division Heads, Grenfell Campus
Chairpersons and Secretaries, Academic Councils (Faculties/Schools/Grenfell Campus/Marine Institute)

FROM: Secretary, Senate Committee on Undergraduate Studies

SUBJECT: Calendar Changes

Please be advised that this memorandum replaces the memorandum forwarded to you on 16 October 2013.

At a meeting held on 24 October 2013, the Senate Committee on Undergraduate Studies agreed that its process for considering calendar changes for the 2014-2015 University Calendar will not be changed at this time. In other words, the Committee will ensure that evidence of consultation with the Library and between St. John’s Campus, Grenfell Campus and the Marine Institute is received. With regard to inter-campus consultation, academic units are asked to provide evidence of consultation with other “appropriate” academic units. Please note, however, that the Senate Committee on Undergraduate Studies may determine the need for additional consultation.

The Senate Committee on Undergraduate Studies has also agreed to establish a sub-committee to review the process of consultation with a view to identifying possibilities for increased efficiencies. The sub-committee will also be mandated to consider whether four weeks for consultation is appropriate. Please consider providing your feedback on this matter to the sub-committee. Your comments should be forwarded to my attention at your earliest possible convenience.

Please note that any calendar changes previously submitted to the Senate Committee on Undergraduate Studies must include the evidence of consultation noted above.

I apologize for the frustration that the previous memorandum of October 16th may have caused.

If you have any questions regarding the above, please get in touch with me by phone at 864-4410 or by e-mail at importer@mun.ca.

Thank you,

Jennifer Porter
Deputy Registrar (Acting) and Secretary to the Committee

cc: Chairpersons and Secretaries, Undergraduate Studies Committees

PS: Please forward this memorandum to all staff in your academic unit who are involved in the preparation of calendar changes.

In order to expedite the approval process and to provide documentation to Senate that is clear and concise, calendar changes submitted to the Senate Committee on Undergraduate Studies must be submitted in electronic format in both MS-Word/Word Perfect and PDF versions.
October 09, 2013

To: Secretary, Faculty of Science

From: Secretary, Academic Council, School of Music

Subject: School of Music Representative to the Faculty of Science

On behalf of the Academic Council, School of Music, I would like to advise that Dr. Nathan Cook will be our representative on the Council of the Faculty of Science.

Sincerely,

[Signature]

Dr. Kristina Szutor
Secretary, Academic Council
kszutor@mun.ca
864-3560
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
       Committee on Undergraduate Studies, Faculty of Science

SUBJECT: Calendar Changes and New Course Proposals

At a meeting held on October 28, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the following new course proposals and Calendar changes be forwarded to Faculty Council for approval:

1. Department of Computer Science
   (i) New Course- Computer Science 2510- Programming C/C++
   (ii) New Course- Computer Science 4750- Introduction to Natural Language Programming
   (iii) Revisions to current courses and programs

2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703- Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics- revisions to current Statistics courses

Joan Burry
Assistant Registrar and
Secretary, Committee
on Undergraduate Studies,
Faculty of Science
Proposal - New Course
COMP 2510 Programming in C/C++

RESOURCE IMPLICATIONS: Instructional Costs

The current departmental computing facilities, software, faculty, instructional staff, and technical support staff will be utilized. Additional lab materials and equipment are within the current resource framework of the Department of Computer Science.

RESOURCE IMPLICATIONS: Library Holdings and/or Other Resources Required

Covered in the departmental budget. Teaching commitment is one regular (three credit hours) lecture offering and a three-hour lab weekly component.

The costs associated with new program/course(s) can be met from within the existing budget allocation or authorized new funding for the Department of Computer Science.

Library Report is attached.

Signature of Unit Head (if appropriate): __________________________________________

Date: ______________________________________________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

____________________________________________________________________________

Date: ______________________________________________________________________
Proposal - New Course
COMP 2510 Programming in C/C++
Page 2

Course Number and Title
2510 Programming in C/C++

Abbreviated Course Title
Programming in C/C++

Calendar Description
2510 Programming in C/C++ is a comprehensive treatment of the C/C++ programming languages. It is intended for students with some first programming experience. This course starts with a discussion of fundamentals of C and C++, moves on to the object-oriented aspects of C++, and introduces some advanced topics. It is an essential course for mastering the power of this rich programming language.
LH: 3
PR: COMP 1510 or COMP 1550 or COMP 1700 or COMP 1710 or ENGI 1020, or equivalent
CR: ENGI 3891

Secondary Changes

Rationale
C++ is an object-oriented relative of C and one of the most widespread computer languages today. Especially, in the computer and software industry, it is one of the most sought-after skills. Many of the more recent computer languages and advanced data processing techniques require previous exposure to C/C++. This course is open to students from other disciplines.

Consultations
Distributed to the Faculties of Science, Arts, Business Administration, Education, Engineering and Applied Science, Medicine, Schools of Human Kinetics and Recreation, Music, Nursing, Pharmacy, Social Work, Grenfell Campus and Marine Institute.

Course Outline and Method of Evaluation
* Overview of C (3 weeks)
  * fundamental data types and conversion
  * flow control and functions
Proposal - New Course
COMP 2510 Programming in C/C++
Page 3

* pointers, compound types, and structures
* preprocessing
* essential libraries
* memory models, separate compilation, storage duration, scope, and linkage, and
  namespaces
* Objects and classes (3 weeks)
  * class constructors and destructors
  * class scope
  * this pointer
  * function and operator overloading
  * friends
* Inheritance (3 weeks)
  * access control
  * single and multiple inheritance
  * polymorphism
  * class type cast
  * static and dynamic binding
  * abstract base classes
* More topics (3 weeks)
  * runtime type identification
  * the string class
  * exceptions
  * smart pointers
  * class templates
  * Standard Template Library

Method of Evaluation

Assignments (5-8)  20%
Labs (10)           10%
Midterm Exam       20%
Final Exam         50%

Suggested Texts (one of the following):

Eckel, B., *Thinking in C++*
Prata, S., *C++ Primer Plus*
Davis, *C++ for Dummies*

Instructor(s)

Due to the generic nature of the subject matter, a number of faculty members are capable
of delivery of this course.
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number Computer Science 2510 Programming in C/C++

Abbreviated Course Title Programming in C/C++

Calendar Description

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LH: 3
PR: COMP 1510 or COMP 1550 or COMP 1700 or COMP 1710 or ENGI 1020, or equivalent
CR: ENGI 3891

Rationale

C++ is an object-oriented relative of C and one of the most widespread computer languages today. Especially, in the computer and software industry, it is one of the most sought-after skills. Many of the more recent computer languages and advanced data processing techniques require previous exposure to C/C++. This course is open to students from other disciplines.

Consultations Sought From

| Department of Biochemistry | Comments Received | No |
| Department of Biology | No |
| Department of Chemistry | No |
| Department of Earth Sciences | No |
| Department of Economics | No |
| Department of Geography | No |
| Department of Mathematics and Statistics | No |
| Department of Ocean Sciences | No |
| Department of Physics and Physical Oceanography | No |
| Department of Psychology | No |
| Faculty of Arts | Yes |
| Faculty of Business Administration | No |
| Faculty of Education | No |
| Faculty of Engineering and Applied Science | Yes |
| Faculty of Medicine | No |
| School of Human Kinetics and Recreation | Yes |
SUMMARY PAGE FOR SENATE
Approval Form
Page 2

Consultations Sought From

School of Music
School of Nursing
School of Pharmacy
School of Social Work
Grenfell Campus
Marine Institute

Comments Received
No
No
No
No
No

Library Report Received
Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President
Yes/No

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
27 October 2013

TO: Dr. Wolfgang Banzhaf. Head, Department of Computer Science

FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review
- Proposed New Course COMP2510 Programming in C/C++

The Department of Computer Science has proposed the new course **COMP2510 Programming in C/C++**. C++ is "one of the most widespread computer languages," skills in this programming language are valued in the computer and software industry.

The calendar description states that the course will provide "a comprehensive treatment of the C/C++ programming languages." It will cover the fundamentals of the C and C++ computer programming languages, the object-oriented aspects of C++ and other advanced topics.

The proposed new course **COMP2510 Programming in C/C++** will have no impact on collections activities in the Queen Elizabeth II Library. The Memorial University Libraries currently collect at the Research level in the areas of computer languages, programming and advanced data processing techniques. Ongoing collection development at the current level will support this course.
Journals

The Memorial University Libraries subscribe to several hundred ejournals on computer science including C/C++ and object-oriented programming.

Engineering & Applied Sciences: Computer Science (877 ejournal titles)

Reference & Research

The Memorial University Libraries provide access to several online abstracting and indexing databases useful for computer science:

1. **Guide to Computing Literature** - Comprises over 750,000 records describing journal articles, books, conference papers, dissertations, theses, and technical reports from the Association for Computing Machinery and 3,000+ other computing publishers. Includes links to full-text when available.

2. **IEEE Xplore** - Provides access to literature in computer science, electrical engineering, electronics, and related fields. Includes over 1 million full-text items from over 12,000 publications including IEEE (Institute of Electrical and Electronic Engineers) journals, transactions, magazines, letters, conference proceedings, standards.

3. **Safari Books** - Provides full-text access to ~400 e-books in information technology, including manuals for computer languages, operating systems, hardware, software development, desktop & Web applications, etc.

4. **SpringerLink** - Provides full-text access to over 2,500 journals and 44,000 books published by Springer. The SpringerLink collection has strength in computer science literature including 232 computing related ejournals and 15,930 etexts on computing topics.

**Books**

<table>
<thead>
<tr>
<th>LC Subject Headings related to C/C++</th>
<th>Number of Book/Ebook Titles in the Memorial University Libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>C (Computer program language)</td>
<td>111 titles</td>
</tr>
<tr>
<td>C++ (Computer program language)</td>
<td>218 titles</td>
</tr>
<tr>
<td>C# (Computer program language)</td>
<td>79 titles</td>
</tr>
<tr>
<td>Object-oriented programming (Computer science)</td>
<td>410 titles</td>
</tr>
<tr>
<td>Object-oriented methods (Computer science)</td>
<td>105 titles</td>
</tr>
</tbody>
</table>
Textbooks and Readings

Three textbooks were suggested -


These books are not currently available in the Queen Elizabeth II Library. Both the Prata text and the Davis text are available online in the Safari Books collection - online editions that can be added to the Libraries' holdings overnight. All three texts can be purchased quickly, as required.
Dear Dr. Banzhaf,

Thank you for the invitation to comment on the package of proposed Calendar changes for the Department of Computer Science. At this afternoon's meeting of the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, the following comments were made:

The proposal includes a credit restriction between ENGI 3891 "Advanced Programming" and the new course COMP 2510 "Programming in C/C++". We believe that the reciprocal credit restriction should be put in place as a secondary Calendar change.

On page 245 of the 2011-14 edition of the Calendar, in the entry for ENGI 3891 "Advanced Programming", add the line
CR: Computer Science 2510

The other new course COMP 4750 looks like it might be a good technical elective for students in Computer Engineering. It may be possible to handle problems with prerequisites on a case-by-case basis.

Yours sincerely,

Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science
Memorial University of Newfoundland
http://www. engr .mun.ca/~ggeorge

This electronic communication is governed by the terms and conditions at http://www.mun.ca/cc/policies/electronic_communications_disclaimer_2012.php
November 12, 2013

TO: All Members, Faculty Council of Science
FROM: Joan Burry, Secretary
       Committee on Undergraduate Studies, Faculty of Science
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3. Department of Mathematics and Statistics- revisions to current Statistics courses

Joan Burry
Assistant Registrar and
Secretary, Committee
on Undergraduate Studies,
Faculty of Science
Proposal - New Course
COMP 4750 Introduction to Natural Language Processing

RESOURCE IMPLICATIONS: Instructional Costs

The current departmental computing facilities, software, faculty, instructional staff, and technical support staff will be utilized. Additional lab materials and equipment are within the current resource framework of the Department of Computer Science.

RESOURCE IMPLICATIONS: Library Holdings and/or Other Resources Required

Covered in the departmental budget. Teaching commitment is one regular (three credit hours) lecture offering and a three-hour lab weekly component.

The costs associated with new program/course(s) can be met from within the existing budget allocation or authorized new funding for the Department of Computer Science.

Library Report is attached.

Signature of Unit Head (if appropriate): ________________________________

Date: ________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

______________________________

Date: ________________________________
Proposal - New Course
COMP 4750 Introduction to Natural Language Processing
Page 2

Course Number and Title

4750 Introduction to Natural Language Processing

Abbreviated Course Title

Intro to Natural Lang Process

Calendar Description

4750 Introduction to Natural Language Processing covers tasks involving human languages, such as speech recognition, text understanding, and keyword-based information retrieval which underlie many modern computing applications and their interfaces. To be truly useful, such natural language processing must be both efficient and robust. This course will give an introduction to the algorithms and data structures used to solve key NLP tasks, including utterance understanding and generation and language acquisition, in both of the major algorithmic paradigms used today (rule-based and statistical). The emphasis will be primarily on text-based processing though speech-based processing will be addressed where possible.

LH: 3
PR: COMP 3719 and Statistics 1510

Secondary Changes

Not applicable.

Rationale

The ever-increasing number of people communicating with computer applications (either via stand-alone devices or over the internet) has led to a corresponding ever-increasing demand that this communication be carried out via natural human languages, either as written text or speech. This involves not only the generation of human-comprehensible and discourse-relevant utterances by machines but also the robust and efficient recognition and comprehension of utterances given as input by human beings. A few of the core algorithmic techniques and data structures used in natural language processing (NLP) are treated tangentially in existing courses (e.g., the parsing of text via grammars would be covered in an automata theory or compiler construction course). However, a proper introduction to the field requires an integrated systematic examination of the full range of rule-based and statistical techniques used in NLP in the context of the framework of natural language processing developed within the discipline of linguistics, which requires its own course such as that proposed here.
Proposal - New Course
COMP 4750 Introduction to Natural Language Processing
Page 3

Consultations

Distributed to the Faculties of Science, Arts, Business Administration, Education, Engineering and Applied Science, Medicine, Schools of Human Kinetics and Recreation, Music, Nursing, Pharmacy, Social Work, Grenfell Campus and Marine Institute.

Course Outline and Method of Evaluation

* Overview of Natural Language Processing (1 week)
* Background: Linguistics and Language Processing (overview of classical linguistics; representations of natural language utterances, grammars, and lexicons; implementation of processes on natural language representations) (3 weeks)
* Utterance comprehension (2 ½ weeks)
* Utterance production (1 week)
* Language acquisition (1 week)
* Special applications, e.g., language-language translation, question answering, text mining (1 ½ weeks)
* Student presentations (2 weeks)

Method of Evaluation

Assignments 20%
In-Class Examinations (2) 40%
In-Class Presentation(s) 10%
Course Project 30%

Texts and References


Instructor(s)

Dr. Todd Wareham
Dr. Adrian Fiech
Dr. Lourdes Peña-Castillo
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number Computer Science 4750 Introduction to Natural Language Processing

Abbreviated Course Title Intro to Natural Lang Process

Calendar Description

4750 Introduction to Natural Language Processing covers tasks involving human languages, such as speech recognition, text understanding, and keyword-based information retrieval which underlie many modern computing applications and their interfaces. To be truly useful, such natural language processing must be both efficient and robust. This course will give an introduction to the algorithms and data structures used to solve key NLP tasks, including utterance understanding and generation and language acquisition, in both of the major algorithmic paradigms used today (rule-based and statistical). The emphasis will be primarily on text-based processing though speech-based processing will be addressed where possible.

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PR: COMP 3719 and Statistics 1510

Rationale

The ever-increasing number of people communicating with computer applications (either via stand-alone devices or over the internet) has led to a corresponding ever-increasing demand that this communication be carried out via natural human languages, either as written text or speech. This involves not only the generation of human-comprehensible and discourse-relevant utterances by machines but also the robust and efficient recognition and comprehension of utterances given as input by human beings. A few of the core algorithmic techniques and data structures used in natural language processing (NLP) are treated tangentially in existing courses (e.g., the parsing of text via grammars would be covered in an automata theory or compiler construction course). However, a proper introduction to the field requires an integrated systematic examination of the full range of rule-based and statistical techniques used in NLP in the context of the framework of natural language processing developed within the discipline of linguistics, which requires its own course such as that proposed here.

Consultations Sought From

Department of Biochemistry
Department of Biology
Department of Chemistry
Department of Earth Sciences

Comments Received

No
No
No
No
**SUMMARY PAGE FOR SENATE**  
Approval Form  
Page 2

**Consultations Sought From**

<table>
<thead>
<tr>
<th>Department</th>
<th>Comments Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Economics</td>
<td>No</td>
</tr>
<tr>
<td>Department of Geography</td>
<td>No</td>
</tr>
<tr>
<td>Department of Mathematics and Statistics</td>
<td>No</td>
</tr>
<tr>
<td>Department of Ocean Sciences</td>
<td>No</td>
</tr>
<tr>
<td>Department of Physics and Physical Oceanography</td>
<td>No</td>
</tr>
<tr>
<td>Department of Psychology</td>
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<td>Marine Institute</td>
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</table>

**Library Report Received**  
Yes

**Approved by Dean, Associate Vice-President (Academic) or Vice-President**  
Yes/No

**Name**

--------------------------------------------------------------------------------------------------------------------

**FOR OFFICE USE ONLY**

**APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES**

**Chair:**  
(No text present)

**Secretary:**  
(No text present)

**Date:**  
(No text present)
28 October 2013

TO:     Dr. Wolfgang Banzhaf. Head, Department of Computer Science
FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review -
Proposed New Course COMP4750 Introduction to Natural Language Processing

The Department of Computer Science has proposed the new course COMP4750 Introduction to Natural Language Processing. NLP covers "tasks involving human languages, such as speech recognition, text understanding and keyword-based information retrieval."

