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, September 18, 2013, at 1 p.m. in C-2045.

AGENDA (Revised)

1. Regrets
2. Adoption of the Minutes of April 17, 2013
3. Business Arising from the Minutes
4. Correspondence: None
5. Reports of Standing Committees:
   A. Undergraduate Studies Committees:
      b. Response to Senate Committee on Undergraduate Studies, Award of Transfer Credit During a Period of Academic Withdrawal, paper 5.A.b (2 pages).
   B. Graduate Studies Committee:
      a. Department of Biochemistry, special topics course, BIOC 6001, Bioinformatics Analysis Techniques, paper 5.B.a (6 pages). Approved by the committee and included for information only.
      b. Department of Earth Sciences, special topics course, EASC 6902, Modern Depositional Environments as the key to effective facies modelling, paper 5.B.b (7 pages).
      c. Department of Computer Science, special topics course, COMP 6746, Parameterized Complexity Analysis: Foundations and Applications, paper 5.B.c (5 pages). Approved by the committee and included for information only.
      d. Department of Chemistry, proposal for new course, CHEM 6156, Analytical method development and sampling, paper 5.B.d (9 pages).
   C. Nominating Committee:
      a. Approval of committee matrix, paper 5.C.a (2 pages).
   D. Library Committee: Report by Dr. J. Lewis
6. Reports of Delegates from Other Councils
7. Report of the Dean
8. Question Period
9. Adjournment

Mark Abrahams
Dean of Science
A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, April 17, 2013, at 1:00 p.m. in room C-2004.

**FSC 2183**

Present

- Biochemistry
  - Mulligan, M.

- Biology
  - Chapman, T.
  - Marino, P.

- Chemistry
  - Pickup, P.

- Computer Science
  - Bungay, S.

- Mathematics & Statistics
  - Goodaire, E.
  - Pike, D.
  - Radford, C.

- Physics & Physical Oceanography
  - Morrow, M.
  - Saika-Voivod, I.

- Psychology
  - Martin, G.

- Dean of Science
  - Abrahams, M.
  - Foss, K.
  - Foster, A.
  - Rideout, J.
  - Zedel, L.

- Economics
  - Waples, M.J.

- Geography
  - Catto, N.

- DELTS
  - Hickey, R.
Library
Alcock, E.

Medicine
Yi, Y.

Registrar’s Office
Burry, J.

Undergraduate Students
Kennedy, S.

FSC 2184  Regrets
Shannon Sullivan    Nathan Cook    Dorothy Vaandering
Brad de Young      Bill Schipper

FSC 2185  Adoption of Minutes
Moved: Minutes of the March 20, 2013, meeting be adopted as circulated (Mulligan/Pike). There were suggested changes to the minutes for FSC 2180, second paragraph. The paragraph stated:
   It was also asked whether the Canadian Council of Deans of Science had made a recommendation regarding the experimental lakes area. The Dean confirmed that a recommendation has not yet been made.
This has been amended to:
   It was also asked whether the Canadian Council of Deans of Science had made representation regarding the Experimental Lakes area. The Dean confirmed that such representation has not been made.
Carried as Amended.

FSC 2186  Business Arising:  None

FSC 2187  Correspondence:  None

FSC 2188  Reports of Standing Committees:
A.  Undergraduate Studies Committee:
   Report presented by Andy Foster, Associate Dean (Undergraduate and Administration).
   a.  Moved: Department of Biology, proposal for new course, BIOL 4607, Models in Biology (Foster/Chapman).  Carried.
   b.  Moved: Response to Senate Committee on Undergraduate Studies, Review of Honours Regulations (Foster/Morrow).  Carried.

C.  Nominating Committee:  None

D.  Library Committee:  None
Planning Update on the Core Sciences Building
Preliminary planning for the Core Sciences building continues. The functional space planning analysis is complete and is now proceeding to architectural concepts and finally cost projections. We are hoping to present the report to government in the next few months with the hope we can then proceed to full architectural plans.

The Budget
The budget for the university has now been announced and we have received an operating grant that is roughly equivalent to that for the preceding year. However, it should be noted that the Auditor General is now conducting a review of registration data and all operations. Simultaneously, the government is conducting a 10-year sustainability plan that includes a review of the academic operations of the university, specifically looking for how we use our resources and what efficiencies in operations exist. Combined, that does suggest the university will be looked at very closely in the next budget.

The First Annual Science Graduation Reception
Science students have decided that there is too great a challenge selling tickets for the graduation reception planned for June 1. This event was to be subsidized by the Dean’s office and we are now examining the feasibility of hosting the event with the planned date May 27 or 28. If the project is feasible, all will be welcome to attend and congratulate this year’s graduates.

CRC Proposals
A call for proposals for CRC chairs was received today. They include 3 Tier 2 CIHR and one Tier 2 NSERC chairs. The Dean will be working with Department Heads to develop proposals that are due to the VPR by 4:30 pm on June 3.

Scientists Without Borders in Brazil
It is in the early stages of negotiations but we are looking at an agreement with Brazil that will provide their Ph.D. students with full funding to attend Memorial.

Last Meeting of the Academic Year
As a reminder this is our last regularly scheduled meeting of Science Council for this academic year. Council executive will continue to meet over the summer and the Dean looks forward to the resumption of Science Council in September.
FSC 2191  Question Period
The Dean was asked if he was aware that Housing and Conference Services will be charging for the rental of space on campus for conferences and events. It is feared that these fees will make the cost of hosting such events prohibitive and therefore limit the number of events occurring at Memorial. The Dean was not aware of this change in policy.

It was also asked whether new teaching facilities will be included in the new Science building and, if not, where classrooms will be located. The Dean confirmed that the new building will not house classrooms and that existing classrooms will be used.

An email was recently circulated throughout the university requesting suggestions for ways to increase efficiencies in our operations. Erika Mershrod suggested that FM should model itself more like Technical Services which seems to be more efficient in its operations. She is interested in joining others to forward comments to this effect. The Dean noted that, hopefully, the new Associate Vice-President (Administration) will be able to make improvements in this area.

FSC 2192  Adjournment:
The meeting adjourned at 1:17 p.m.
May 17, 2013

TO: All Members, Faculty Council of Science

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

SUBJECT: New Course Proposal- Department of Economics

At a meeting conducted via e-mail May 2-15, 2013, the Undergraduate Studies Committee of the Faculty of Science agreed that the proposal for a new course, Economics 3670: Applications of Choice Theory, be forwarded to Faculty Council for approval.

[Signature]

Joan Burry  
Assistant Registrar and  
Secretary: Committee  
on Undergraduate Studies,  
Faculty of Science
Proposal
New Course

ECON 3670
Applications of Choice Theory

RESOURCE IMPLICATIONS: Instructional Costs

The current departmental computing facilities, software, faculty, instructional staff, and technical support staff will be utilized. No new faculty will be required to teach this course. No new administrative or academic cost will be incurred.

RESOURCE IMPLICATIONS: Library Holdings and/or Other Resources Required

The information sources of the University's libraries and the sources on the internet to which the library has leased access, need to be just minimally augmented in anticipation of this proposed course. Only a few library acquisitions are required but are already on order.

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 Economics.

Library Report attached.

Signature of Unit Head (if appropriate): ________________________________

Date: ________________________________

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

______________________________

Date: ________________________________
New Course Proposal: ECON 3670 Applications of Choice Theory

Course Number and Title

ECON 3670 Applications of Choice Theory

Abbreviated Course Title

NA

Calendar Description

ECON 3670...

... examines microeconomic choices made outside perfectly competitive markets. Its topics include areas to which choice theory has been applied, for example, the economics of labour, marriage, sport, entertainment, crime, gambling, and the consumption of addictive goods.

PR: Economics 2010

Rationale

This course will provide students with insights into how economic theory can be used to analyse economic, legal and political choices in everyday life contexts where the identification of rational choice is problematic and its study challenging. It complements the department’s courses in theoretical microeconomics and quantitative methods, while supplementing their more specialized counterparts. Sub-disciplines of sport, crime, family and labour economics are represented in the course material, but applied choice is its focus. Its topics will give students opportunities to examine the origins and development of empirical work by economists such as Gary Becker and Tibor Scitovsky.

Non-Economics Majors can also benefit from this course, since the topics will be treated at an accessible level (the only prerequisite being Introductory Microeconomics).