The proposed course will provide an "integrated systematic examination of the full range of rule-based and statistical techniques used in NLP." It will introduce the "algorithms and data structures used to solve NLP tasks." The course will cover linguistics, language acquisition and processing, and representations of natural language utterances, grammars and lexicons. Utterance comprehension and production will be emphasized.

The proposed course, COMP4750 Introduction to Natural Language Processing, will have no impact on collections activities in the Queen Elizabeth II Library. The Memorial University Libraries currently collect at the Research level for areas of natural language processing. Ongoing collection development at the current level will support this course.
X

D. E. Taylor-Harding

Dianne E. Taylor-Harding
Librarian responsible for Computer Science
Journals

The Memorial University Libraries subscribe to several hundred ejournals on computer science including natural language programming -

Engineering & Applied Sciences: Computer Science (377 ejournal titles)

Reference & Research

The Memorial University Libraries provide access to several online abstracting and indexing databases useful for computer science -

1. Guide to Computing Literature - Comprises over 750,000 records describing journal articles, books, conference papers, dissertations, theses, and technical reports from the Association for Computing Machinery and 3,000+ other computing publishers. Includes links to full-text when available.

2. IEEE Xplore - Provides access to literature in computer science, electrical engineering, electronics, and related fields. Includes over 1 million full-text items from over 12,000 publications including IEEE (Institute of Electrical and Electronic Engineers) journals, transactions, magazines, letters, conference proceedings, standards.

3. Safari Books - Provides full-text access to ~400 e-books in information technology, including manuals for computer languages, operating systems, hardware, software development, desktop & Web applications, etc.

4. SpringerLink - Provides full-text access to over 2,500 journals and 44,000 books published by Springer, Apress and related publishing partners. The SpringerLink collection has strength in computer science literature including 232 computing related ejournals and 15,930 etexts on computing topics.

Books

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<th>LC Subject Headings related to Natural Language Processing</th>
<th>Number of Book/Ebook Titles in the Memorial University Libraries</th>
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<td>Artificial intelligence</td>
<td>111 titles</td>
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<td>Electronic data processing</td>
<td>2,644 titles</td>
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<td>Human-computer interaction</td>
<td>692 titles</td>
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<tr>
<td>Natural language processing (Computer science)</td>
<td>206 titles</td>
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<tr>
<td>Semantic computing</td>
<td>20 titles</td>
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</tbody>
</table>

St. John's, Newfoundland, Canada A1B 3Y1
Tel: (709) 864-7421 Fax: (709) 864-2153
Textbooks

One textbook was suggested:


This text is available online to users of Memorial University Libraries through the Safari Books collection.
Date: Wed, 18 Sep 2013 15:12 44 -0230
From: Engineering Consultations <engrconsult@mun.ca>
To: cs-chair <cs-chair@mun.ca>
Cc: Andrew Fisher <aafisher@mun.ca>, "Naterer, Greg" <gnaterer@mun.ca>, Jayde Edmunds <edmunsj@mun.ca>, Yvonne King <yvonne@mun.ca>, Dennis Peters <dpeters@mun.ca>, Glyn George <glyn@mun.ca>
Subject: Calendar Changes, Computer Science

Dear Dr. Banzhaf,

Thank you for the invitation to comment on the package of proposed Calendar changes for the Department of Computer Science. At this afternoon’s meeting of the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, the following comments were made:

The proposal includes a credit restriction between ENGI 3891 “Advanced Programming” and the new course COMP 2510 “Programming in C/C++”. We believe that the reciprocal credit restriction should be put in place as a secondary Calendar change:

On page 245 of the 2013-14 edition of the Calendar, in the entry for ENGI 3891 “Advanced Programming”, add the line
CR: Computer Science 2510

The other new course COMP 4750 looks like it might be a good technical elective for students in Computer Engineering. It may be possible to handle problems with prerequisites on a case-by-case basis.

Yours sincerely,

Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science
Memorial University of Newfoundland
http://www.engr.mun.ca/~ggeorge

This electronic communication is governed by the terms and conditions at http://www.mun.ca/cc/policies/electronic_communications_disclaimer_2012.php
Hi Dr. Banzhaf:

Please see comments below from the Head, Department of Linguistics.

Best regards,

Darlene Kennedy
Assistant to the Dean
Faculty of Arts
Memorial University of Newfoundland
St. John's, NL
A1C 5S7

Telephone: (709) 864-3179
Fax: (709) 864-2135
dkennedy@mun.ca
www.mun.ca/arts

From: Arts
Sent: October-01-13 3:46 PM
To: Kennedy, Darlene
Subject: FW: Comments on proposed COMP 4750

From: phil.branigan@gmail.com [mailto:phil.branigan@gmail.com] On Behalf of Phil Branigan
Sent: October 01-13 3:02 PM
To: Arts
Subject: Comments on proposed COMP 4750

The Department of Linguistics is pleased to see that this course is being proposed, although we are surprised not to have been consulted earlier in the process, since there are clearly substantial connections between the material which will be covered in this course and a good deal of the content discussed in several of our introductory courses.
Certainly a student who has taken these linguistics courses will find some overlap with the material in this course. And it would be preferable, in our opinion, that this course always be taught by an instructor who actually has training in Linguistics, as Dr. Wareham has.

These concerns notwithstanding, we would support this course proposal, as we appreciate the practical difficulties which would arise if Computer Science students were required have Linguistics prerequisites for a specialised 4th year course. In our view, it is simply better to have this course proceed than not.

Phil Branigan
Associate Professor and Head
Department of Linguistics
Memorial University of Newfoundland
St. John's, NL, A1B 3X9
Tel. (709) 864-3017
Fax (709) 864-4000

This electronic communication is governed by the terms and conditions at http://www.mun.ca/cc/policies/electronic_communications_disclaimer_2012.php
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
       Committee on Undergraduate Studies, Faculty of Science

SUBJECT: Calendar Changes and New Course Proposals

At a meeting held on October 28, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the following new course proposals and Calendar changes be forwarded to Faculty Council for approval:

1. Department of Computer Science
   (i) New Course- Computer Science 2510-Programming C/C++
   (ii) New Course- Computer Science 4750- Introduction to Natural Language Programming
   (iii) Revisions to current courses and programs

2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703-Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics-revisions to current Statistics courses

Joan Burry
Assistant Registrar and
Secretary: Committee on Undergraduate Studies,
Faculty of Science
Proposal
Calendar Change to Existing Course - COMP-1550

Course Number and Title
1550 Introduction to Multimedia Application Development

Proposed Change(s) to Calendar Description
Change Lab hours from two to three hours.

Proposed Calendar Description 2014-2015
1550 Introduction to Multimedia Application Development is an introduction to programming and computer science with an emphasis on the development of multimedia applications. The course introduces the fundamental principles of programming, including object-oriented and event-driven programming, how to use and create classes and methods and combine them with multimedia libraries to produce animations, handle input from keyboard and mouse, and import sounds and videos to produce multimedia applications which can be directly deployed on the Internet. LH: 2 3

Rationale for Change(s)
After initial offering(s) of the course, it was determined that a lab of three hours would be more appropriate than a lab of two hours.

Consultations

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Proposal for Change to Existing Course COMP-1550
Approval Form
Page 2

Faculty of Medicine No
School of Human Kinetics and Recreation Yes
School of Music No
School of Nursing No
School of Pharmacy No
School of Social Work No
Grenfell Campus No
Marine Institute No

Library Report Received Yes

Library Holdings and/or Other Resources Required

Prerequisite change does not affect library holdings and/or other resources.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for __Department of Computer Science__.

Signature of Unit Head (if appropriate): __________________________________________

Date: ________________________________________________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

___________________________________________________________________________

Date: ________________________________________________________________________
SUMMARY PAGE FOR SENATE

Approval Form

**Course Title and Number** Computer Science 1550 Introduction to Multimedia Application Development

**Abbreviated Course Title** Intro Multimedia Appl Dvlp

**Calendar Description Change(s)**

1550 Introduction to Multimedia Application Development is an introduction to programming and computer science with an emphasis on the development of multimedia applications. The course introduces the fundamental principles of programming, including object-oriented and event-driven programming, how to use and create classes and methods and combine them with multimedia libraries to produce animations, handle input from keyboard and mouse, and import sounds and videos to produce multimedia applications which can be directly deployed on the Internet. LH: 2 3

**Rationale**

After initial offering(s) of the course, it was determined that a lab of three hours would be more appropriate than a lab of two hours.

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Consultations Sought From
School of Social Work
Grenfell Campus
Marine Institute

Comments Received
No
No
No

Library Report Received
Yes

Approved by Dean, Associate Vice-President (Academic) or Vice-President
Yes/No

Name ________________________________

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: ________________________________
Secretary: ____________________________
Date: ________________________________
24 September 2013

TO: Dr. Wolfgang Banzhaf, Head, Department of Computer Science
FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review: Proposed Calendar Change for Computer Science course COMP1550

The Department of Computer Science has proposed a calendar change for COMP1550. Laboratory hours will be changed from two to three hours.

The proposed change will have no impact on collections activities in the Queen Elizabeth II Library.

The Memorial University Libraries will continue to collect materials covering Computer Science to support undergraduate, graduate and faculty research and study at the University.

9/24/2013

X D. E. Taylor-Harding
Dianne E. Taylor-Harding
Collections Librarian, Mathematics & Statistics
Proposal
Calendar Change to Existing Course - COMP-3710

Course Number and Title
3710 Vocational Languages

Proposed Change(s) to Calendar Description

Proposed Calendar Description 2014-2015

3710 Vocational Languages is a study of several programming languages of vocational significance. (e.g., a selection from C, C++, Prolog, Perl, Python and LISP) The use of appropriate programming paradigms to solve some significant problems will be illustrated.
PR: COMP 2711

Rationale for Change(s)

The introduction of the new course, COMP 2510 Introduction to C/C++, requires that this course description be altered accordingly.

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Proposal to Change Existing Course COMP-3710
Page 2

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Comments Received

Library Report Received

Yes

Library Holdings and/or Other Resources Required

Prerequisite change does not affect library holdings and/or other resources.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for **Department of Computer Science**.

Signature of Unit Head (if appropriate):

_________________________________________________________________

Date:

_________________________________________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

_________________________________________________________________

Date:

_________________________________________________________________
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number  Computer Science 3710 Vocational Languages

Abbreviated Course Title  3710 Vocational Languages

Calendar Description Change(s)

3710 Vocational Languages is a study of several programming languages of vocational significance. (e.g., a selection from C, C++, Prolog, Perl, Python and LISP) The use of appropriate programming paradigms to solve some significant problems will be illustrated.
PR: COMP 2711

Rationale

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Library Report Received

Yes

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
MEMORIAL UNIVERSITY

Collections Development Division
Queen Elizabeth II Library
St. John's, Newfoundland, Canada
A1B 3Y1

24 September 2013

TO: Dr. Wolfgang Banzhaf, Head, Department of Computer Science

FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review – Proposed Calendar Change for Computer Science course COMP3710

The Department of Computer Science has proposed a calendar change for COMP3710. The calendar description will be altered so that specific computer languages are not listed.

The proposed change will have no impact on collections activities in the Queen Elizabeth II Library.

The Memorial University Libraries will continue to collect materials covering Computer Science to support undergraduate, graduate and faculty research and study at the University.

9/24/2013

X D. E. Taylor-Harding

Dianne E. Taylor-Harding
Collections Librarian, Mathematics & Statistics

St. John's, Newfoundland, Canada A1B 3Y1
Tel: (709) 864-7421 Fax: (709) 864-2153
Proposal
Calendar Change to Existing Course - COMP-3718

Course Number and Title
3718 Programming in the Small

Proposed Change(s) to Calendar Description

Current Calendar Description 2013-2014

3718 Programming in the Small demonstrates the tools and techniques used in the construction of small software systems. The software tools and techniques to be covered include analysis and design of software components, software construction tools (e.g., linkers, builders, debuggers), software library use and design, and system integration. PR: COMP 2711 and Mathematics 2320.

Proposed Calendar Description

3718 Programming in the Small (F) demonstrates the tools and techniques used in the construction of small software systems. The software tools and techniques to be covered include analysis and design of software components, software construction tools (e.g., linkers, builders, debuggers), software library use and design, and system integration. PR: COMP 2711 and Mathematics 2320.

Rationale for Change(s)

Recent offerings of COMP-3718 do not require the Mathematics 2320 prerequisite.

Consultations

<table>
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<th>Consultations Sought From</th>
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Proposal to Change Existing Course COMP-3718  
Page 2

Consultations Sought From                    Comments Received
Faculty of Business Administration            No
Faculty of Education                          No
Faculty of Engineering and Applied Science    Yes
Faculty of Medicine                          No
School of Human Kinetics and Recreation       Yes
School of Music                              No
School of Nursing                            No
School of Pharmacy                           No
School of Social Work                        No
Grenfell Campus                              No
Marine Institute                             No

Library Report Received                      Yes

Library Holdings and/or Other Resources Required

Prerequisite change does not affect library holdings and/or other resources.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for ___Department of Computer Science___.

Signature of Unit Head (if appropriate): ____________________________________________

Date: ______________________________________________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date: ______________________________________________________________________
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number: Computer Science 3718 Programming in the Small

Abbreviated Course Title: Programming in the Small

Calendar Description Change(s)

3718 Programming in the Small demonstrates the tools and techniques used in the construction of small software systems. The software tools and techniques to be covered include analysis and design of software components, software construction tools (e.g., linkers, builders, debuggers), software library use and design, and system integration. PR: COMP 2711 and Mathematics 2320.

Rationale

Recent offerings of COMP-3718 do not require the Mathematics 2320 prerequisite.

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Library Report Received

Yes

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
24 September 2013

TO:      Dr. Wolfgang Banzhaf, Head, Department of Computer Science

FROM:    Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review –
          Proposed Calendar Change for Computer Science course COMP3718

The Department of Computer Science has proposed a calendar change for COMP3718. The calendar description will be altered to change course pre-requisites.

The proposed change will have no impact on collections activities in the Queen Elizabeth II Library.

The Memorial University Libraries will continue to collect materials covering Computer Science to support undergraduate, graduate and faculty research and study at the University.

9/24/2013

D. E. Taylor-Harding
Dianne E. Taylor-Harding
Collections Librarian, Mathematics & Statistics
Proposal
Calendar Change to Existing Course - COMP-4766

Course Number and Title

4766 Introduction to Autonomous Robotics

Proposed Change(s) to Calendar Description

Add Lab of three hours.

Proposed Calendar Description 2014-2015

4766 Introduction to Autonomous Robotics examines the fundamental constraints, technologies, and algorithms of autonomous robotics. The focus of this course will be on computational aspects of autonomous wheeled mobile robots. The following topics will be covered: major paradigms in robotics, methods of locomotion, kinematics, simple control systems, sensor technologies, stereo vision, feature extraction, modelling uncertainty of sensors and positional information, localization, SLAM, obstacle avoidance, and 2-D path planning. PR: COMP 2711, Mathematics 2000, Mathematics 2050, and Statistics 1510 or 2550 or the former Statistics 2510. LH: 3.

Rationale for Change(s)

A formally scheduled lab is required to give time for students to demonstrate their work, see demonstrations from the instructor, and participate in hands-on tasks.

Consultations

<table>
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Proposal to Existing Course COMP-4766
Approval Form
Page 2

**Consultations Sought From** | **Comments Received**
--- | ---
Faculty of Medicine | No
School of Human Kinetics and Recreation | Yes
School of Music | No
School of Nursing | No
School of Pharmacy | No
School of Social Work | No
Grenfell Campus | No
Marine Institute | No

**Library Report Received**
Yes

**Library Holdings and/or Other Resources Required**

Prerequisite change does not affect library holdings and/or other resources.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for **Department of Computer Science**.

Signature of Unit Head (if appropriate):

Date:

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date:
SUMMARY PAGE FOR SENATE

Approval Form

**Course Title and Number** Computer Science 4766 Introduction to Autonomous Robotics

**Abbreviated Course Title** Intro to Autonomous Robotics

**Calendar Description Change(s)**

4766 Introduction to Autonomous Robotics examines the fundamental constraints, technologies, and algorithms of autonomous robotics. The focus of this course will be on computational aspects of autonomous wheeled mobile robots. The following topics will be covered: major paradigms in robotics, methods of locomotion, kinematics, simple control systems, sensor technologies, stereo vision, feature extraction, modelling uncertainty of sensors and positional information, localization, SLAM, obstacle avoidance, and 2-D path planning. PR: COMP 2711, Mathematics 2000, Mathematics 2050, and Statistics 1510 or 2550 or the former Statistics 2510. **LH: 3.**

**Rationale**

A formally scheduled lab is required to give time for students to demonstrate their work, see demonstrations from the instructor, and participate in hands-on tasks.

**Consultations Sought From**

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<th>Department</th>
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### Library Report Received

Yes

### Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

### Name

Name ____________________________

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: ____________________________

Secretary: _________________________

Date: _____________________________
Collections Development Division
Queen Elizabeth II Library
St. John's, Newfoundland, Canada
A1B 3Y1

24 September 2013

TO: Dr. Wolfgang Banzhaf, Head, Department of Computer Science
FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review – Proposed Calendar Change for Computer Science course COMP4766

The Department of Computer Science has proposed a calendar change for COMP4766: Introduction to Autonomous Robotics. The calendar description will be altered to add a formally scheduled three hour laboratory for the course.

The proposed change will have no impact on collections activities in the Queen Elizabeth II Library.

The Memorial University Libraries will continue to collect materials covering Computer Science to support undergraduate, graduate and faculty research and study at the University.