Consultations

Distributed to the Faculties of Science, Arts, Business Administration, Education, Engineering and Applied Science, Medicine, Schools of Human Kinetics and Recreation, Music, Nursing, Social Work, and to Grenfell Campus and the Marine Institute.
New Course Proposal: ECON 3670 Applications of Choice Theory

Sample Course Outline and Method of Evaluation

Often non-economists associate Economics with money, stock markets, inflation rates, exchange rates, and other notions that they see relatively far removed from their everyday lives. However, Economics is about people and the many kinds of choices they make. This course showcases the claims of economic analysts to rationally and formally explain all types of choices made by individuals. Some of the topics covered apply economics in somewhat unusual and often provocative ways, hoping to spark the students’ interest and curiosity by challenging their so-called “conventional wisdom”. However, all of them can be used to invoke the models offered by economic theory to deal with situations that depart from the perfectly competitive environment covered by the Introductory Economics courses (the only prerequisite).

The course includes several subthemes including aspects of the economics of leisure and labour supply, the economics of professional organised sport; the economics of marriage; the economics of crime and the regulation of illegal drugs and the consumption of addictive goods; and the economics of the entertainment industry.

Many of the topics covered follow the insights of Gary Becker, who pioneered research from an economist perspective on everyday life decision-making processes of households that were traditionally considered beyond the purview of economics. Simply put, Becker argued that the economist’s marginal-cost versus marginal-benefit framework can also offer useful explanations for the type of behaviours studied in this course and his influential works, even if some of his theories have now been contested by other economists, will provide a starting point for the applications of rational choice theory in a variety of contexts.

Sample Course Outline

Week 0-1

Introduction


Scitovsky, Tibor The Joyless Economy: An inquiry into human satisfaction and consumer dissatisfaction, 1976, Ch. 5
New Course Proposal: ECON 3670 Applications of Choice Theory

Week 2-5

I. Sins and Needles
   • Economics of Drug Addiction
   • Economics of Drug Trafficking
   • Economics of Drug Prohibition

   * Bowmaker (2006), Part I

   * Coyle (2004) Ch. 2. Illegal Drugs: It's the Economy, Man

And

   * Ch. 3. Risky Business: Why Most Teenagers Don't Act Like Economists.


   * Why do drug dealers still live with their moms? Ch. 3 in Levitt and Dubner (2005)


Miron, Jeffrey A The Economics of Drug Prohibition and Drug Legalization Social Research. Fall 2001


Week 6-10

II. Guns and Roses
   • Economics of Crime
   • Economics of Gun control
   • Economics of Dating Marriage and Divorce

   * Bowmaker (2006), Part II
New Course Proposal: ECON 3670 Applications of Choice Theory


* Where have all the criminals gone? Ch. 4 in Levitt and Dubner (2005)


Week 11-12

IV: Fun and Games

* Economics of Sport

* Bowmaker (2006), Part IV

* Leeds & Von Allmen (2005) Ch. 8 An introduction to labour markets in professional sports
New Course Proposal: ECON 3670 Applications of Choice Theory

* Gratton and Taylor (2000) Ch. 1 Sports and Economics, Ch.2 The economic importance of sport, Ch. 3 The demand for leisure time and Ch. 4 The demand for sport


Assessment:

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<th>Weight</th>
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<td>In-class participation and in-class quizzes</td>
<td>Not TBA</td>
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<tr>
<td>Two mid-term tests</td>
<td>Weeks 4 and 10</td>
<td>40%</td>
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<tr>
<td>Essay</td>
<td>Due on Week 11</td>
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</tr>
<tr>
<td>Final exam</td>
<td>TBA</td>
<td>30%</td>
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</table>

Texts

Primary text:


Directed readings

Other texts suggested for reference:


*Freakonomics A Rogue Economist Explores the Hidden Side of Everything.* by Steven D. Levitt and Stephen J Dubner, William Morrow & Company, 2005
New Course Proposal: ECON 3670 Applications of Choice Theory

Library Holdings and/or Other Resources

Most of the required directed readings are available through the on-line journal collections or in books available at the library, except for the main textbook, which students will be advised to purchase.

Instructor(s)

Roberto Martínez-Espiñeira
SUMMARY PAGE FOR SENATE

Approval Form

Course Title and Number ECON 3670 Applications of Choice Theory

Abbreviated Course Title NA

Calendar Description

... examines microeconomic choices made outside perfectly competitive markets. Its topics include areas to which choice theory has been applied, for example, the economics of labour, marriage, sport, entertainment, crime, gambling, and the consumption of addictive goods.