9/24/2013

X D. E. Taylor-Harding
Dianne E. Taylor-Harding
Collections Librarian, Mathematics & Statistics

St. John's, Newfoundland, Canada A1B 3Y1 Tel: (709) 864-7421 Fax: (709) 864-2153
Proposal
Calendar Change to Existing Course - COMP-4770

Course Number and Title

4770 Team Project

Proposed Change(s) to Calendar Description

Proposed Calendar Description 2014-2015

4770 Team Project has as its main objective to develop a working prototype of a software system as a team effort. A group of students will work on a project for a term, experiencing the advantages and difficulties of team projects. PR: COMP 3715, COMP 3716, COMP 3724, and COMP 3754. AR: Attendance is required at the regularly scheduled team meetings. Failure to attend may result in deregistration from the course.

Rationale for Change(s)

COMP-4770 is a team project course in which students work in groups to develop a working prototype of a software system as a team effort. Each group works on a project for the entire term, experiencing the advantages and difficulties of a team project, and learning about the methods used in the development of a large software system and the milestones which must be met.

At the start of the course, each student is assigned to a group; groups meet in the scheduled time slot periods for the course under the supervision of the course instructor.

Projects are designed to be completed by a team, not by an individual student. Work is split amongst the team members and evaluated as a sequence of four submissions (milestones) at designated dates during the term, with 75% of the course mark allocated to team effort. The remaining 25% is assigned to individual student effort (as part of the team). The entire team will suffer if some member(s) do not attend the group meetings at which their work and progress are discussed.

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Proposal to Existing Course COMP-4770
Approval Form
Page 2

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**Library Report Received**
Yes

**Library Holdings and/or Other Resources Required**

Prerequisite change does not affect library holdings and/or other resources.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for **Department of Computer Science**

Signature of Unit Head (if appropriate): ____________________________

Date: ____________________________________________________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President: _________________________________

Date: ____________________________________________________________________________
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number 4770 Team Project

Abbreviated Course Title Team Project

Calendar Description Change(s)

4770 Team Project has as its main objective to develop a working prototype of a software system as a team effort. A group of students will work on a project for a term, experiencing the advantages and difficulties of team projects. PR: COMP 3715, COMP 3716, COMP 3724, and COMP 3754. AR: Attendance is required at the regularly scheduled team meetings. Failure to attend may result in deregistration from the course.

Rationale

COMP-4770 is a team project course in which students work in groups to develop a working prototype of a software system as a team effort. Each group works on a project for the entire term, experiencing the advantages and difficulties of a team project, and learning about the methods used in the development of a large software system and the milestones which must be met.

At the start of the course, each student is assigned to a group; groups meet in the scheduled time slot periods for the course under the supervision of the course instructor.

Projects are designed to be completed by a team, not by an individual student. Work is split amongst the team members and evaluated as a sequence of four submissions (milestones) at designated dates during the term, with 75% of the course mark allocated to team effort. The remaining 25% is assigned to individual student effort (as part of the team). The entire team will suffer if some member(s) do not attend the group meetings at which their work and progress are discussed.

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**Library Report Received**

Yes

**Approved by Dean, Associate Vice-President (Academic) or Vice-President**

Yes/No

Name ________________________________

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**FOR OFFICE USE ONLY**

**APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES**

Chair: ________________________________

Secretary: ________________________________

Date: ________________________________
24 September 2013

TO: Dr. Wolfgang Banzhaf, Head, Department of Computer Science

FROM: Dianne Taylor-Harding, Collections Development Librarian, Computer Science

SUBJECT: Library Resources Review –
Proposed Calendar Change for Computer Science course COMP4770

The Department of Computer Science has proposed a calendar change for COMP4770. The calendar description will be altered to change the attendance requirement for the course.

The proposed change will have no impact on collections activities in the Queen Elizabeth II Library.

The Memorial University Libraries will continue to collect materials covering Computer Science to support undergraduate, graduate and faculty research and study at the University.

9/24/2013

X D. E. Taylor-Harding
Dianne E. Taylor-Harding
Collections Librarian, Mathematics & Statistics
Proposal
Calendar Change to Existing Program
Department of Computer Science Honours Program
(Software Engineering)

Resource Implications: Instructional Costs

Not applicable for these minor changes to the Honours degree in Computer Science (Software Engineering).

Resource Implications: Library Holdings and/or Other Resources Required

No resource implications for these changes.

Library Report has been requested.

Budget - No associated costs for these minor changes.

Signature of Unit Head (if appropriate): 

Date: 

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date:
Proposal for Calendar Change to Existing Program - Computer Science Honours Program
(Software Engineering)
Page 2

RATIONALE FOR CHANGES

The updates reflect changes in the Computer Science curriculum and the availability and offerings of fourth-year Computer Science courses. The software engineering discipline is concerned with software requirements, system architecture and implementation. The added course requirement supports these items.

CONSULTATIONS

Consultations Sought From                      Comments Received

Department of Biochemistry                     No
Department of Biology                          No
Department of Chemistry                        No
Department of Earth Sciences                   No
Department of Economics                        No
Department of Geography                        No
Department of Mathematics and Statistics       No
Department of Ocean Sciences                   No
Department of Physics and Physical Oceanography No
Department of Psychology                       No
Faculty of Arts                                Yes
Faculty of Business Administration             No
Faculty of Education                           No
Faculty of Engineering and Applied Science     Yes
Faculty of Medicine                            No
School of Human Kinetics and Recreation        Yes
School of Music                                No
School of Nursing                              No
School of Pharmacy                             No
School of Social Work                          No
Grenfell Campus                                No
Marine Institute                                No

COURSE DELETIONS AND ADDITIONS

Proposed changes to the requirements for the degree of Honours in Computer Science (Software Engineering) include:

- delete COMP-4719 and COMP-4759 from clause 2 (a)
Proposal for Calendar Change to Existing Program - Computer Science Honours Program (Software Engineering)  
Page 3

- add new clause 2 (b): Six additional credit hours in Computer Science courses chosen from 4718, 4719, 4721, 4723, 4751, 4753, 4756, 4759, 4766, and 4768.

- renumber previous 2 (b) clause to 2 (c), and previous 2 (c) clause to 2 (d).

CHANGES TO CALENDAR REGULATIONS

As above.

CALENDAR REVISIONS

Current Calendar Description 2013-2014

8.4.3 Honours in Computer Science (Software Engineering) (B.Sc. only)

2. Sixty-three credit hours in Computer Science courses are required for the Honours Degree in Computer Science (Software Engineering), including:
   a. Computer Science 1710, 2710, 2711, 2742, 2760, 3715, 3716, 3718, 3719, 3724, 3725, 3754, 4719, 4759, 4770, and 4780.
   b. Twelve additional credit hours in Computer Science courses at the 4000 level.
   c. Three additional credit hours in Computer Science courses at the 3000 level or beyond.

Revised Calendar Description

8.4.3 Honours in Computer Science (Software Engineering) (B.Sc. Only)

2. Sixty-three credit hours in Computer Science courses are required for the Honours Degree in Computer Science (Software Engineering), including:
   a. Computer Science 1710, 2710, 2711, 2742, 2760, 3715, 3716, 3718, 3719, 3724, 3725, 3754, 4719, 4759, 4770, and 4780.
   b. Six additional credit hours in Computer Science courses, chosen from 4718, 4719, 4721, 4723, 4751, 4753, 4756, 4759, 4766, 4768.
   c. Twelve additional credit hours in Computer Science courses at the 4000 level.
   d. Three additional credit hours in Computer Science courses at the 3000 level or beyond.

Secondary Changes

Not applicable.
SUMMARY PAGE FOR SENATE

Approval Form

Program Title Honours in Computer Science (Software Engineering) (B.Sc. only)

Summary of Changes

Proposed changes to the requirements for the degree of Honours in Computer Science (Software Engineering) include:

- delete COMP-4719 and COMP-4759 from clause 2 (a)
- add new clause 2 (b): Six additional credit hours in Computer Science courses chosen from 4718, 4719, 4721, 4723, 4751, 4753, 4756, 4759, 4766, and 4768.
- renumber previous 2 (b) clause to 2 (c), and previous 2 (c) clause to 2 (d).

Consultations Sought From

Department of Biochemistry  No  
Department of Biology          No  
Department of Chemistry        No  
Department of Earth Sciences   No  
Department of Economics        No  
Department of Geography        No  
Department of Mathematics and Statistics  No  
Department of Ocean Sciences   No  
Department of Physics and Physical Oceanography  No  
Department of Psychology      No  
Faculty of Arts                Yes
Faculty of Business Administration  No  
Faculty of Education           No  
Faculty of Engineering and Applied Science  Yes  
Faculty of Medicine            No  
School of Human Kinetics and Recreation  Yes  
School of Music                No  
School of Nursing              No  
School of Pharmacy             No  
School of Social Work          No  
Grenfell Campus                No  
Marine Institute               No  

Library Report Received       Yes/No
Summary Page for Senate
Page 2

Approved by Dean, Associate Vice-President (Academic) or Vice-President
Yes/No

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
DEPARTMENT OF COMPUTER SCIENCE

Attached are comments received from the request for consultations on the new course proposals, and revisions to current courses and programs for the 2014-2015 University Calendar.
Hi

Thank you for sending this to the School of Human Kinetics and Recreation. We have reviewed the courses and calendar changes and confirm they do not impact our programs.

Regards,

Linda

Linda E. Rohr PhD
Associate Professor
Associate Dean (acting) Undergraduate Studies
School of Human Kinetics and Recreation
Memorial University
St. John's, NL
709.864.6202
709.864.7531 (fax)
PE 2025

On 9/10/13 2:04 PM, "Hickey, Marie" <mehickey@mun.ca> wrote:

> FYI and response.
> Marie
>
> -----Original Message-----
> From: cs-chair [mailto:cs-chair@MUN.CA]
> Sent: September-10-13 12:53 PM
> To: Biochemistry Head; Marino, Paul; chemhead@MUN.CA; fhancher@MUN.CA;
> math-head@MUN.CA; Fletcher, Garth; bdelyoung@MUN.CA;
> psychology.head@MUN.CA; lynch@MUN.CA; cmacher@MUN.CA; Arts; Zerbe;
> Wilfred; Anderson, Kirk D.; dean.engineering@MUN.CA; dean@med.mun.ca;
> Waterman, Ellen; McPetridge-Dudle, Judith; Nensman, Linda; Hickey,
> Marie; Hardy Cox, Donna; vpoffice@grenfell.mun.ca;
> mngconsultations@h.mun.ca
> Subject: New Course Offerings and Calendar Changes from Computer Science
>
> Hello,
>
> The Department of Computer Science is proposing the introduction of two
> new courses, COMP-2510: Programming in C/C++ and COMP-4750: Introduction
> to Natural Language Programming. Copies of these course proposals are
> attached for your review.
>
> As well, revisions to current courses and programs are proposed and are
> attached.
>
> We would appreciate receiving any comments by Monday, October 7, 2013.
>
> Regards,
> Wolfgang Banzhaf
> Department Head

Department of Computer Science
Memorial University
St. John's, NL, A1B 3X5
Phone: 709/737-5522
Fax: 709/737-5663
Date: Wed, 18 Sep 2013 15:12:44 -0230
From: Engineering Consultations <engrconsult@mun.ca>
To: cs-chair@mun.ca
Cc: Andrew Fisher <adfishe@mun.ca>, Naterer, Greg <gnaterer@mun.ca>, Jayde Edmunds <edmundoj@mun.ca>, Yvonne King <yvonnel@mun.ca>, Dennis Peters <dpeters@mun.ca>, Glyn George <glyn@mun.ca>

Subject: Calendar Changes, Computer Science

Dear Dr. Banzhaf,

Thank you for the invitation to comment on the package of proposed Calendar changes for the Department of Computer Science. At this afternoon's meeting of the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, the following comments were made:

The proposal includes a credit restriction between ENGI 3891 "Advanced Programming" and the new course COMP 2510 "Programming in C/C++". We believe that the reciprocal credit restriction should be put in place as a secondary Calendar change:

On page 245 of the 2011-14 edition of the Calendar, in the entry for ENGI 3891 "Advanced Programming", add the line
CR: Computer Science 2510

The other new course COMP 4750 looks like it might be a good technical elective for students in Computer Engineering. It may be possible to handle problems with prerequisites on a case-by-case basis.

Yours sincerely,

Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science
Memorial University of Newfoundland
http://www.engr.mun.ca/~ggeorge

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Date: Tue, 1 Oct 2013 15:49:28 -0230
From: "Kennedy, Darlene" <dkennedy@mun.ca>
To: cs-chair@mun.ca
Subject: FW: Comments on proposed COMP 4750

Hi Dr. Banzhaf:

Please see comments below from the Head, Department of Linguistics.

Best regards,

Darlene Kennedy
Assistant to the Dean
Faculty of Arts
Memorial University of Newfoundland
St. John's, NL
A1C 5S7

Telephone: (709) 864-3179
Fax: (709) 864-2135
dkennedy@mun.ca
www.mun.ca/arts

From: Arts
Sent: October-01-13 3:46 PM
To: Kennedy, Darlene
Subject: FW: Comments on proposed COMP 4750

The department of Linguistics is pleased to see that this course is
being proposed, although we are surprised not to have been consulted
earlier in the process, since there are clearly substantial connections
between the material which will be covered in this course and a good
detail of the content discussed in several of our introductory courses.
(Linguistics 1101 and Linguistics 1102, in particular.) Certainly a student who has taken these linguistics courses will find some overlap with the material in this course. And it would be preferable, in our opinion, that this course always be taught by an instructor who actually has training in Linguistics, as Dr. Wareham has.

These concerns notwithstanding, we would support this course proposal, as we appreciate the practical difficulties which would arise if Computer Science students were required have Linguistics prerequisites for a specialized 4th year course. In our view, it is simply better to have this course proceed than not.

Phil Branigan
----------------
Associate Professor and Head

Department of Linguistics
Memorial University of Newfoundland
St. John's, NL, A1B 3X9
Tel. (709) 864-1017
Fax (709) 864-4000

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Proposal
Calendar Change to Existing Program
Computer Science CIIO Program

Resource Implications: Instructional Costs

Not applicable for these minor changes to the Computer Industry Internship Option (CIIO).

Resource Implications: Library Holdings and/or Other Resources Required

No resource implications for these changes.
Library Report has been requested.
Budget - No associated costs for these minor changes.

Signature of Unit Head (if appropriate):

Date:

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date:
RATIONAL FOR CHANGES

Proposed changes to the requirements for the CIIO Program include:

- The reference to B.Sc, and B.Sc. Honours students has been removed to allow B.A. students to take part in the Computer Industry Internship Option.

- The student must return to University as a full-time student after the CIIO is finished, as the CIIO is intended to complement students’ programs.

- Minor changes to Section 8.4.4.4 Expectation of Work

- The on-the-job performance and the final work report are recorded separately on the transcript, along with the overall mark. There will be three notations on the transcript rather than one. This is consistent with several other undergraduate co-op programs.

CONSULTATIONS

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Library Report Received

Yes/No

CALENDAR REVISIONS

From Current Calendar Description 2013-2014

8.4.4 Computer Industry Internship Option (CIIO):

The Computer Industry Internship Option (CIIO) provides an opportunity for qualified students to obtain rewarding placements that help them develop practical skills in a real work setting before graduation. The CIIO is available to Computer Science Majors (B.Sc. and B.Sc. Honours only) who will typically apply between their third and fourth year of studies.

8.4.4.1 Admission Requirements

In order to be considered for admission to the CIIO, an applicant must:

1. be a declared Computer Science Major;
2. have successfully completed Computer Science 1710, 2710, 2711, 2742, 2760, 3716, and any two other core 3000-level computer science courses; and
3. have at least one computer science course left to complete after the internship, have at least 15 credit hours remaining after the internship in order to satisfy degree requirements, three of which must be in Computer Science.
4. be expected to return to University as a full-time student after the internship.

In addition to meeting the above applicants are also subject to academic performance.

8.4.4.4 Expectation of Work

Within two weeks of starting the internship, students are required to submit a list of their work term internship objectives. They are also required to submit a progress report due the last day of classes of each semester in which they are working. The work term internship objectives and progress reports are to be submitted to the Co-ordinator.

At the end of the internship period, students are required to submit a final internship report which will include a description of their internship projects and activities as well as their original objectives and accomplishments. The final internship report is to be submitted to the Co-ordinator by the last day of classes of the semester in question. A completed Employer Evaluation Form should be submitted to the Co-ordinator at the end of the internship period each semester.
Proposal for Calendar Change to Existing Program - Computer Science CII0 Program

Page 4

8.4.4.5 Registration, Assessment of Performance, and Assignment of Grades:

Students must register for the course Computer Science 3700 every semester during their internship.

Computer Science 3700 is a non-credit course open only to students who have been accepted into the Internship Program.

During the internship, the employer and intern will complete student performance evaluations every four months and will submit them to the Co-ordinator. The final assessment of total work performed is the responsibility of the Co-ordinator, and will be based upon both input from the employer and the intern’s final internship report.

At the end of the internship, each intern will be assigned one of the following grades after the final assessment of their performance:

1. Pass with Distinction (PWD): Indicates excellent performance in both the work report and work performance.

2. Pass (PAS): Indicates that performance meets expectations in both the work report and the work performance.

3. Fail (FAL): Indicates failing performance in the work report or the work performance.

The Internship evaluation shall consist of two components:

1. On-the-job Student Performance: Job performance shall be assessed by the Co-ordinator in consultation with the Department using information gathered during the internship and input from the employer. Evaluation of the on-the-job student performance will result in one of the following classifications: PASS WITH DISTINCTION, PASS, FAIL.

2. The Final Internship Report: Evaluation of the final internship report will result in one of the following classifications: PASS WITH DISTINCTION, PASS, FAIL. The evaluation of the on-the-job student performance and the final internship report are recorded separately on the transcript.

Overall evaluation of the internship will result in one of the following final grades being awarded:
PASS WITH DISTINCTION: indicates outstanding performance in both the final internship report and the on-the-job student performance. PASS WITH DISTINCTION has been awarded to each of the final internship report and the on-the-job student performance.

PASS: indicates that performance meets expectations in both the final internship report and on-the-job student performance. The student meets the requirements of a passing mark in the final internship report and on-the-job student performance.

FAIL: indicates failing performance in either the final internship report or on-the-job student performance or both.

Also, the following will be noted in the transcript of the intern:

1. Requirements for the Computer Industry Internship Option have been completed. Internship Duration: - months.

2. A grade of NC (No Credit) for Computer Science 3700 will be awarded in all semesters of the Internship Option prior to the final Semester.

Secondary Changes

Not applicable.
SUMMARY PAGE FOR SENATE

Approval Form

Program Title: Computer Industry Internship Option (CIIO) Program
(Department of Computer Science)

Summary of Changes

Proposed changes to the requirements for the CIIO Program include:

- The reference to B.Sc, and B.Sc. Honours students has been removed to allow B.A. students to take part in the Computer Industry Internship Option.

- The student must return to University as a full-time student after the CIIO is finished, as the CIIO is intended to complement students' programs.

- Minor changes to Section 8.4.4.4 Expectation of Work

- The on-the-job performance and the final work report are recorded separately on the transcript, along with the overall mark. There will be three notations on the transcript rather than one. This is consistent with several other undergraduate co-op programs.

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| Faculty of Engineering and Applied Science | Yes |
| Faculty of Medicine        | No                |
| School of Human
Kinetics and Recreation | Yes |
| School of Music            | No                |
| School of Nursing          | No                |
| School of Pharmacy         | No                |
Consultations Sought From

School of Social Work
Grenfell Campus
Marine Institute

Comments Received

No
No
No

Library Report Received

Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President Yes/No

Name __________________________

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: __________________________

Secretary: ______________________

Date: ___________________________
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
       Committee on Undergraduate Studies, Faculty of Science

SUBJECT: Calendar Changes and New Course Proposals

At a meeting held on October 28, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the following new course proposals and Calendar changes be forwarded to Faculty Council for approval:

1. Department of Computer Science
   (i) New Course- Computer Science 2510-Programming C/C++
   (ii) New Course- Computer Science 4750- Introduction to Natural Language Programming
   (iii) Revisions to current courses and programs

2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703- Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics-revisions to current Statistics courses

Joan Burry
Assistant Registrar and
Secretary, Committee
on Undergraduate Studies,
Faculty of Science
Proposal for New Course  
EASC 3700 Geomorphology

RESOURCE IMPLICATIONS: Instructional Costs

No new resources are required, because this course is a cross listing of an existing course GEOG 3150 Geomorphology. All costs associated with this course are covered under the existing budget of the Department of Geography, which is the department of record.

RESOURCE IMPLICATIONS: Library Holdings and/or Other Resources Required

There are no resource implications for Library Holdings for the same reasons as given above.

The costs associated with new program/course(s) can be met from within the existing budget allocation or authorized new funding for the Department of Geography.

Signature of Unit Head (if appropriate): ______________________________

Date: ______________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President: ______________________________

Date: ______________________________
Course Number and Title

3700 Geomorphology

Abbreviated Course Title

Geomorphology

Calendar Description (in Earth Sciences section)

3700 Geomorphology (same as Geography 3150) is a study of the relationships between geomorphic processes and landforms. Practical work will involve collection of data and samples in the field and analytical laboratory techniques.
CR: Geography 3150
LH: 3
PR: EASC 2905 or Geography 2102; Mathematics 1000

Secondary Changes

In section 10.11 of the calendar, which contains descriptions of Geography courses, the description of GEOG 3150 should be changed as follows.

3150 Geomorphology (same as Earth Sciences 3700) is a study of the relationships between geomorphic processes and landforms. Practical work will involve collection of data and samples in the field and analytical laboratory techniques.
CR: the former Earth Sciences 3700
LH: 3
PR: GEOG 2102 or Earth Sciences 2905; Mathematics 1000

Rationale

The Department of Earth Sciences would like to resurrect and rename a course “EASC 3700 Geomorphology and Surface Processes” which was last offered in the winter of 1991, by cross listing it with Geography course “GEOG 3150 Geomorphology”. The close relationship between the old EASC 3700 and the present GEOG 3150 can be seen from the similarities in the titles and calendar descriptions, and by the fact that they were credit restricted. The calendar description of the former EASC 3700, taken from the 1990 University Calendar, is given below.

EASC 3700. Geomorphology and Surface Processes (W). (Same as former Geology 3180 and Earth Sciences 3180). A study of landforms and landscapes dealing with erosional processes, and the texture, transport and deposition of unconsolidated sediment. Examples will be drawn from Quaternary and Tertiary fluvial and glacial landforms.
Prerequisite: Earth Sciences 2300
Note: Credit cannot be obtained for both Earth Sciences 3700 and Geography 3150.

The calendar description for GEOG 3150 (see previous section) is more general, however both Earth Sciences and Geography departments agree that the overlap in course material is more than 50%.

The Department of Earth Sciences would like to change the title from “Geomorphology and
Surface Processes" to "Geomorphology" in order to match the title of GEOG 3150.

This course is clearly relevant to both Earth Sciences and Geography. With the current development of the "Environmental" stream in Earth Sciences, both Departments want this course to be more visible to Earth Sciences students when they are planning their program. It is a course that will be useful for them in attaining professional registration as Environmental Geoscientists in Canada. The course instructor will be assigned by the Geography Department, and Geography will remain the Department of record for this course.

Consultations

This proposal has been sent to the Heads of all departments in the faculty of science, the Associate Dean (Undergraduate) in the office of the Dean of Arts, the Office of the Vice-President at the Grenfell Campus, the Office of the Vice-President at the Marine Institute, and the library.

Sample Course Outline and Method of Evaluation

Not applicable. GEOG 3150 is an established course.

Texts

N/A.

Instructor(s)

To be determined by the Department of Geography.
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number
EASC 3700 Geomorphology

Calendar Description

3700 Geomorphology (same as Geography 3150) is a study of the relationships between geomorphic processes and landforms. Practical work will involve collection of data and samples in the field and analytical laboratory techniques.
LH: 3
PR: EASC 2905 or Geography 2102; Mathematics 1000

Rationale

We would like to cross list the existing course “GEOG 3150 Geomorphology” in Earth Sciences, so that it is more visible to Earth Sciences students, particularly those in the evolving Environmental Geoscience stream in the Earth Sciences Department. This course is needed for professional registration (as P.Geo) through the environmental geoscience option in the Canadian Council of Professional Geoscientists guidelines.

This course is similar (more than 50% in content) with that of “EASC 3700 Geomorphology and Surface Processes”, which was last offered in 1991, so we would like to resurrect the old Earth Sciences course number for the Calendar.

Consultations Sought From

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Library Report Received

Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name

________________________________________________________________________
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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: ________________________________

Secretary: ________________________________

Date: ________________________________
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
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2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703- Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics-revisions to current Statistics courses

Joan Burry
Assistant Registrar and Secretary, Committee on Undergraduate Studies, Faculty of Science
Proposal for New Course
EASC 4703 Environmental Change and Quaternary Geography

RESOURCE IMPLICATIONS: Instructional Costs

No new resources are required, because this course is a cross listing of an existing course GEOG 4150 Environmental Change and Quaternary Geography. All costs associated with this course are covered under the existing budget of the Department of Geography, which is the department of record.

RESOURCE IMPLICATIONS: Library Holdings and/or Other Resources Required

There are no resource implications for Library Holdings for the same reasons as given above.

The costs associated with new program/course(s) can be met from within the existing budget allocation or authorized new funding for the Department of Geography.

Signature of Unit Head (if appropriate): ________________________________

Date: ________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date: ________________________________
Course Number and Title

4703 Environmental Change and Quaternary Geography

Abbreviated Course Title

Quaternary Geography

Calendar Description

4703 Environmental Change and Quaternary Geography (same as Geography 4150 and Archaeology 4150) covers methods of reconstructing Quaternary environments; effects of Quaternary environmental change on landforms, with special reference to North America; development and characteristics of glacial and non-glacial climates.
CR: Geography 4150, Archaeology 4150
LH: 3
PR: 6 credit hours in Earth Sciences or Physical Geography courses at the 3000- level; or permission of the instructor.

Secondary Changes
In section 10.11 of the calendar, which contains descriptions of Geography courses, the description of GEOG 4150 should be changed as follows.

4150 Environmental Change and Quaternary Geography (same as Archaeology 4150 and Earth Sciences 4703) covers methods of reconstructing Quaternary environments; effects of Quaternary environmental change on landforms, with special reference to North America; development and characteristics of glacial and non-glacial climates.
CR: Archaeology 4150, Earth Sciences 4703
LH: 3
PR: 6 credit hours in physical geography courses at the 3000- level; or permission of Head of Department. It is strongly recommended that GEOG 3222 and 3226 be completed before registration in 4000-level courses.

In section 10.2 of the calendar, which contains descriptions of Archaeology courses, the description of ARCH 4150 should be changed as follows.

4150 Environmental Change and Quaternary Geography (same as Geography 4150 and Earth Sciences 4703) examines methods of reconstructing Quaternary environments, effects of Quaternary environmental changes on landform, with special reference to North America, development and characteristics of glacial and nonglacial climates.
CR: Geography 4150, Earth Sciences 4703
LH: 3
PR: 6 credit hours in Physical Geography or in Archaeology at the 3000-level, or permission of the instructor.

Rationale

It is unusual for a course to be cross-listed between the Faculties of Science and Arts, however in Quaternary Geography there is a clear confluence of interests in Geography, Archaeology and Earth Sciences. The Quaternary Period comprises the last 2.5 million years of Earth history,
during which there were periodic glaciations and recognizable humans existed. In the words of Norm Catto from the Department of Geography: "I have been editor of Quaternary International for 25 years, and the numerous archaeological papers published by the journal invariably include some combination of Physics (e.g. radiometric dating); Chemistry (e.g. isotopic analysis; chemical analysis of pigments and glass); Biology (e.g. vertebrate taxonomy; phytolith analysis); Anatomy (e.g. discussion of Neandertal ear structure); Forestry (e.g. analysis of charcoal to determine wood species); Ecology (e.g. palynology), Earth Science, Pedology, etc... It is hard for me to think of a Science that has not been represented in Quaternary work conducted by or with archaeologists over the past 25 years. As Archaeologists and Earth Scientists frequently work together on Quaternary research, it is important that they interact."

With the current development of the “Environmental” stream in Earth Sciences, we would like this course to be more visible to Earth Sciences students when they are planning their program. It is a course that will be useful for them in attaining professional registration as Environmental Geoscientists in Canada. The course instructor will be assigned by the Geography Department, and Geography will remain the Department of record for this course.

Consultations

This proposal will be sent to the Heads of all departments in the faculty of science, the office of the Dean of Arts, the Head, Division of Science, Grenfell Campus, the Office of the Vice-President (Marine Institute) and the library.

Sample Course Outline and Method of Evaluation

Not applicable. GEOG 4150 is an established course.

Texts

N/A.

Instructor(s)

To be determined by the Department of Geography.
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number
4703 Environmental Change and Quaternary Geography

Abbreviated Course Title
Quaternary Geography

Calendar Description

4703 Environmental Change and Quaternary Geography (same as Geography 4150 and Archaeology 4150) covers methods of reconstructing Quaternary environments; effects of Quaternary environmental change on landforms, with special reference to North America; development and characteristics of glacial and non-glacial climates.
CR: Geography 4150, Archaeology 4150
LH: 3
PR: 6 credit hours in Earth Sciences or Physical Geography courses at the 3000-level; or permission of the instructor.

Rationale
We would like to cross list the existing course “GEOG 4150 Environmental Change and Quaternary Geography” in Earth Sciences, so that it is more visible to Earth Sciences students, particularly those in the evolving Environmental Geoscience stream in the Earth Sciences Department. This course is needed for professional registration (as P.Geo) through the environmental geoscience option in the Canadian Council of Professional Geoscientists guidelines.

Consultations Sought From

Comments Received

Provide a consultation list and indicate whether or not comments were received

Library Report Received
Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President
Yes/No

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:
13 August 2013

TO: Dr. Alison Leitch, Undergraduate Matters Committee, Department of Earth Sciences

FROM: Dianne Taylor-Harding, Collection Development Librarian, Earth Sciences

SUBJECT: Library Resources Review for New Course Proposal EASC 3700 - Geomorphology

Upon review of the new course proposal for Earth Sciences 3700 - Geomorphology, I have determined that the Memorial University Libraries have sufficient resources to support the objectives of this course.

The proposed course is a cross listing of an existing course, Geography 3150 - Geomorphology. Course descriptions for both GEOG3150 and EASC3700 will read, “... is a study of the relationships between geomorphic processes and landforms. Practical work will involve collection of data and samples in the field and analytical laboratory techniques.”

The Queen Elizabeth II Library collects materials on geomorphology to support research and teaching through the post-doctorate level. This intensive collection comprises books and monographs, journals, maps, technical reports and government documents on geomorphology, geomorphic geology, physiography, landforms, etc.

The Memorial University Libraries have sufficient resources to support this course.

8/13/2013

D. E. Taylor-Harding
Dianne Taylor-Harding
Collections Librarian for Earth Sciences
Journals

The Memorial University Libraries subscribe to hundreds of ejournals in the Earth and Environmental Sciences, including:

- Geography-General (213 ejournal titles)
- Physical Geography (78 ejournal titles)

Reference & Research

The Memorial University Libraries provide access to several online abstracting and indexing databases useful for geomorphology research –

1. **Scopus**, a large multidisciplinary database, indexes and abstracts articles in more than 20,000 scholarly journals, conference proceedings and books, from 1995 to the present. In addition, Scopus has incorporated all indexing from GEOBASE [formerly Geo Abstracts], 1973 to present. GEOBASE is a multidisciplinary database supplying bibliographic information and abstracts for the Earth sciences, physical geography, ecology, geomechanics, human geography, and oceanography.

2. **GeoRef**, a comprehensive international geosciences database, indexes and abstracts over 3 million records describing articles from 3,500+ journals as well as books, maps, government reports, conference papers, theses / dissertations, from 1669 to present. GeoRef coverage includes geomorphology related topics - Hydrogeology and hydrology, Environmental geology. Surficial geology – geomorphology, Surficial geology – Quaternary geology, Surficial geology – soils.

3. **Web of Science**, another large multidisciplinary database, indexes and abstracts articles in more than 10,000 scholarly journals, conference proceedings and books, from 1900 to the present.

Books

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Hi - The Psychology Department does not have any problem with the proposed cross-listing.

gerard martin

On 2013-07-31, at 12:42 PM, Dr Alison Leitch wrote:

> Please find attached a proposal for cross-listing a physical Geography course
> (Geomorphology) in Earth Sciences.
> 
> > Alison Leitch
> > Undergraduate Matters Committee
> > Department of Earth Sciences
> > 
> > (I)
> > 
> > Alison Leitch
> > Associate Professor
> > Department of Earth Sciences
> > Memorial University
> > St John's NL A1B 3X5
> > 
> > ph: 709-864-3306
> > This electronic communication is governed by the terms and conditions at
> > <Proposal_For_New_Course-ES3700.pdf>

...  

Office of the Head  
Psychology Department  
Memorial University of Newfoundland  
St. John's, NL  
Canada  
A1B 3X9

Phone: (709) 864-8495  
Fax: (709) 864-2430  
Email: Psychology.Head@mun.ca  
Web: http://www.mun.ca/psychology

This electronic communication is governed by the terms and conditions at  
Hello Allison,

The chemistry department supports the proposal to cross-list EASC 3700 Geomorphology with GEOG 3150 Geomorphology.

sincerely,

Chris Flinn
Deputy Head, Undergraduate Studies
Chemistry Department
Memorial University

On 01/08/2013 9:51 AM, Peter Pickup wrote:
> Chris,
> 
> Can you take a look at this sometime, and respond if necessary. Please forward to faculty if you think it is relevant.
> 
> Thanks,
> 
> Peter
>
> -----Original Message-----
> From: Dr Alison Leitch [mailto:aleitch@mun.ca]
> Sent: July 31, 2013 12:42 PM
> To: Marine Institute Consultation; Grenfell UG Consultation; Consultation,
> Comp Sci; Philip Davis; Fletcher(OSc), Garth; Paul Marino(Biol); Ian Neath;
> Peter Pickup; Taylor-Harding, Dianne; Math UGM; Brad de Young; Alex Marland
> Cc: Charles Mather; Joan Burry; George Jenner
> Subject: Consultation: cross-listing Geography course in Earth Sciences
>
> Please find attached a proposal for cross-listing a physical Geography course
> (Geomorphology) in Earth Sciences.
>
> Alison Leitch
> Undergraduate Matters Committee
> Department of Earth Sciences
> --
>
> Alison Leitch
> Associate Professor
> Department of Earth Sciences
> Memorial University
Date: Mon, 19 Aug 2013 17:00:07 -0230

From: Brad deYoung <bdeyoung@mun.ca>

To: Dr Alison Leitch <aleitch@mun.ca>

Cc: Rick Goulding <rgoulding@mun.ca>

Subject: Re: Consultation: cross-listing Geography course in Earth Sciences

Alison

We have had a look at the proposed cross-listed Geomorphology course EASC 3700 and see no problems with it. It looks fine and we support it.