PR: Economics 2010

Rationale

This course will provide students with insights into how economic theory can be used to analyse economic, legal and political choices in everyday life contexts where the identification of rational choice is problematic and its study challenging. It complements the department's courses in theoretical microeconomics and quantitative methods, while supplementing their more specialized counterparts. Sub-disciplines of sport, crime, family and labour economics are represented in the course material, but applied choice is its focus. Its topics will give students opportunities to examine the origins and development of empirical work by economists such as Gary Becker and Tibor Scitovsky.

Non-Economics Majors can also benefit from this course, since the topics will be treated at an accessible level (the only prerequisite being Introductory Microeconomics).

Consultations Sought From Comments Received
All departments, Faculty of Arts Yes/No
All Arts departments, Grenfell Campus Yes/No
Faculty of Business Administration Yes/No
Faculty of Science Yes/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: ________________________________
3 December 2012

To: Roberto Martinez-Espiñeira

From: Kathryn Rose, Humanities Research Librarian, Economics

Subject: New Course Proposal, Econ 3670 – Economics Uncut: Applications of Choice Theory

Upon review of the new course proposal for Economics Uncut: Applications of Choice Theory, I have determined that Memorial University Library system does have sufficient resources to support the objectives of this course.

All of the resources on the reading list in the proposal are either held in the QE2 library or are currently on order. Supplementary resources on topics covered in the course are available in the Library to support student research assignments. Additional resources may be purchased as needed under existing budget allocations.
Library Holdings Summary

Table 1: Reading list

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<tr>
<th></th>
<th>Reading List</th>
<th>Textbooks</th>
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<td># of items on order</td>
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<tr>
<td># of items to be ordered or provided by professor</td>
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<td>0</td>
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Table 2: Course topics

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<th>Topic</th>
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<tbody>
<tr>
<td>Choice (Psychology)</td>
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</tr>
<tr>
<td>Substance Abuse – Economic Aspects</td>
<td>13</td>
</tr>
<tr>
<td>Economics Psychological Aspects</td>
<td>133</td>
</tr>
<tr>
<td>Social Policy – Economic Aspects</td>
<td>133</td>
</tr>
<tr>
<td>Drug Traffic – United States</td>
<td>29</td>
</tr>
<tr>
<td>Crime – Economic Aspects</td>
<td>60</td>
</tr>
<tr>
<td>Gun control – Canada</td>
<td>28</td>
</tr>
<tr>
<td>Gun Control – United States</td>
<td>66</td>
</tr>
<tr>
<td>Fertility, human – Economic aspects</td>
<td>15</td>
</tr>
<tr>
<td>Demography – Economic Aspects</td>
<td>38</td>
</tr>
<tr>
<td>Sports – economic Aspects</td>
<td>130</td>
</tr>
<tr>
<td>Rock music – economic aspects</td>
<td>2</td>
</tr>
<tr>
<td>Rock music – United States – History and Criticism</td>
<td>51</td>
</tr>
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</table>

Table 3: Selected Article Indexes and Databases

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<tbody>
<tr>
<td>Business Source Complete</td>
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</tr>
<tr>
<td>EconLit</td>
</tr>
<tr>
<td>International Bibliography of the Social Sciences</td>
</tr>
<tr>
<td>Academic Search Premier</td>
</tr>
</tbody>
</table>
September 9, 2013

TO: All Members, Faculty Council of Science

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

SUBJECT: Response to Senate Committee on Undergraduate Studies re: Award of Transfer Credit During a Period of Academic Withdrawal

In a July 9, 2013 memorandum, the Senate Committee on Undergraduate Studies requested input from academic units on whether a student should be awarded transfer credit for work completed at another institution during a period of a required academic withdrawal from Memorial University.

The responses from the science departments indicate that the Faculty is evenly divided on this issue; four departments support the award of transfer credit, four are against and two support the award under certain conditions. It was suggested that the reason for the academic withdrawal should be the determining factor, i.e., if the withdrawal was required for academic dishonesty, then no transfer credit should be awarded. It was also suggested that clear Calendar language is required to address this issue.

Joan Burry
Assistant Registrar and Secretary: Committee on Undergraduate Studies, Faculty of Science
9 July 2013

TO: Secretaries, Academic Councils
Faculties/Schools/Grenfell Campus/Marine and Fisheries Institute
Student Unions (St. John's Campus, Grenfell Campus, Marine Institute)
Student Health Services, University Counselling Centre, DELTS, Co-operative Education

FROM: Jennifer Porter, Secretary, Senate Committee on Undergraduate Studies

SUBJECT: Transfer Credit Awarded During a Period of Academic Withdrawal

In September 2012, the Senate Committee on Undergraduate Studies forwarded a memorandum seeking input on several questions regarding transfer credit. A copy of this memorandum has been attached for your information. Please be advised that the responses received are currently being considered by the Committee.