Let us know if there is anything else that you need from us.

best

Brad

Brad deYoung
Professor and Head
Memorial University
St. John's NL
709-864-8738
bdeyoung@mun.ca

On 2013-07-31, at 12:42 PM, Dr Alison Leitch <aleitch@mun.ca> wrote:

> <Proposal_For_New_Course-ES3700.pdf>

This electronic communication is governed by the terms and conditions at http://www.mun.ca/cc/policies/electronic_communications_disclaimer_2012.php
Upon review of the new course proposal for Earth Sciences 3700 - Geomorphology, I have determined that the Memorial University Libraries have sufficient resources to support the objectives of this course.

See attached for full report.

Dianne Taylor-Harding,
Collections Librarian for Earth Sciences, Queen Elizabeth II Library,
Memorial University of Newfoundland, St. John's, Newfoundland & Labrador, Canada dtaylor@mun.ca
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
      Committee on Undergraduate Studies, Faculty of Science

SUBJECT: Calendar Changes and New Course Proposals

At a meeting held on October 28, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the following new course proposals and Calendar changes be forwarded to Faculty Council for approval:

1. Department of Computer Science
   (i) New Course- Computer Science 2510-Programming C/C++
   (ii) New Course- Computer Science 4750- Introduction to Natural Language Programming
   (iii) Revisions to current courses and programs

2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703- Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics-revisions to current Statistics courses

[Signature]
Joan Burry
Assistant Registrar and
Secretary, Committee
on Undergraduate Studies,
Faculty of Science
Proposal
Calendar Change to Existing Course EASC 4179

Course Number and Title
EASC 4179 Digital Signal Processing

Proposed Change(s) to Calendar Description

4179 Digital Signal Processing is an introduction to the theory and basic computational techniques of digital signal processing in geophysics. Topics covered include: sampling, Fourier transformation, design and application of digital filters, deconvolution, spectral analysis, two dimensional signal processing, with emphasis on geophysical applications.

LH: 3
PR: EASC 3170, or 3172; and EASC 4479 3179

Rationale for Change

In the 2013-14 Calendar, the prerequisites listed for this course were entered incorrectly: they were copied from the prerequisite list for course EASC 4173. Obviously, a course cannot be its own prerequisite. The prerequisite list in the 2012-13 Calendar is EASC 3170 and 3179. We would like to correct this typographic error. We would also like to add EASC 3172 to the prerequisite list. This is because EASC 3170 and 3172 together introduce the broad range of geophysical methods and techniques to the students, and we would like the students to have this knowledge base before taking more advanced 4000 level courses.

Consultations

This proposal has been sent (Oct 10, 2013) to the Heads of all departments in the faculty of science, the Head, Division of Science, Grenfell Campus, the Office of the Vice-President (Marine Institute) and the library

Library Holdings and/or Other Resources Required

None.

Signature of Unit Head (if appropriate): ________________________________

Date: ________________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President: ________________________________

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title

EASC 4179 Digital Signal Processing

Proposed Change(s) to Calendar Description

4179 Digital Signal Processing is an introduction to the theory and basic computational techniques of digital signal processing in geophysics. Topics covered include: sampling, Fourier transformation, design and application of digital filters, deconvolution, spectral analysis, two dimensional signal processing, with emphasis on geophysical applications.

LH: 3
PR: EASC 3170 or 3172; and EASC 4479 3179

Rationale for Change

In the 2013-14 Calendar, the prerequisites listed for this course were entered incorrectly. The prerequisite list in the 2012-13 Calendar is EASC 3170 and 3179. In addition to correcting this typographic error, we would also like to add EASC 3172 to the prerequisite list. This is because EASC 3170 and 3172 together introduce the broad range of geophysical methods and techniques to the students, and we would like the students to have this knowledge base before taking more advanced 4000 level courses.

Consultations Sought From

1. Grenfell Campus
2. Marine Institute
3. Department of Biochemistry
4. Department of Biology
5. Department of Chemistry
6. Department of Computer Science
7. Department of Economics
8. Department of Geography
9. Department of Mathematics and Statistics
10. Department of Ocean Sciences
11. Department of Physics and Physical Oceanography
12. Department of Psychology

Comments Received

Yes/No

Library Report Received

Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name

------------------------------------------------------------------------------------------------------------------

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Proposal
Calendar Change to Existing Course EASC 4173

Course Number and Title
EASC 4173 Advanced Electrical, Electromagnetic and Potential Fields Methods

Proposed Change(s) to Calendar Description

4173 Advanced Electrical, Electromagnetic and Potential Fields Methods examines advanced techniques in electrical and electromagnetic exploration methods including advanced IP, airborne EM surveys, EM and IP modelling, and inversion techniques; advanced methods in gravity and magnetic field exploration techniques including 2-D and 3-D modelling and inversion, map processing techniques, and excess mass determination.

LH: 3
PR: PHYS 2820, EASC 3170, 3172, and 4179

Rationale for Change

EASC 4173 involves computer modelling techniques that are introduced in PHYS 2820 (Computational Mechanics), therefore PHYS 2820 is a prerequisite for this course. Up until now, it has not been specifically listed as a prerequisite, because it is a listed prerequisite for EASC 3179, which is in turn a prerequisite for EASC 4179, which is a listed prerequisite of EASC 4173. However, it is possible that a student with a strong background in mathematics might be signed into EASC 4179 without the prerequisite EASC 3179, and this student would not realize that PHYS 2820 is important for a successful outcome in EASC 4173. Therefore, we would like to list PHYS 2820 specifically as a prerequisite for EASC 4173.

PHYS 2820 is a required course for a BSc in the geophysics stream in Earth Science and fulfils a requirement for registration as a geophysicist with PEGNL (Professional Engineers and Geoscientists of Newfoundland and Labrador): it is important that students are encouraged to take the course at the appropriate time in their education.

Consultations

This proposal has been sent (10 October 2013) to the Heads of all departments in the faculty of science, the Head, Division of Science, Grenfell Campus, the Office of the Vice-President (Marine Institute) and the library.

Library Holdings and/or Other Resources Required

None.

Signature of Unit Head (if appropriate): ________________________________

Date: ________________________________
Signature of Dean/Associate Vice-President (Academic)/Vice-President:


Date:


SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number

4173 Advanced Electrical, Electromagnetic and Potential Fields Methods

Abbreviated Course Title

Advanced EM & Potential Fields

Calendar Description Change(s)

4173 Advanced Electrical, Electromagnetic and Potential Fields Methods examines advanced techniques in electrical and electromagnetic exploration methods including advanced IP, airborne EM surveys, EM and IP modelling, and inversion techniques; advanced methods in gravity and magnetic field exploration techniques including 2 ½-D and 3-D modelling and inversion, map processing techniques, and excess mass determination.

LH: 3
PR: PHYS 2820, EASC 3170, 3172, and 4179

Rationale

Material covered in PHYS 2820 is required for successful completion of EASC 4173, and therefore it should be listed as a prerequisite.

Consultations Sought From

1. Grenfell Campus
2. Marine Institute
3. Department of Biochemistry
4. Department of Biology
5. Department of Chemistry
6. Department of Computer Science
7. Department of Economics
8. Department of Geography
9. Department of Mathematics and Statistics
10. Department of Ocean Sciences
11. Department of Physics and Physical Oceanography
12. Department of Psychology

Comments Received

Yes/No

Library Report Received

Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: ________________________________

Secretary: ____________________________

Date: ________________________________
Proposal
Calendar Change to Existing Course EASC 4105

Course Number and Title

EASC 4105 Field Course in Applied Geophysics

Proposed Change(s) to Calendar Description

4105 Field Course in Applied Geophysics is a field based course with an emphasis on environmental and mineral exploration applications. It consists of a data collection module normally offered during a special session immediately before the Fall semester, followed by a processing and interpretation module during the first part of the Fall semester. Field techniques used may include ground probing radar, refraction seismology, magnetic surveying, gravimetry, electrical and electro-magnetic methods. For computer based processing, students make use of modern mapping and geophysical software.
AR: attendance required
OR: field-based course
PR: EASC 3170, 3172 and MATH 2000 and 3179

Rationale for Change

EASC 4105 is a field base course that builds on material presented in EASC 3172, and involves geophysical methods described in EASC 3170. It is not heavily mathematical and does not require the advanced theory presented in EASC 3179. A student who is unsuccessful in EASC 3179 the first time s/he takes it would be signed into EASC 4105 if requested. Rather than hold back a student's education unnecessarily, we would like to replace the EASC 3179 with a more appropriate requirement for MATH 2000.

Consultations

This proposal has been sent (10 October 2013) to the Heads of all departments in the faculty of science, the Head, Division of Science, Grenfell Campus, the Office of the Vice-President (Marine Institute) and the library

Library Holdings and/or Other Resources Required

None.

Signature of Unit Head (if appropriate): ____________________________

Date: ____________________________

Signature of Dean/Associate Vice-President (Academic)/Vice-President: ________________
SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title

EASC 4105 Field Course in Applied Geophysics

Abbreviated Course Title

Field Course in Applied Geophysics

Proposed Change(s) to Calendar Description

4105 Field Course in Applied Geophysics is a field based course with an emphasis on environmental and mineral exploration applications. It consists of a data collection module normally offered during a special session immediately before the Fall semester, followed by a processing and interpretation module during the first part of the Fall semester. Field techniques used may include ground probing radar, refraction seismology, magnetic surveying, gravimetry, electrical and electro-magnetic methods. For computer based processing, students make use of modern mapping and geophysical software.

AR: attendance required
OR: field-based course
PR: EASC 3170, 3172 and MATH 2000 and 3179

Rationale for Change

EASC 4105 is a field base course that builds on material presented in EASC 3172 and EASC 3170. It is not heavily mathematical and does not require the advanced theory presented in EASC 3179. We would like to replace the EASC 3179 with a more appropriate requirement for MATH 2000.

Consultations Sought From

1. Grenfell Campus
2. Marine Institute
3. Department of Biochemistry
4. Department of Biology
5. Department of Chemistry
6. Department of Computer Science
7. Department of Economics
8. Department of Geography
9. Department of Mathematics and Statistics
10. Department of Ocean Sciences
11. Department of Physics and Physical Oceanography
12. Department of Psychology

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Library Report Received

Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No
Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: 

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Secretary: 

-------------------------------

Date: 

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Proposal
Calendar Change to Existing Course EASC 3172

Course Number and Title
EASC 3172 Electric and Electromagnetic Methods in Geophysics

Proposed Change(s) to Calendar Description

3172 Electric and Electromagnetic Methods in Geophysics is an introduction to electrical and electromagnetic methods in geophysics applied in mineral exploration, petroleum well logging and environmental studies, and examples of application of various techniques; use of data processing and modelling techniques in interpretation; introduction to radiometric methods used in mineral and petroleum exploration. The laboratory component involves outdoor surveys using geophysical equipment, and computer-based presentation and analysis of collected data using modern geophysical software.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

CO: EASC 2905 or permission of the Head of the Department

LH: 3

PR: Physics 1051 (or 1021 or the former 1054); Mathematics 1001; Mathematics 2000 or Statistics 2550 or the former Statistics 2510; EASC 2905 or permission of the Head of the Department for students following a Minor in Earth Sciences or a Major in Environmental Physics

Rationale for Change

EASC 3172 involves hands-on outdoor training in geophysical survey techniques, where the students work together in small groups of 2 or 3, and hands-on training in geophysical software in the computer lab. It is essential for the students to take part in this training. Missed classes also involve placing a student's group member(s) at a disadvantage. We have 6 outdoor lab periods and 7 or 8 different pieces of geophysical equipment. Students are not permitted to take out the equipment unsupervised. To fit everything in, the students, already in their groups, are in the field on the first day of classes.

We would like to make attendance of laboratories compulsory to emphasise their importance to the students.

Consultations

This proposal has been sent (10 October 2013) to the Heads of all departments in the faculty of science, the Head, Division of Science, Grenfell Campus, the Office of the Vice-President (Marine Institute) and the library

Library Holdings and/or Other Resources Required

None.

Signature of Unit Head (if appropriate): ___________________________
Date:

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date:
SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title

EASC 3172 Electric and Electromagnetic Methods in Geophysics

Abbreviated Course Title

Electrical & EM Methods

Proposed Change(s) to Calendar Description

3172 Electric and Electromagnetic Methods in Geophysics is an introduction to electrical and electromagnetic methods in geophysics applied in mineral exploration, petroleum well logging and environmental studies, and examples of application of various techniques; use of data processing and modelling techniques in interpretation; introduction to radiometric methods used in mineral and petroleum exploration. The laboratory component involves outdoor surveys using geophysical equipment, and computer-based presentation and analysis of collected data using modern geophysical software.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

CO: EASC 2905 or permission of the Head of the Department

LH: 3

PR: Physics 1051 (or 1021 or the former 1054); Mathematics 1001; Mathematics 2000 or Statistics 2550 or the former Statistics 2510; EASC 2905 or permission of the Head of the Department for students following a Minor in Earth Sciences or a Major in Environmental Physics

Rationale for Change

The outdoor laboratories, where the students work in small groups of 2 or 3 to be trained in use of geophysical instruments, are an essential part of this course. Similarly, essential hands-on training in geophysical software takes place during the indoor laboratory periods. This training cannot be made up outside the laboratory periods.

Consultations Sought From

1. Grenfell Campus
2. Marine Institute
3. Department of Biochemistry
4. Department of Biology
5. Department of Chemistry
6. Department of Computer Science
7. Department of Economics
8. Department of Geography
9. Department of Mathematics and Statistics
10. Department of Ocean Sciences
11. Department of Physics and Physical Oceanography
12. Department of Psychology

Comments Received

Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Yes/No
Library Report Received
Yes/No

Approved by Dean, Associate Vice-President (Academic) or Vice-President
Yes/No

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Alison

These changes were discussed by the Physics Undergraduate Studies Committee. The only question that came up was how you would deal with students who missed a lab in ES3172 for a legitimate medical reason if there is no tolerance for a missed lab and no way of making up a lab. We didn't have a problem with making the labs mandatory and we didn't think that there was a need to specify how to deal with missed labs in the calendar entry. Nevertheless, some comment about how to deal with contingencies might be helpful in the Rationale.

Michael Morrow

---

Department of Physics and Physical Oceanography
Memorial University of Newfoundland
St. John's, Newfoundland Phone: (709) 864 4361
Canada, A1B 3X7 FAX: (709) 864 8739

PLEASE NOTE NEW TELEPHONE EXCHANGE!
Please note new e-mail address: mmorrow@mun.ca

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Subject: FW: FW: Consultation on calendar changes for Earth Sciences (geophysics) courses

-----Original Message-----
From: Chris Flinn [mailto:cgflinn@mun.ca]
Sent: October 11, 2013 10:06 AM
To: Peter Pickup
Subject: Re: FW: Consultation on calendar changes for Earth Sciences (geophysics) courses

Hi Peter,

I quickly reviewed each possible change in prerequisites and they appear to be very sensible.

cheers,

Chris

On 11/10/2013 9:14 AM, Peter Pickup wrote:
> Please let me know, by 18 Oct, if you have any comment on this.
> 
> Thanks,
> 
> Peter
>
> -----Original Message-----
> From: Dr Alison Leitch [mailto:aleitch@mun.ca]
> Sent: October 10, 2013 2:29 PM
> To: Marine Institute Consultation; Grenfell UG Consultation;
> Consultation, Comp Sci; Philip Davis; Fletcher(OSc), Garth; Paul
> Marino(Bio!); Ian Neath; Peter Pickup; Taylor-Harding, Dianne; Math
> UGM; Brad de Young
> Cc: Joan Burry; George Jenner; Graham Layne
> Subject: Consultation on calendar changes for Earth Sciences
> (geophysics) courses
>
> Please find attached proposals for change to calendar entries for 4
groups of geophysics courses offered in the Department of Earth Sciences.
>
> For our 3000 level course, we would like to make attendance at the
> labs a requirement. For the 4000 level courses, we would like to make
> some changes to the prerequisites, to make them more accurately
> reflect the expected incoming knowledge base.
>
> Regards,
> Alison Leitch
> (Undergraduate Matters, Earth Sciences)
> 
> --
> Alison Leitch
> Associate Professor
> Department of Earth Sciences
> Memorial University
> St John's NL A1B 3X5
> 
> ph: 709-864-3306
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> 2.php
November 12, 2013

TO: All Members, Faculty Council of Science

FROM: Joan Burry, Secretary
       Committee on Undergraduate Studies, Faculty of Science

SUBJECT: Calendar Changes and New Course Proposals

At a meeting held on October 28, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the following new course proposals and Calendar changes be forwarded to Faculty Council for approval:

1. Department of Computer Science
   (i) New Course- Computer Science 2510- Programming C/C++
   (ii) New Course- Computer Science 4750- Introduction to Natural Language Programming
   (iii) Revisions to current courses and programs

2. Department of Earth Sciences
   (i) New Course- Earth Sciences 3700- Geomorphology
   (ii) New Course- Earth Sciences 4703- Environmental Change and Quaternary Geography
   (iii) Revisions to current courses

3. Department of Mathematics and Statistics-revisions to current Statistics courses

Joan Burry
Assistant Registrar and Secretary, Committee on Undergraduate Studies, Faculty of Science
Proposal
Calendar Changes to Existing Courses:
Statistics 4530 and Statistics 4590

Executive Summary

At its meeting of February 12th, 2013, Senate approved a substantial overhaul of courses and programs in Statistics. We propose to amend the prerequisites for Statistics 4530 and Statistics 4590 in order to rectify two omissions from that motion.

Resource Implications: Instructional Costs

None.

Consultations

Forthcoming

Library Holdings and/or Other Resources Required

Forthcoming

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for the Faculty of Science.

Signature of Unit Head (if appropriate):

Date:

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

Date:
SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title

Statistics 4530: Survey Sampling
Statistics 4590: Statistical Analysis of Data I

Abbreviated Course Title

Survey Sampling
Statstcl Anlys Data I

Calendar Change(s)

Under the Faculty of Science, page 495, 2013-2014 Calendar, 9.8.4 (Statistics Courses), amend the prerequisite for Statistics 4530 to read:

"4530 Survey Sampling covers basic concepts, simple random sampling, unequal probability sampling and the Horvitz-Thompson principle, sufficiency, design and modelling in sampling, ratio and regression estimators, stratified and cluster sampling, methods for elusive and/or hard- to-detect populations.

PR: STAT 3411 Mathematics-2000 and the former STAT 3530"

Under the Faculty of Science, page 496, 2013-2014 Calendar, 9.8.4 (Statistics Courses), amend the prerequisite for Statistics 4530 to read:

"4590 Statistical Analysis of Data I examines the statistical analysis of real life univariate data using computational and statistical methods including descriptive statistics, chi-square tests, non-parametric tests, analysis of variance, linear, logistic and log-linear regressions. Other statistical techniques such as integrated autoregressive moving average modelling and forecasting or quality control methods may be introduced depending on the nature of the data.

LH: one 90 minute lab per week
PR: one of STAT 3520, 3521 or 3540 3411, 3520, or 3521"

Secondary Calendar Changes

None.

Rationale

These prerequisite changes were inadvertently omitted from the overhaul of Statistics programs and courses approved by Senate at its February 2013 meeting. In the case of Statistics 4530, its original prerequisites (Statistics 3530 and Mathematics 2000) have been deleted. The relevant Statistics
material has moved to Statistics 3411 (Statistical Inference I), while the revised content of the course no longer requires Mathematics 2000. In the case of Statistics 4590, the necessary preparatory material is no longer found in Statistics 3411; instead, Statistics 3540 (Time Series I) is now an appropriate alternative prerequisite alongside Statistics 3520 (Experimental Design I) and Statistics 3521 (Regression).

Consultations Sought From

1. Grenfell Campus
2. Marine Institute
3. Faculty of Arts

Library Report Received

Comments Received

Yes/No
Yes/No
Yes/No

Signature:  Dean, Associate Vice-President (Academic) or Vice-President

Name

-------------------------------------------------------------------------------------

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
October 23, 2013

TO: Julie D. Rideout, Secretary
    Faculty of Science Faculty Council

FROM: Martin Plumer, Chair
      Computational Science Program

SUBJECT: Computational Science Program Calendar Changes

The Computational Science Board of Study has recommended that the name of the program be changed to ‘Scientific Computing’. In recent years there has been increasing evidence of confusion over what ‘Computational Science’ means. Feedback from local high tech industry representatives, who were contacted by the Computational Science Board, indicates that they are confused by the title. They agree that ‘Scientific Computing’ is more understandable and better represents our program. We also note that the University of Western Ontario has a similar program with the same title. The Board members feel this new name is clearer and will also cut down on the number of applicants who confuse our program with Computer Science.

As well, they also recommend the following changes to the program:

Core courses:

1. Change CMSC 6910 to read ‘Computational Science 6910 or Computer Science 6732 (credit may be obtained for only one of CMSC 6910 and COMP 6732)
2. Add CMSC 6950, Computer Based Tools and Applications
3. Delete CMSC 6900-6909 Special Topics

List of Computational Science courses:

.../2
The Board assumes the Registrar’s Office will assign a new acronym to the program once the name change is approved, and any references to ‘CMSC’ in the Calendar will be updated by that office.

Martin Plumer

Attachment
24.10 Computational Science Scientific Computing

- **Professor and Program Chair**
  - M. Plumer

24.10.1 Administrative Committee

The Administrative Committee, appointed by the Dean of the School of Graduate Studies on the recommendation of the Dean of the Faculty of Science, consists of at least one representative of each participating academic unit, and one member external to the University.

24.10.2 Participating Departments and Organizations

This interdisciplinary program offers the Master of Science Degree in both Computational Science Scientific Computing and Computational Science Scientific Computing (Co-operative). The departments of Biochemistry, Chemistry, Computer Science, Earth Sciences, Mathematics and Statistics, Physics and Physical Oceanography and the Faculty of Engineering and Applied Science are participants in this program. Other departments and faculties may be involved, depending on the nature of the thesis or project. External organizations may provide placements for co-op students, jointly supervise students, share computing resources and participate in teaching courses.

24.10.3 Admission Criteria and Procedures

1. The criteria for acceptance of an applicant are: his or her anticipated successful and timely completion of the program, and the willingness of a participating faculty member to supervise the applicant.

2. Students will be expected to hold a B.Sc. (Honours) or B.Eng. Degree with honours standing, or equivalent, with a strong computational orientation. At the time of application, the student is expected to provide evidence (for example, transcripts of completed courses) of his or her knowledge of a modern computer language such as Fortran, and/or C and/or C++, and/or Matlab, and/or Python. Evidence of knowledge of differential equations; and/or linear algebra and/or computer graphics would be an asset. Students with an inadequate background may be encouraged to take certain undergraduate courses.

3. Admission decisions will be made by the School of Graduate Studies on the recommendation of the Chair of the Administrative Committee.

24.10.4 Program of Study

1. The goal of Computational Science Scientific Computing is to solve technical problems, in science and engineering, using computers and computational methods. Our program is designed to educate students to apply computational, numerical and programming concepts and tools to solve and model complex problems in science and engineering.

2. The Program is offered in thesis and project (non-thesis) versions, with the option of a co-operative education program. It is intended that the overall level of student effort and performance required in each version will be comparable. The normal length of time to complete each option is 24 months.

3. The work for the thesis or project will be carried out under the guidance of a supervisor (or joint supervisors). The home department of the student will be the same as that of the Supervisor. Upon completion of the work for the thesis or project, to be submitted to the School of Graduate Studies for examination, each student is required to present a seminar suitable for the interdisciplinary audience of Computational Science Scientific Computing program students.
4. All students are required to complete a minimum of 3 core courses (9 credit hours) selected from the list of Core Courses listing below. All students are also recommended to complete CMSC 6950. Additional courses are required in accordance with the program options as outlined below and will normally be selected from the student's discipline of specialization. The course requirements for each student are approved by the Program Chair on the recommendation of the student's supervisor(s), and should reflect the interdisciplinary nature of the program. Students are expected to attend research seminars in their home department as well as those relevant to Computational Science Scientific Computing, when advertised.

   a. The thesis option requires the completion of a minimum of four graduate courses (12 credit hours) numbered 6000 or higher, which must include three courses (9 credit hours) from the Core Courses listing below. Equivalent courses may be considered for substitution with approval of the Program Chair. CMSC 6950 is also recommended. The additional course(s) will normally be chosen from the Additional Courses listing below in the same discipline as the thesis work. The submission of an acceptable thesis is required. The thesis is to contain an original scholarly contribution which must be submitted to the School of Graduate Studies for final examination. Each student is also required to present a seminar on their thesis research topic that demonstrates their use of computational techniques to solve a problem in science or engineering.

   b. The project option requires the completion of a minimum of seven graduate courses (21 credit hours) numbered 6000 or higher, which must include at least three courses (9 credit hours) from the Core Courses listing below. Equivalent courses may be considered for substitution with approval of the Program Chair. CMSC 6950 is also recommended. An acceptable project report is also required which must be submitted to the School of Graduate Studies for final examination. The additional courses will normally be chosen from the Additional Courses listing below in the same discipline as the project work. The project, which will include an in-depth written report, shall require the equivalent of at least one and no more than two semesters of full time work.

24.10.5 Co-operative Education Option

1. A co-operative education option will be available to students who are accepted into the M.Sc. program. Students in this option may follow the thesis or non-thesis version of the program. It is expected to take up to 24 months to complete.

2. Students will normally declare their intention to complete the co-operative education option at the start of the second semester of their academic program.

3. Students will complete two work terms consecutively, normally following the successful completion of two academic semesters.

4. The dates for starting and finishing each work term are shown in the University Diary.

5. A competition for work term employment is organized by the Division of Co-operative Education (DCE) in cooperation with a designated faculty member from Computational Science Scientific Computing. Students may also obtain their own work term jobs outside the competition. Such jobs must be confirmed by letter from the employer and approved by the Chair of Computational Science Scientific Computing and by the DCE on or before the first day of the work term. Work term jobs may be outside St. John's and possibly outside Newfoundland and Labrador. Students who do not wish to accept a work term job arranged by DCE shall be responsible for finding an acceptable
alternative. By entering the competition, students give permission for the DCE to supply their Memorial University of Newfoundland transcripts and resumes to potential employers.

6. Each work term placement will be supervised by the student's program supervisor, the on-site supervisor assigned by the employer and the DCE Coordinator. The overall evaluation of the work term is the responsibility of the program Supervisor, on-site Supervisor and DCE Coordinator. The work term shall consist of two components:
   - On-the-job Student Performance as evaluated by the on-site supervisor and DCE Coordinator, in consultation with the program supervisor.
   - A Work Report graded by the DCE Coordinator and the program supervisor in consultation with the on-site supervisor.

7. Evaluation of the work term will result in the assignment of one of the following final grades:
   - Pass with Distinction: Indicates OUTSTANDING PERFORMANCE in both the work report and work performance.
   - Pass: Indicates that PERFORMANCE MEETS EXPECTATIONS in both the work report and work performance.
   - Fail: Indicates FAILING PERFORMANCE in the work report and/or the work performance. If a student fails to achieve a final grade of Pass or Pass with Distinction, and provided the student has not failed to achieve a grade of 'B' or better in any program course, the student may request to repeat the work term component. The request will be considered by the Chair of Computational Science Scientific Computing in consultation with the program supervisor and the DCE Coordinator. Only one repetition of a work term will be permitted in the student's program.

8. Following the completion of the two work terms, each student must complete any remaining course requirements and project report or thesis. Assuming that prior written authorization of the employer and the supervisory committee was obtained and submitted to the School of Graduate Studies, students may include material from the work terms in their reports or theses. For students following the non-thesis version of the program, the two work-term reports may be combined into a single, integrated report for this purpose. All other students must write a thesis on a research project which may be based on research completed during the work terms.

9. Students who are accepted into the co-op option are not guaranteed placements. In the event that a student fails to obtain two semesters of placements, but successfully completes all other requirements of the Degree, he or she will still be eligible for graduation, but without the designation of a co-op degree.

24.10.6 Courses

- Core Courses
  - Mathematics 6210 Numerical Solutions of Differential Equations
  - Computational Science Scientific Computing 6910 Matrix Computations and Applications or Computer Science 6732 Matrix Computations (credit may be obtained for only one of CMSC 6910 and COMP 6732)
  - Computational Science Scientific Computing 6930 Algorithms for Distributed and Shared Memory Computers
  - Computational Science 6950 Computer Based Tools and Applications
  - Computer Science 6731 Topics in Numerical Methods
  - Computational Science 6999 Special Topics
• **Additional Courses**
  • The following courses are identified as suitable for students in this program. Other courses may be permitted with the approval of the Program Chair.

• **Biochemistry**
  • 6420 DNA: The Structure and Function of Genes
  • 6421 RNA: Structure, Function and Synthesis
  • 6422 Regulation of Protein Synthesis
  • 6430 Bioenergetics
  • 6440 Membranes
  • 6450 Proteins
    • 6000-6009 Special Topics in Biochemistry
    • 6010-6019 Special Topics in Nutrition and Metabolism
    • 6020-6029 Special Topics in Food Science
    • 6400 Control of Intermediary Metabolism
    • 6460 Structural Biochemistry
    • 6520 Nutritional Biochemistry
    • 6530 Food Biochemistry
    • 6590 Cellular, Molecular and Developmental Biology (*Credit restricted with Biology 6590 and Medicine 6590*)
    • 6630 Marine Biochemistry
    • 6680 Processing and Quality of Foods


• **Chemistry**
  • 6201 Bioinorganic Chemistry
  • 6204 Mechanisms in Catalysis
  • 6205 Photochemistry of Transition Metal Complexes
  • 6210 Organometallic Chemistry
  • 6300 Quantum Chemistry I
  • 6301 Quantum Chemistry II
  • 6302 Molecular Spectroscopy
  • 6304 Computational Chemistry I
  • 6310 Electronic Structure Theory
  • 6323 Chemical Thermodynamics I
  • 6324 Chemical Thermodynamics II
  • 6340 Biophysical Chemistry
  • 6350 Electrochemical Kinetics
  • 6360 Solid State Chemistry
  • 6380 Adsorption on Surfaces
  • 6381 Surface and Interface Science
  • 6382-6389 Selected Topics in Physical Chemistry
  • 6390-6398 Selected Topics in Physical Chemistry
  • 6399 Chemical Kinetics and Dynamics
  • 6401 Organic Spectroscopic Analysis I
  • 6402 Organic Spectroscopic Analysis II
  • 6470 Physical Organic Chemistry
• 6590-6599 Selected Topics in Theoretical and Computational Chemistry
• 6600 Applications of Inorganic and Organometallic Chemistry to Toxicology

• **Computational Science (CMSC)**
  • 601W Work Term 1
  • 602W Work Term 2
  • 6900-6909 Special Topics
  • 6910 Matrix Computations and Applications (credit may be obtained for only one of CMSC 6910 and COMP 6732)
  • 6920 Applied Scientific Programming
  • 6925 Tools of the Trade for Programming High Performance Computers (2 credit hours)
  • 6930 Algorithms for Distributed and Shared Memory Computers
  • 6950 Computer Based Research Tools and Applications (credit may be obtained for only one of CMSC 6950 and the former CMSC 6940) [We assume any references to 'CMSC' in the calendar will be updated with the appropriate acronym once the Registrar's office assigns a new acronym to reflect the updated name of the program.]

• **Computer Science**
  • 6713 Software Engineering
  • 6722 Advanced Computer Architectures
  • 6728-6729 Special Topics in Computer Systems - Computer Networks
  • 6731 Topics in Numerical Methods
  • 6732 Matrix Computations
  • 6738-6739 Special Topics in Numerical Methods
  • 6752 Applications of Computer Graphics
  • 6756 Digital Image Processing

• **Earth Sciences**
  • 6141 Rotation of the Earth
  • 6142 Theory of Global Geodynamics
  • 6171 Advanced Exploration Seismology
  • 6172 Borehole Seismic
  • 6175 Gravity and Magnetic Methods
  • 6177 Mathematical Formulations of Seismic Wave Phenomena
  • 6918 Airborne and Borehole Electromagnetic Methods
  • 6994 Special Topics in Earth Sciences - Geophysical Inversion and Applications
  • 7110 Physics of the Solid Earth
  • 7120 Crustal Geophysics

• **Mathematics and Statistics**
  • 6101-6112-6119 Special Topics in Applied Mathematics
  • 6201 Numerical Methods for Partial Differential Equations
  • 6210 Numerical Solution of Differential Equations (required course for Computational Science)
  • 6212 Numerical Methods for Initial Value Problems
  • 6588 Selected Topics in Statistics and Probability - Generalized Additive Models with Applications in Scientific Visualization

• **Physics and Physical Oceanography**
  • 6000 Condensed Matter Physics I
  • 6200 Nonlinear Dynamics
6308 Ocean Dynamics I
6309 Ocean Dynamics II
6310 Physical Oceanography
6316 Ocean Measurements and Data Analysis
6317 Ocean Acoustics
6318 Numerical Modelling
6320 Turbulence
6321 Coastal Oceanography
6323 Stability Theory
6400 Statistical Mechanics
6402 Theory of Phase Transitions
6800 Group Theory
6850 Quantum Mechanics I

**Engineering and Applied Science**
- 9015 Ocean Engineering Hydrodynamics
- 9052 Ice Properties and Mechanics
- 9501 Finite Element Analysis
- 9713 Stochastic Hydrology
- 9815 Electromagnetic Propagation
- 9821 Digital Signal Processing
- 9826 Advanced Control Systems
- 9861 High-Performance Computer Architecture
- 9865 Advanced Digital Systems
- 9869 Advanced Concurrent Programming
- 9871 Information Theory and Coding
Request for Approval of a Graduate Course

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version: http://get.adobe.com/reader. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Fill in the required data and save the file; (5) Submit the completed form to:

School of Graduate Studies; Memorial University of Newfoundland; IIC-2012 (Bruneau Centre for Research and Innovation); St. John’s, NL A1C 5S7 Canada  Fax: 709.864.4702  eMail: sgs@mun.ca

To: Dean, School of Graduate Studies

From: Faculty/School/Department/Program

Subject: ☐ Regular Course  ☐ Special/Selected Topics Course

Course No.: Psychology 6623

Course Title: Child Psychopathology, Assessment and Diagnosis

I. To be completed for all requests:

   A. Course Type:  ☑ Lecture course  ☐ Lecture course with laboratory
      ☐ Laboratory course  ☐ Undergraduate course
      ☐ Directed readings  ☐ Other (please specify)

   B. Can this course be offered by existing faculty?  ☐ Yes  ☐ No

   C. Will this course require new funding (including Payment of instructor, labs, equipment, etc.)?  ☐ Yes  ☐ No

      If yes, please specify:

   D. Credit hours for this course: 3

   E. Estimated number of contact hours per semester: 36

   F. Course description (reading list required):

       See attached

   G. Method of evaluation:

       Written  Percentage  Oral

       Class tests  20
       Assignments  40  40

       Other (specify):

       Final examination:

       Total  60  40

1 Must specify the additional work at the graduate level
II. To be completed for special/selected topics course requests only

For special/selected topics courses, there is no evidence of:

Instructor's initials

1. duplication of thesis work
2. double credit
3. work that is a faculty research product
4. overlap with existing courses

Recommended for offering in the □ Fall □ Winter □ Spring 20

Length of session if less than a semester:

III. This course proposal has been prepared in accordance with General Regulations governing the School of Graduate Studies

Christine Arlett
Course instructor

Date

November 5, 2013

Gerard Martin
Approval of the head of the academic unit

Date

November 5, 2013

IV. This course proposal was approved by the Faculty/School/Council

Secretary, Faculty/School/Council

Date

Updated October 2011
Request for Approval of a Graduate Course

To: Dean, School of Graduate Studies  
From: Faculty/School/Department/Program  
Subject: ☐ Regular Course ☐ Special/Selected Topics Course  
Course No.: Psychology 7022  
Course Title: Practicum in Child Assessment and Diagnosis

I. To be completed for all requests:

A. Course Type: ☐ Lecture course ☐ Lecture course with laboratory  
☐ Laboratory course ☐ Undergraduate course  
☐ Directed readings ☑ Other (please specify) Practicum

B. Can this course be offered by existing faculty? ☑ Yes ☐ No

C. Will this course require new funding (including Payment of instructor, labs, equipment, etc.)?  
If yes, please specify:

D. Credit hours for this course: 3

E. Estimated number of contact hours per semester: 180

F. Course description (reading list required):  
See attached

G. Method of evaluation:  

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Pass/Fail

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1 Must specify the additional work at the graduate level
II. To be completed for special/selected topics course requests only

For special/selected topics courses, there is no evidence of:

Instructor’s initials

1. duplication of thesis work
2. double credit
3. work that is a faculty research product
4. overlap with existing courses

Recommended for offering in the □ Fall □ Winter □ Spring 20

Length of session if less than a semester:

III. This course proposal has been prepared in accordance with General Regulations governing the School of Graduate Studies

Christine Ariett
Course instructor

Gerard Martin
Approval of the head of the academic unit

November 5, 2013
Date

November 5, 2013
Date

IV. This course proposal was approved by the Faculty/School/Council

Secretary, Faculty/School/Council

Date

Updated October 2011
Proposal

Calendar Change(s) to Existing Program(s)

Executive Summary
The following calendar changes are proposed based on a review of the PsyD program description carried out in the spring of 2013.