Further to this initial request for feedback, I am writing now to bring your attention to the following relevant matter which was noted by the Senate Committee on Undergraduate Studies during its consideration of a student’s appeal for readmission to the University:

A student attended the College of the North Atlantic during the period of his/her academic withdrawal from Memorial and was awarded transfer credit for the work completed at that institution.

The Committee is seeking your input regarding the appropriateness of the practice of awarding transfer credit for work completed at another institution during a period of academic withdrawal. Does this practice circumvent Memorial’s continuation requirements? It should be noted that the example given would virtually never occur for another university. It may, however, possibly occur for a college or institute.

The Committee would appreciate a reply at your earliest possible convenience.

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

Yours truly,

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

JP/lnm

cc: Committees on Undergraduate Studies
Deans/Vice-Presidents/Provost and Vice-President (Academic)
June 10, 2013

TO: Ms. Lynn Goodland, Registrar's Office
FROM: Secretary, Faculty of Science Faculty Council
SUBJECT: Special Topics Course - BIOC 6001, Bioinformatics Analysis Techniques

This is to confirm that special topics course BIOC 6001, Bioinformatics Analysis Techniques, has been approved by the Faculty of Science Faculty Council Graduate Studies Committee.

The Request for Approval of a Graduate Course forms are attached. If you require more information please let me know.

Charles Gosse
Secretary, Faculty of Science Faculty Council

/gbk

cc: Annette Williams, School of Graduate Studies
A. Sinnott, Department of Biochemistry
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.: Biochemistry 6001
Course Title: Bioinformatics Analysis Techniques

I. To be completed for all requests:

A. Course Type: ☐ Lecture course ☐ Laboratory course ☐ Directed readings ☐ Lecture course with laboratory ☐ Undergraduate course\(^1\) ☐ 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

D. Credit hours for this course: \(^3\)

E. Estimated number of contact hours per semester: \(^{3/6}\)

F. Course description (reading list required):
see attached course outline

G. Method of evaluation:

<table>
<thead>
<tr>
<th>Written</th>
<th>Percentage</th>
<th>Oral</th>
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<tbody>
<tr>
<td>Class tests</td>
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<td></td>
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<tr>
<td>Assignments</td>
<td>50%</td>
<td>and present. 30%-oral</td>
</tr>
<tr>
<td>Other (specify): partic. 20% - oral</td>
<td></td>
<td></td>
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<tr>
<td>Final examination:</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

\(^1\) Must specify the additional work at the graduate level

MAY 09 2013
Received
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 2013

Length of session if less than a semester: summer session - 6 weeks

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

[Signature] May 4, 2013

Course Instructor

[Signature] May 6, 2013

Approval of the head of the academic unit

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

[Signature] C. Gossa May 10, 2013

Secretary, Faculty/School/Council

Updated October 2011
Biochemistry 6001 - Special Topics
Bioinformatics Analysis Techniques
April 30, 2013

Description
There is currently a plethora of data freely available to study the whole genome response of a vast array of species, in response to an ever-increasing number of treatments. These datasets now include genomic data and expression data from DNA microarrays as well as genomic and expression data from high-throughput Next Generation Sequencing technologies. The ability to analyze these types of datasets is crucial in advancing the research ongoing in the department, and is becoming an expected technique in the current scientific literature. This course will provide graduate students with the tools to analyze any publically available genome wide dataset and with the knowledge to understand and apply an increasing number of tools in the rapidly advancing field of bioinformatics. Of significant benefit, all of the software used in this course used is freely available.

General Information
Instructor: Sherri L Christian
sherri.christian@mun.ca
864-8550
SN-3013

Course structure: 6-week intensive course, 3h slot per week, offered in the summer session.
Assignments will be given at the end of every class and completion is required for proceeding to the next week’s tasks.
Location and time: TBD in consultation with students

Tools required:
Laptop computer (Mac, Windows or Linux) with internet access
CEL files (your own, downloaded from GEO or provided)
CDF file for custom array
Lab Notebook

Detailed schedule
Week 1: Get to know ‘R’
- Install R
- Simple math with R
- Help functions
- Load data into R
- TinnR
- Bioconductor packages & vignettes

Week 2: Using Bioconductor
- Microarray workflow & packages
  - Oligo
  - Affy
  - Limma
- Load CEL files
Week 3: Generate a gene list
- pre-process data
  - RMA
  - vsn
- Design matrix
- Statistics
- Venn diagrams

Week 4: Annotate and visualize your list
- BioMart
- NetAffx
- Install and run Genesis
- GeneMania

Week 5: Identify the biological functions associated with your gene list
- Gene ontology resources
  - DAVID
  - GoMiner
  - BioMart

Week 6: Presentations and report due

Evaluation
Participation* 20%
Assignments 20%
Report 30%
Presentation* 30%

*Evaluation of participation and presentation will be a combination of peer review and instructor-based evaluation, based on the quality of contributions.

Reading Material and Resources
1. Bioinformatics and computational biology solutions using R and Bioconductor. ed. Robert Gentleman; Wolfgang Huber; Vincent J Carey; Rafael A Irizarry; Sandrine Dudoit. (MUN library eBook or Christian lab)

2. Introductory statistics with R. 2d Ed. Peter Dalgaard (MUN library book or eBook, or Christian lab)

3. A Beginner's Guide to R. Alain F. Zuur, Elena N. Ieno and Erik Meesters (MUN library eBook)


5. R newsgroup: subscribe or search online

6. Bioconductor newsgroup: subscribe or search online
9 May 2013

To: Anne Sinnott, Department of Biochemistry

From: Erin Alcock, Science Research Liaison Librarian

Subject: Special Topics Course Proposal, Biochemistry 6001 – Bioinformatics Analysis Techniques

Upon review of the course proposal for Biochemistry 6001 – Bioinformatics Analysis Techniques I have determined that the Memorial University Library system has more than sufficient resources to support the objectives of this course.

In addition to the texts and resources mentioned in the course proposal the library currently holds numerous book and periodical titles that will be of relevance to students doing research in this area. Any additional resources could be purchased under existing budget allocations for biochemistry, biology, as well as, computer science.
Hello Gail,

this course has been approved with 8 votes. Please, be sure that the approval request submitted for information to the council has all required signatures. Signatures are missing in the document re-submitted to this committee.

-j

On 05/14/2013 11:07 AM, Kenny, Gail wrote:
> Hi JC,
> 
> See attached and Michelle's email below.
> 
> -----Original Message-----
> From: Michelle Miskell [mailto:mmiskell@mun.ca]
> Sent: May-13-13 4:28 PM
> To: Kenny, Gail
> Subject: RE: EASC 6902
> 
> Hi Gail,
> 
> Please find attached the revised version of the proposal for special
topics course, EASC 6902. Duncan has added a little information that
this is the norm for all field courses in EASC. However, I fear that
this may not be enough to satisfy the committee. Is it possible to
emphasize to this committee that long days in the field are absolute
standard in all field courses in Earth Sciences, at both the undergrad
and grad level? As an example, our required EASC 2905 field course runs
8 hours plus 1 hour for lunch in the field during the day and another
3-4 hours in the lab at night.
And this course is 8 days long. It would be a huge issue if the
committee does not approve this field course based on this particular
point.

Thanks,
Michelle
August 8, 2013

TO: Dr. Noreen Golfman, Dean  
School of Graduate Studies

FROM: Secretary, Faculty of Science Faculty Council

SUBJECT: Special Topics Course - EASC 6902, Modern Depositional Environments as the key to effective facies modelling

This is to confirm that special topics course EASC 6902, Modern Depositional Environments as the key to effective facies modelling, has been approved by the Faculty of Science Faculty Council Graduate Studies Committee.

The Request for Approval of a Graduate Course forms are attached. If you require more information please let me know.

[Signature]
Charles Gosse  
Secretary, Faculty of Science Faculty Council

/gbk

cc: L. Goodland, Registrar’s Office  
    M. Miskell, Department of Earth Sciences
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 (Brunau 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.: EASC 6902

Course Title: Modern Depositional Environments as the key to effective facies modelling

I. To be completed for all requests:

A. Course Type: Lecture course [ ] Laboratory course [ ] Directed readings [ ] Lecture course with laboratory [ ] Undergraduate course [ ] Other (please specify) field notebooks/data collection

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: 72

F. Course description (reading list required):

The Department of Earth Sciences is seeking permission to offer a field-based course outside the normal timeframe of the semester. This field course will be offered in an accelerated format over a nine day period from Nov 6-16, 2013 (2 days travel, 9 days in the field). This course is being held in Chester, UK. Detailed information is attached below.