3.1 Administration
The proposed changes
- clarify that the director must be a registered psychologist and a fulltime faculty member of the Department of Psychology; and
- expand the membership of the administrative committee to include representatives from Eastern Health and the PsyD student body.

3.2 Admission Criteria
The proposed changes provide more specific detail for applicants about which courses they need to have completed.

3.3 Program of Study
We propose removing this section from the calendar, since the sequence of courses is subject to change from year to year based on faculty availability. The information will instead be made available to students in the PsyD program description.

3.4 Courses
Two new courses are proposed:
- Psychology 6623: Child Psychopathology, Assessment and Diagnosis.
  This course combines material previously offered through two existing courses (Psychology 6613 and Psychology 6621).
- Psychology 7022: Practicum in Child Assessment
  This course replaces Psychology 7021. In addition, the word “adult” should be inserted in the title of Psychology 7020. This change results in a sequence of adult and child material rather than a parallel offering which makes it easier to find appropriate instructors.

Resource Implications: Instructional Costs
The only proposed change associated with instructional costs is the new course offering. The new course will be offered in place of other courses currently listed and will in fact result in one fewer course needing to be taught.

Consultations
Approval is being sought from the two units associated with the program, the Department of Psychology and the University Counselling Centre.

Resource Implications: Library Holdings and/or Other Resources Required
No library resources beyond those already available for the PsyD program will be required for the new course.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation or authorized new funding for the Department of Psychology.

Signature of Unit Head (if appropriate): _______________________________
31.1 Administration

1. The Director, who must be a registered Psychologist and hold a full-time faculty position in the Department of Psychology at Memorial University, is appointed by the Head of the Psychology Department following a consultative process that includes the faculty most directly associated with the Psy.D. program.

2. The Psy.D. Administrative Committee consists of the Director and representatives from academic units involved in the program, Eastern Health, the Association of Newfoundland Psychologists and the Psy.D. student body. The Psychology Department Head, on the recommendation of the Director, appoints Committee members. The student representative is elected by the Psy.D. students.

31.2 Admission Criteria

1. Students with Master's level degrees who wish to be considered for the program must have completed the undergraduate degree in Psychology and the undergraduate course requirements described below.

2. Applicants are required to have an undergraduate Honours degree in psychology that includes an Honour's thesis as well as courses in each of the following areas:
   a. Abnormal psychology
   b. Developmental psychology
   c. Neuroscience
   d. Cognition
   e. Learning theory
   f. Social psychology
   g. History and systems
   h. Statistics
   i. Research design

3. Admission to the program is competitive. Applicants will be ranked according to academic aptitude, personal and interpersonal competence, clinical and professional potential, and availability of a supervisor. The application shall include academic transcripts, results of the Graduate Record Examination (verbal, quantitative and analytical subtests), three letters of recommendation and a statement of interests and objectives. One letter of recommendation must specifically address the suitability of the applicant for clinical work. Applicants who are short-listed will be interviewed, either in person or via telephone. Work experience, research experience, extra-curricular activities, and clinically relevant public service will be taken into consideration.

31.3 Program of Study

Students are required to successfully complete at least 66 credit hours in regulation graduate courses. These include:

- 9 credit hours in statistics and research design courses (6000, 6001, 6602)
- 30 credit hours in core courses (6611, 6612, 6620, 6623, 6613, 6630, 6631, 6632, 6633, 6650)
- 27 credit hours in practicum courses (7010, 7020, 7021, 7030, 7031, 7032, 7033, 7034, 7035)
Students must also complete a year-long internship, pass a comprehensive exam and successfully complete a research thesis.

3.1.4 Courses
6000 Advanced Statistics
6001 Research Design
6602 Research Design in Clinical Psychology
6610 Principles of Effective Relationships
6611 Ethics of Professional Practice
6612 Adult Psychopathology
6613 Child Psychopathology
6614 Selected Topics in Psychopathology
6620 Principles of Adult Assessment and Diagnosis
6621 Principles of Child Assessment and Diagnosis
6622 Selected Topics in Assessment and Diagnosis
6623 Child Psychopathology, Assessment and Diagnosis
6630 Principles of Intervention with Adults
6631 Principles of Intervention with Children
6632 Community Interventions
6633 Clinical Psychopharmacology
6634 Selected Topics in Intervention
6640 Consultation Processes
6650 Supervision
6660-6669 Special Topics in Clinical Psychology
7010 Practicum in Ethics and Relationship Skills
7020 Practicum in Adult Assessment and Diagnosis
7021 Practicum in Clinical Assessment and Diagnosis
7022 Practicum in Child Assessment and Diagnosis
7030 Practicum in Assessment and Intervention I
7031 Practicum in Assessment and Intervention II
7032 Practicum in Community Intervention and Interprofessional Practice
7033 Practicum in Advanced Assessment and Intervention I
7034 Practicum in Advanced Assessment and Intervention II
7035 Practicum in Rural Intervention and Interprofessional Practice
7050 Practicum in Supervision I
7051 Practicum in Supervision II
Sample Course Outline

Psychology 6623: Child Psychopathology, Assessment, and Diagnosis

Texts:

Calendar Description: Psychology 6623 Child Psychopathology, Assessment, and Diagnosis reviews theory and research in developmental psychopathology. The course focuses on conceptualizing and assessing children's disorders from a developmental perspective. The role of family, culture and community in shaping the expression of children's disorders is integrated with a consideration of biological and psychological factors. A multimethod approach to assessment is reviewed with respect to specific childhood disorders. Ethical issues related to the assessment of children are discussed.

Course Objectives: This course will provide an overview of the major areas of psychopathology, assessment, and diagnosis among children and adolescents. For each disorder area reviewed, the emotional and behavioral dysfunction underlying the disorder will be discussed in historical context. Current and relevant empirical findings relevant to assessment, diagnosis, epidemiology, course and outcome, comorbidity, associated developmental and social problems, health outcomes, risk factors, and etiology will be presented, reviewed, and discussed for each disorder area covered. Conceptual and theoretical issues salient to each disorder, its assessment, and appropriate diagnosis will also be discussed. Students will achieve a greater understanding of the key issues relevant to the study of child psychopathology, assessment, and diagnosis and will acquire basic skills in critically evaluating the current research literature in these areas.

Tentative Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Chapter (1/2)</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Child Psychopathology</td>
<td>1/1</td>
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<tr>
<td></td>
<td>A Developmental Systems Perspective</td>
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<tr>
<td></td>
<td>Assessment of Child and Family Disturbance: A Developmental-Systems</td>
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<tr>
<td></td>
<td>Approach</td>
<td></td>
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<tr>
<td>2</td>
<td>Behaviour Disorders 1: Attention-Deficit/Hyperactivity Disorder</td>
<td>2/2</td>
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<tr>
<td></td>
<td>Assessment of Attention-Deficit/Hyperactivity Disorder</td>
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<tr>
<td>3</td>
<td>Behaviour Disorders 2: Conduct and Oppositional Defiant Disorders</td>
<td>3/3</td>
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<tr>
<td></td>
<td>Assessment of Conduct and Oppositional Disorders</td>
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<tr>
<td>4</td>
<td>Emotional and Social Disorders 1: Childhood Mood Disorders</td>
<td>5/5, 6, 7</td>
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<td></td>
<td>Assessment of Child and Adolescent Depression, Pediatric Bipolar Disorder, Adolescent Suicidal and Non-suicidal Self-Harm Behaviours</td>
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<tr>
<td>5</td>
<td>Emotional and Social Disorders 2: Childhood Anxiety Disorders</td>
<td>6/8</td>
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<td></td>
<td>Assessment of Anxiety in Children and Adolescents</td>
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<td>Midterm exam assigned</td>
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<td>6</td>
<td>Emotional and Social Disorders 3: Childhood Posttraumatic Stress Disorder</td>
<td>7, 8/9</td>
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<tr>
<td></td>
<td>Emotional and Social Disorders 4: Social Withdrawal in Childhood</td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>Date</td>
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<tr>
<td>7</td>
<td>Developmental and Learning Disorders 1: Autistic Disorder</td>
<td>9/10</td>
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<tr>
<td></td>
<td>Assessment of Autism Spectrum Disorders</td>
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<tr>
<td>8</td>
<td>Developmental and Learning Disorders 2: Mental Retardation</td>
<td>11, 12, 13</td>
</tr>
<tr>
<td>9</td>
<td>Developmental and Learning Disorders 3: Learning Disabilities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assessment of Intellectual Disability (Mental Retardation) and Learning Disabilities</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Child Maltreatment, Eating Disorders, Health-Related Disorders</td>
<td>14, 15, 16, 16</td>
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<tr>
<td></td>
<td>Assessment of Child Abuse and Neglect, Child Sexual Abuse, Eating</td>
<td></td>
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<td></td>
<td>Disorders</td>
<td></td>
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<tr>
<td>11</td>
<td>In-class presentations</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>In-class presentations</td>
<td></td>
</tr>
</tbody>
</table>

**Student Evaluation:**
Your level of attainment in this course and your final grade will be determined by the following:
4 written article summaries and oral class presentations – 40%
Midterm exam – 20%
Final presentation and paper – 40%

**Potential Instructors:**
Christine Arlett
Sarah Francis
Sample Course Outline

Psychology 7022: Practicum in Child Assessment and Diagnosis

Course Description
Psychology 7022 Practicum in Child Assessment and Diagnosis provides an opportunity for students to complete a psychoeducational assessment of a child. Students will administer a selected battery of psychometric tests and interviews, interpret the results, provide verbal feedback and write a report of their findings and recommendations. Where possible they will also participate in a case conference or school meeting. The practicum requires that students spend 16 hours per week for 6 weeks working under supervision in the Psychology Clinic and attend a weekly seminar.

Course Outline
The practicum will take place within the Psychology Clinic during the intersession semester. Students are required to be on-site 16 hours per week for 6 weeks and are paired with more senior students for some supervision purposes.

Evaluation
Pass/Fail based on student responsibilities throughout the course (e.g., attendance, quality of assigned work, professional and ethical conduct at all times).

Library Holdings and/or Other Resources
Psychological test materials

Instructors
Core PsyD program faculty or a sessional instructor who is a registered psychologist.
SUMMARY PAGE FOR SENATE

Approval Form

Program Title

PsyD

Calendar Change(s) - See attached

Secondary Calendar Changes

None required

Rationale

The proposed changes are based on a review of the PsyD program description carried out in the spring of 2013.

Consultations Sought From

Department of Psychology
University Counselling Centre

Library Report Received

Yes / N/A

Signature: Dean, Associate Vice-President (Academic) or Vice-President

Name

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Request for Approval of a Graduate Course

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version: http://get.adobe.com/reader. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Fill in the required data and save the file; (5) Submit the completed form to:

School of Graduate Studies: Memorial University of Newfoundland; IIC-2012 (Bruneau Centre for Research and Innovation), St. John’s, NL A1C 5S7 Canada  Fax: 709.864.4702  eMail: sus@mun.ca

To: Dean, School of Graduate Studies
From: Faculty/School/Department/Program
Subject: ☑ Regular Course  ☐ Special/Selected Topics Course

Course No.: Chem 6500

Course Title: Advanced NMR Spectroscopy

I. To be completed for all requests:

A. Course Type: ☑ Lecture course with laboratory  ☐ Lecture course  ☐ Laboratory course  ☐ Directed readings  ☐ Undergraduate course  ☐ Other (please specify) Labs

B. Can this course be offered by existing faculty?  Yes ☑ No  ☐

C. Will this course require new funding (including Payment of instructor, labs, equipment, etc.)?  Yes ☐ No ☑

If yes, please specify:

D. Credit hours for this course: 3

E. Estimated number of contact hours per semester: 36 (lecture) + 18 (lab)

F. Course description (reading list required):

Chem 6500 will deal with both the theoretical concepts (lectures) and practical applications (labs) of advanced level nuclear magnetic resonance (NMR) techniques, including 2D solution NMR, diffusion, solid state NMR and MRI. See the attached documentation for the reading list.

G. Method of evaluation:

<table>
<thead>
<tr>
<th></th>
<th>Written</th>
<th>Percentage</th>
<th>Oral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class tests</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignments</td>
<td>30%</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Other (specify): Labs</td>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final examination:</td>
<td>25%</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>90%</td>
<td></td>
<td>10%</td>
</tr>
</tbody>
</table>

1 Must specify the additional work at the graduate level
II. To be completed for special/selected topics course requests only

For special/selected topics courses, there is no evidence of:

1. duplication of thesis work
2. double credit
3. work that is a faculty research product
4. overlap with existing courses

Instructor's initials

Recommended for offering in the

☑ Fall  ☑ Winter  ☐ Spring  2014

Length of session if less than a semester:

III. This course proposal has been prepared in accordance with General Regulations governing the School of Graduate Studies

Course instructor

Oct. 24, 2013

Date

Approval of the head of the academic unit

Oct. 24, 2013

Date

IV. This course proposal was approved by the Faculty/School/Council

Secretary, Faculty/School/Council

Date

Updated October 2011
Proposal for Advanced NMR Spectroscopy Graduate Course

RESOURCE IMPLICATIONS

Instructional Costs

Library Holdings and/or Other Resources Required

The course will take advantage of the existing NMR equipment available within C-CART. Small extra costs will be required solvents and chemicals. The books listed for the course are currently available at the library or free of charge online, with the exception of Nuclear Magnetic Resonance Spectroscopy by John H. Nelson (Pearson). Students can purchase this book online through various sources, such as www.amazon.ca.

The costs associated with new program/course(s) can be met from within the existing budget allocation.

______________________________

Signature of Dean/Associate Vice-President (Academic)/
Vice-President:

______________________________

Date:
NEW COURSES

Resource Implications

No additional instructional costs. Minor costs for chemicals can be met from the departmental budget.

Executive Summary

This new course will address both the theoretical concepts and practical applications of advanced nuclear magnetic resonance (NMR) techniques, such as 2D solution NMR, diffusion, solid-state NMR and MRI.

Rationale

NMR spectroscopy is a technique in constant evolution. Its applications reach all areas of research, including chemistry, but also physics, biochemistry, medical sciences, material sciences, and geology to name a few. Due to the diversity of its applications, there is a multitude of advanced NMR techniques to fit the nature of the sample studied and of the information sought.

A substantial portion on the graduate students in the Chemistry Department, especially those in the areas of organic and inorganic chemistry, rely on NMR spectroscopy to identify, characterize and study compounds associated with their research programs. Incoming graduate students have widely varied levels of exposure to both the theoretical and practical aspects of NMR spectroscopy from their undergraduate programs. Even those students with a reasonable amount of experience would benefit greatly from a graduate level course on NMR spectroscopy, which the Chemistry Department does not offer at the moment.

Graduates of the undergraduate chemistry program at Memorial will have taken one course with a component dedicated to NMR theory and applications (CHEM 3500: Spectroscopic Analysis, Spectroscopy and Structure), but will not have covered much more than basic concepts and applications. Indeed, current faculty and students have identified the need for our students (undergraduates and graduate students) to have the opportunity to learn more than basic NMR concepts (\(^1\)H and \(^13\)C solution NMR) in order to facilitate current research endeavors and to extend their knowledge to a broader definition of NMR. This has resulted in the creation of an new upper level undergraduate course, Chem 4500 (Advanced NMR Spectroscopy), which will be offered for the first time in the W2014 semester. To provide the same opportunities to graduate students, especially those coming from other institutions, it is proposed that a graduate version of this course be offered (CHEM 6500, Advanced NMR Spectroscopy) and linked to CHEM 4500.

The Chemistry Department has access to a multi-purpose instrument facility, so the students will perform hands-on experiments directly related to the concepts covered in class. As such, they will learn considerably more than just the routine operation of the spectrometer.
Course Number and Title

CHEM 6500. Advanced NMR Spectroscopy.