G. Method of evaluation:

<table>
<thead>
<tr>
<th>Written</th>
<th>Percentage</th>
<th>Oral</th>
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</thead>
<tbody>
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<tr>
<td>field notebooks/data collection</td>
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<td>Final examination:</td>
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<td>0</td>
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<tr>
<td>Total</td>
<td>100%</td>
<td></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:

Instructor's Initials

1. duplication of thesis work
   DMC

2. double credit
   DMC

3. work that is a faculty research product
   DMC

4. overlap with existing courses
   DMC

Recommended for offering in the  □ Fall  □ Winter  □ Spring  2013

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

Duncan McIlroy

Course instructor

approval of the head of the academic unit

Date

Feb. 28, 2013

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

Secretary, Faculty/School/Council

Date

Aug. 6/13

Updated October 2011
Course Description

EASC 6902 Modern Depositional Environments as the key to effective facies modelling

**Instructor:** Prof. Duncan McIlroy

**Reading List:**


**Description:** Field based study of the sedimentology, ichnology, ecology and biology of modern depositional systems. The course will compare and contrast depositional settings with differing hydrodynamic and grainsize characteristics.

Comparisons will include quantitative ecology/ichnology, and the type and distribution of physical sedimentary structures/bedforms. The field observations will be placed in the context of palaeoenvironmental/facies analysis in ancient successions.

The course is based on experiential learning to provide a realistic understanding of the shortcomings of classic models in the sedimentology and ichnology of estuaries.

**Evaluation:** Field Data collection 20%; Assessments 80% (write ups for field localities and contextualization of field data).

Field Locality 1) Dee Estuary- Characterization of a mud-rich tide dominated estuary (3 days).

Day 1) trenching of sedimentary bedforms: characterization of sedimentary structures. Mapping of dominant hydrodynamic regimes on the scale of the estuary, head, central, outer estuary and chenier plain.

Day 2) comparative endobenthic ecology and burrow morphologies of
sand rich high energy and mud rich low energy depositional settings

Day 3) collection of endobenthos of different classes of burrow geometries and short-term study of behavior in thin mini-aquaria

Evening write-up will include: 1) comparison of burrow morphologies from the various settings to the classical Seilacherian models; 2) Assessment of the applicability of ichnofacies paradigms to depositional environments in tide dominated estuaries

Field Locality 2) Porthmadoc Estuary- Characterization of a mud-rich wave dominated estuary (3 days)

Day 4) trenching of sedimentary bedforms: characterization of sedimentary structures. Mapping of dominant hydrodynamic regimes on the scale of the estuary, bay head delta, central basin, outer estuary, inlet channels and shoreline.

Day 5) comparative endobenthic ecology and burrow morphologies of sand rich high energy (bay head and tidal inlet), and mud rich low energy depositional settings of the central basin.

Day 6) collection of endobenthos from representative depositional settings and short-term study of behavior in thin mini-aquaria

Field Locality 3) Barmouth Estuary- Characterization of a sandy wave-dominated estuary (3 days)

Day 7) trenching of high energy sedimentary bedforms from the bay head, sandy central estuary and shoreline. Mapping of dominant hydrodynamic regimes on the scale of the estuary, bay head delta, central basin, outer estuary, inlet channels and shoreline. Comparison of the abundance of sedimentary signatures—particularly of tidal depositional processes—and their implications for inferring ancient depositional environments.

Day 8) comparative endobenthic ecology and burrow morphologies of
sand rich high energy (bay head, back barrier sandy central basin and tidal inlet). Comparison with the published models of salinity controlled ichnofacies.

Day 9) collection of endobenthos from representative depositional settings and short-term study of behavior in thin mini-aquaria.

Field days in the department of earth science courses are by necessity long. The students are well aware of the commitment. Each day the students can be expected to spend 8 hrs in the field and time in the evening working up field data.

**Assessments: 20 page** Write ups for each of the three field localities and contextualization of field data collected.

Term paper aimed at extracting pertinent trends in the sedimentology and biology of estuaries and comparison with literature review of ancient incised valley fills through time.

**Timing:** The field school will begin in Chester in the UK on the 6th November and finish on the 16th November in Barmouth (Wales). Students will coordinate their own transport to the UK. While in the UK transportation will be provided.
Hello Gail,

COMP6746 is a special topics course. It goes to the Faculty Council for information, no as a motion.