Abbreviated Course Title

Advanced NMR Spectroscopy

Calendar Description

CHEM 6500. Advanced NMR Spectroscopy examines advances in modern and traditional NMR techniques, the principles and applications of solution and solid-state NMR spectroscopy, as well as of micro imaging.

AR=attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

LH=3
LC=3
CR=CHEM 4500

Course Outline and Method of Evaluation

1. Introduction to NMR spectroscopy
   a. General definitions
   b. Energy, Excitation and Relaxation
   c. Chemical Shifts, Chemical equivalence
   d. J-couplings, Dipolar couplings
   e. Product operators

2. Practical aspects
   a. Spectrometer
   b. Lock
   c. Shimming
   d. Gradient
   e. Pulse sequence
   f. Signal suppression
   g. Processing parameters.

Lab 1: Optimizing acquisition parameters
   * Measuring pulses.
   * Relaxation measurement: T1, T2

3. Multidimensional NMR
   a. Definition of the n-th dimension.
   b. Homonuclear Correlation: COSY, TOCSY
Proposal for Advanced NMR Spectroscopy graduate course

c. Heteronuclear Correlation: HSQC, HMBC
d. NOESY

Lab 2: Full assignment using 2Ds. Optimizing parameters to the experiment (pulse, mixing time). Adjusting processing parameters.

4. Heteronuclear NMR
   a. Spin 1/2
   b. Quadrupolar nuclei

Lab 3: Solution NMR of $^{195}$Pt.

5. Dynamic NMR
   a. Effect of temperature
   b. Measuring conformational energies

Lab 4: Application

6. Diffusion NMR

Lab 5: $^1$H Diffusion NMR. From diffusion to molecular size.

7. Solid-state NMR
   a. Static NMR
   b. MAS NMR
   c. Cross-polarization
   d. Review of experiments

Lab 6: Running solid state NMR. Adjusting the Magic Angle. Optimizing a CP (Measuring pulses, Hartman-Hahn condition, variable contact time)

8. MRI
   a. Voxels
   b. Gradient
   c. Examples

Evaluation for 6500:

Labs: 20%
Term Paper: 30%
Presentation: 10%
Mid Term: 15%
Final Exam: 25%
Proposed for Advanced NMR Spectroscopy graduate course | 5

Labs: Students will be required to submit reports in which they use materials described in the course to analyze data collected during the lab.

Term Paper: Graduate students will write a research proposal focused on a selected aspect of NMR spectroscopy. An intensive literature review of the chosen subject will be performed, covering both seminal papers and the most recent developments in the area. A detailed research proposal that builds on the subject area should be provided. This will include methodology, expected results and examples of data analysis. A 50-minute research seminar (40-minute presentation followed by a 10-minute question period) will be required.

By comparison, undergraduate students in CHEM 4500 will analyze and present just one given paper (chosen from very recent literature by the instructor). Graduate students, on the other hand, would need to develop an in-depth knowledge of a broader subject they will have chosen themselves, write a full literature review, conceive of a research project, understand its complexity and feasibility, and prepare a full research seminar. This will bring the total amount of work to at least twice that of an undergraduate student.

Texts

- Understanding NMR Spectroscopy by James Keeler
- Nuclear Magnetic Resonance Spectroscopy by John H. Nelson

Library Holdings and/or Other Resources

- 200 and more NMR experiments by Stephan Berger, Siegmar Braun
- Introduction To Spectroscopy by Pavia, Kriz, Lampman, Vyvyan
- Introduction to Solid-State NMR Spectroscopy by Melinda Duer
- Bruker NMR suite
- Relevant publications

Instructor(s)

Dr. Celine Schneider
Proposal for Advanced NMR Spectroscopy graduate course

SUMMARY PAGE

Approval Form for New Courses or Course Changes

Course Title and Number
CHEM 6500: Advanced NMR Spectroscopy

Abbreviated Course Title
Advanced NMR Spectroscopy

Calendar Description
Examines advances in modern and traditional NMR techniques, the principles and applications of solution and solid-state NMR spectroscopy, as well as of micro imaging

Rationale
NMR spectroscopy is a technique in constant evolution. Its applications reach all areas of research, including chemistry, but also physics, biochemistry, medical sciences, material sciences, and geology to name a few. Due to the diversity of its applications, there are a multitude of advanced NMR techniques to fit the nature of the sample studied and of the information sought. It is therefore essential to offer students a course dedicated to the modern use of NMR spectroscopy, beyond the spectrum of organic structure determination.

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Approval Granted by Senate Committee on Graduate Studies

Chair: ________________________________
Secretary: ________________________________
Date: ________________________________
Proposal for an Advanced Nuclear Magnetic Resonance (NMR) Spectroscopy Undergraduate Course

RESOURCE IMPLICATIONS

Instructional Costs

No extra cost. Although this course will be taught on a per course basis, it will allow a regular instructor who would normally teach a 4000 level course to teach a lower level course normally taught by a per course instructor.

Library Holdings and/or Other Resources Required

The course will take advantage of the existing NMR equipment available within C-CART. Minor extra costs will include solvents and chemicals.
The books listed for the course are currently available at the library, with the exception of Nuclear Magnetic Resonance Spectroscopy by John H. Nelson (Pearson).

The costs associated with new program/course(s) can be met from within the existing budget allocation or authorized new funding for the Faculty/School/Campus/Institute of _________________________________.

Signature of Dean/Associate Vice-President (Academic)/Vice-President:

______________________________

Date:

______________________________
NEW COURSES

Resource Implications

No additional instructional costs. Minor costs for chemicals can be met from the department budget.

Executive Summary

This new course will address both the theoretical concepts and practical applications of advanced nuclear magnetic resonance (NMR) techniques, such as 2D solution NMR, diffusion, solid-state NMR and MRI.

Rationale

NMR spectroscopy is a technique in constant evolution. Its applications reach all areas of research, including chemistry, but also physics, biochemistry, medical sciences, material sciences, and geology to name a few. Due to the diversity of its applications, there are a multitude of advanced NMR techniques to fit the nature of the sample studied and of the information sought.

At the moment, the department does not offer any advance level course on NMR spectroscopy. Although most students have taken undergraduate courses with a component dedicated to NMR theory and applications (such as Chem 3500: Spectroscopic Analysis: Spectroscopy and Structure), current faculty and students have identified the need to learn more than basic NMR concepts (\(^1\)H and \(^13\)C solution NMR) in order to facilitate current research endeavors and to extend their knowledge to a broader definition of NMR. Over the past two years in the Chemistry Department, two honors projects were focused on solid-state NMR, and during the summer of 2012, two undergraduate student projects were dedicated to further aspects of solid-state NMR research. Concepts such as multidimensional NMR, hetero-nuclei NMR, solid-state NMR and micro imaging should be introduced to fourth year students.

The course will offer a strong lab component with on-hand experiments directly related to the concepts covered in class. Given that the department has access to a multi-purpose NMR instrument facility, the students will benefit from a practical approach where they will learn more than the routine operation of the spectrometer.

Consultations

This proposal was sent to the Marine Institute (miugconsultations@mi.mun.ca), Grenfell Campus (vpoffice@grenfell.mun.ca), the QEII Library and the Heads of the departments of Biochemistry, Biology, Computer Science, Earth Sciences, Mathematics, Physics, Psychology and Ocean Sciences. Comments were received from the Marine Institute and Grenfell Campus.
The letter/memo sent to other academic units seeking consultation as well as letters or memos received back from units consulted are appended at the end of this document.

**Course Number and Title**

4500 Advanced Nuclear Magnetic Resonance Spectroscopy

**Abbreviated Course Title**

Advanced NMR Spectroscopy

**Calendar Description**

4500 Advanced Nuclear Magnetic Resonance Spectroscopy examines advances in modern and traditional NMR techniques, the principles and applications of solution and solid-state NMR spectroscopy, as well as of micro imaging.

AR= attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

PR= CHEM 3500  
LH=3

**Course Outline and Method of Evaluation**

1. Introduction to NMR spectroscopy  
   a. General definitions  
   b. Energy, Excitation and Relaxation  
   c. Chemical Shifts, Chemical equivalence  
   d. J-couplings, Dipolar couplings  
   e. Product operators

2. Practical aspects  
   a. Spectrometer  
   b. Lock  
   c. Shimming  
   d. Gradient  
   e. Pulse sequence  
   f. Signal suppression  
   g. Processing parameters.

Lab 1: Optimizing acquisition parameters  
   - Measuring pulses.
   - Relaxation measurement: T1, T2
4 | Proposal for Advanced NMR Spectroscopy course

3. Multidimensional NMR
   a. Definition of the n<sup>th</sup> dimension.
   b. Homonuclear Correlation: COSY, TOCSY
   c. Heteronuclear Correlation: HSQC, HMBC
   d. NOESY

Lab 2: Full assignment using 2Ds. Optimizing parameters to the experiment (pulse, mixing time). Adjusting processing parameters.

4. Heteronuclear NMR
   a. Spin 1/2
   b. Quadrupolar nuclei

Lab 3: Solution NMR of $^{195}$Pt.

5. Dynamic NMR
   a. Effect of temperature
   b. Measuring conformational energies

Lab 4: Application

6. Diffusion NMR

Lab 5: $^1$H Diffusion NMR. From diffusion to molecular size.

7. Solid-state NMR
   a. Static NMR
   b. MAS NMR
   c. Cross-polarization
   d. Review of experiments

Lab 6: Running solid state NMR. Adjusting the Magic Angle. Optimizing a CP (Measuring pulses, Hartman-Hahn condition, variable contact time)

8. MRI
   a. Voxels
   b. Gradient
   c. Examples

Evaluation:

Labs: 20%
Term Paper: 25%
Presentation: 5%
Mid Term: 20%
Final Exam: 30%

Labs: Students will be required to submit reports in which they use materials described in the course to analyze data collected during the lab.

Term Paper: Break-through NMR publications of the year will be chosen within all the areas covered in class. Each student would have to pick one of the chosen publications. They would have to explain the pulse sequence, extract the important NMR parameters, analyze the results and discuss the relevance of the paper. A 10 minutes presentation will be required.

Texts

- Understanding NMR Spectroscopy by James Keeler
- Nuclear Magnetic Resonance Spectroscopy by John H. Nelson

Library Holdings and/or Other Resources

- 200 and more NMR experiments by Stephan Berger, Siegmar Braun
- Introduction To Spectroscopy by Pavia, Kriz, Lampman, Vyvyan
- Introduction to Solid-State NMR Spectroscopy by Melinda Duer
- Bruker NMR suite
- Relevant publications

Instructor(s)

Dr. Celine Schneider
Proposal for Advanced NMR Spectroscopy course

SUMMARY PAGE

Approval Form for New Courses or Course Changes

Course Title and Number
C4500/C6500: Advanced NMR spectroscopy

Abbreviated Course Title
Advanced NMR Spectroscopy

Calendar Description
Examines advances in modern and traditional NMR techniques, the principles and applications of solution and solid-state NMR spectroscopy, as well as of micro imaging

Rationale

NMR spectroscopy is a technique in constant evolution. Its applications reach all areas of research, including chemistry, but also physics, biochemistry, medical sciences, material sciences, and geology to name a few. Due to the diversity of its applications, there are a multitude of advanced NMR techniques to fit the nature of the sample studied and of the information sought.
It is therefore essential to offer students a course dedicated to the modern use of NMR spectroscopy, beyond the spectrum of organic structure determination.

Consultations Sought From

1. Marine Institute
2. Grenfell Campus
3. Biochemistry
4. Biology
5. Computer Science
6. Mathematics
7. Physics
8. Psychology
9. Ocean Sciences
10. QELI library

Comments Received

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<thead>
<tr>
<th>Consultations Sought From</th>
<th>Comments Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Marine Institute</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Grenfell Campus</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Biochemistry</td>
<td>No</td>
</tr>
<tr>
<td>4. Biology</td>
<td>No</td>
</tr>
<tr>
<td>5. Computer Science</td>
<td>No</td>
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<td>6. Mathematics</td>
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<td>7. Physics</td>
<td>No</td>
</tr>
<tr>
<td>8. Psychology</td>
<td>No</td>
</tr>
<tr>
<td>9. Ocean Sciences</td>
<td>No</td>
</tr>
<tr>
<td>10. QELI library</td>
<td>No</td>
</tr>
</tbody>
</table>

Library Report Received

No

Approved by Dean, Associate Vice-President (Academic) or Vice-President

Yes/No

Name
FOR OFFICE USE ONLY

Approval Granted by Senate Committee on Undergraduate Studies

Chair: 

Secretary: 

Date: 
CONSULTATIONS

Dear Colleagues,

The Department of Chemistry is proposing two new 4000 level courses. Chem 4305 will replace Chem 4303, which will no longer be offered. Chem 4500 will be a new course offered by the CREATIIT NMR expert, Dr. Celine Schneider. Copies of the proposals are attached for your review.

We would appreciate receiving any comments by Tuesday, November 20, 2012.

Thanks,

Peter Pickup, Head
Department of Chemistry
Memorial University
St. John's, NL A1B 3X7

Response from Grenfell:

Dear Dr. Pickup,

These 2 courses (Chem 4305 and Chem 4500) clearly reflect the teaching expertise in the Chemistry Department. There would be no impact on Grenfell offerings in Env.chemistry, as the courses are mainly specific to MUN-SJ students in their final year.

Respectfully yours,

Dr. Christine Campbell
Head, Division of Science
Grenfell Campus - Memorial Univ. of Newfoundland
Corner Brook, NL Canada A2H 6P9
phone (709) 637-6200, ext 6478 fax (709) 639-8125
ccampbell@grenfell.mun.ca

Response from the Marine Institute:

Thank you for the information regarding Proposed New Chemistry Courses.

We have reviewed the proposed changes and have determined that they have no impact upon our programming.

We are pleased to support the proposed changes.

Sincerely,
Dawn King
for
Charlene Walsh
MI Undergraduate Studies Committee
Marine Institute of Memorial University
October 29, 2013

TO: Academic Deans, Vice-President Grenfell Campus, Vice-President, Marine Institute

FROM: Paul Chancey, Director, Centre for Institutional Analysis and Planning

SUBJECT: CEQ Participation Results

Please find attached two tables that show basic statistics for CEQ participation rates for all academic units for the fall 2012 and winter 2013 semesters. Note that the fall 2012 semester was the last paper-based implementation of the CEQ, and Winter 2013 was the first full implementation of the on-line process.

Overall, we are encouraged by the results for the winter. All of the literature that was reviewed prior to implementation of the new system indicated that response rates would decline from the paper-based system, and this did happen. However, there were a number of units where the undergraduate response rates exceeded 40%, which was better than anticipated at this stage of the process. There has also been a gradual improvement in online response rates since the pilot project began.

Graduate student response rate was 48.2%, which is indicative of one of the most prevalent trends that we have seen in the data so far. When response rates were analyzed by course level, the 1000 level courses showed the lowest response rates, with the response rates for courses at the 2000 level and beyond showing progressive increases.

However, there is still much to be done to further enhance participation rates. The strategy of the Senate Committee for Course Evaluation (SCCE) and CIAP is to take a multifaceted approach to this issue. It has been determined that one of the more important areas for consideration is engagement of first year students, which will have to be an annual exercise. Good strategies at this level should have a significant impact at all levels over time. CIAP has also been in contact with Marketing and Communications and are working with them to develop a general awareness campaign. There are also plans to speak to the student leadership to determine what they might be able to do to assist.
The final piece of the equation is promotion by faculty members in the classroom. Individual classes have had very strong response rates, ranging from 60% to in excess of 90%. Informal feedback with some of the faculty members involved indicates that in many of these cases they have actively promoted the CEQ during their classes.

We are seeking opportunities to speak to groups of faculty members about the CEQ and how they can help improve response rates. We are tentatively scheduled to present at a department heads meeting in the fall and would welcome an opportunity to speak for 10 – 15 minutes at one of your faculty council meetings. It is unlikely that we would be able to cover all of these groups in one semester, but hope to do so over the next two semesters.

The SCCE and CIAP greatly appreciate your cooperation with this project to date, and look forward to your continued support in the coming semesters.

Paul Chancey  
Director

cc: Dr. David Wardlaw, Provost  
Dr. Doreen Neville, Associate Vice-President (Academic)
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CEG Exempt Courses refers to courses that by policy are exempt from using the CEG but for which academic units choose to use the CEG as the method of evaluation.

CEG Maidned Courses included in Aggregates refers to CEG mandated courses minus any courses identified at the reporting stage that by policy are excluded from aggregate statistics and publication.

*This includes any courses where number of respondents is less than five.*
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<td>0</td>
<td>2</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Total Grenfell Campus</td>
<td>190</td>
<td>138</td>
<td>52</td>
<td>87</td>
<td>27.7%</td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hartford</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Privateer</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>18.6%</td>
</tr>
<tr>
<td>Distance Education</td>
<td>34</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Grand Total</td>
<td>1,206</td>
<td>982</td>
<td>224</td>
<td>797</td>
<td>32.6%</td>
</tr>
</tbody>
</table>

* CEQ Exempt Courses refers to courses that by policy are exempt from using the CEQ, but for which academic units choose to use the CEQ as the method of evaluation.
* These courses are not summarized in aggregate statistics, and are not subject to publication.
* CEQ Mandated Courses Included in Aggregates refers to CEQ mandated courses minus any courses identified at the reporting stage that by sub-policy are excluded from aggregate statistics and publication.
* This includes any courses where number of respondents is less than five.
* The Nursing CEQ form was not integrated into the online system until Spring 2013, therefore CEQs for Nursing courses in Winter 2013 were administered by paper and not included in regular processing.