So far, COMP-6746 has received 7 votes of support, none against.

-j

This electronic communication is governed by the terms and conditions at http://www.mun.ca/cc/policies/electronic_communictions_disclaimer_2012.php
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](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.: COMP-6746

Course Title: Parameterized Complexity Analysis: Foundations and Applications

I. To be completed for all requests:

A. Course Type: [ ] Lecture course [ ] Laboratory course [ ] Directed readings
   [ ] Lecture course with laboratory [ ] Undergraduate course
   [ ] Other (please specify) Student Presentations. Project.

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):
   Please see attached.

G. Method of evaluation:

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<td>Total</td>
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<td>15</td>
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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
   HTW

2. double credit
   HTW

3. work that is a faculty research product
   HTW

4. overlap with existing courses
   HTW

Recommended for offering in the
☑ Fall ☐ Winter ☐ Spring 2013

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

[Signature]
Course instructor

July 4, 2013
Date

[Signature]
Approval of the head of the academic unit

July 3, 2013
Date

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

[Signature]
Secretary, Faculty/School/Council

Sept. 9, 2013
Date

Updated October 2011
Proposal for Special Topics Graduate Course (Lecture):

COMP-6746 PARAMETERIZED COMPLEXITY ANALYSIS: FOUNDATIONS AND APPLICATIONS

Course Objectives / Description:

Course objectives: To give students a working knowledge of the techniques for determining which restrictions on NP-hard problems do and do not allow practical exponential-time optimal-solution algorithms for those problems. These techniques are largely drawn from the theory of parameterized computational complexity created by Mike Fellows and Rod Downey.

Course description: Many problems encountered in Computer Science are computationally intractable in general and hence do not allow efficient, i.e., polynomial-time, algorithms that obtain optimal solutions for all inputs. The typical response is to invoke efficient heuristics or approximation algorithms. However, there may yet be exponential-time optimal-solution algorithms that are practical for restricted classes of inputs encountered in practice. This course will look at techniques developed within the theory of parameterized computational complexity for determining whether such practical algorithms do or do not exist relative to specified restrictions. The emphasis will be on developing a working expertise in such analyses through an introduction to the basics of parameterized complexity theory and in-depth analyses of selected problems.

Prerequisites:

A computational complexity course and an algorithm design techniques course (undergraduate and/or graduate)

Evaluation:

Assignments (3) 30%
In-Class Exams (2) 30%
In-class presentations (3) 15%
  a) Presentation of selected paper
  b) Previous work on project problem
  c) Course project
Course project 25%

Course Outline:

* Review: Classical computational complexity analysis
  (algorithms, worst-case time asymptotic time complexity, polynomial time, polynomial-time many-one reducibility, NP-completeness) 1 1/2 weeks

* Parameterized complexity theory
  (parameterized problems, fixed-parameter tractability, parameterized reducibility, parameterized classes) 2 1/2 weeks

* Illustrations of parameterized complexity analysis
  (In-depth of analyses of selected problems (1-2 weeks each) drawn from (but not limited to) the following list:
  a) Minimum Vertex Cover
  b) Maximum Common Subgraph
  c) Maximum Clique
  d) Longest Common Subsequence
  e) Closest Substring) 6 weeks
f) Analogy Derivation

h) Subsumption Architecture Design

* Student presentations 2 weeks

References / Reading List (Selected):


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.: CHEM 6156
Course Title: Analytical method development and sampling

I. To be completed for all requests:

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

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):
   Development and critical evaluation of analytical methods and sampling protocols for analyses in complex matrices, including those relevant to environmental, medical, food, and forensic sciences. The class will be concurrently offered with an undergraduate course, CHEM 4156. Graduate students will be expected to achieve a greater depth of understanding of the material, with additional requirements that approach double of those of undergraduate students.

G. Method of evaluation:

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Footnote:
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

Course instructor

Approval of the head of the academic unit

August 16, 20□

Date

16 Aug 20□

Date

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

Secretary, Faculty/School/Council

Updated October 2011
SUMMARY PAGE

Approval Form for New Courses or Course Changes

Course Title and Number

CHEM 6156 – Analytical method development and sampling

Abbreviated Course Title

Analytical method development and sampling

Calendar Description

Development and critical evaluation of analytical methods and sampling protocols for analyses in complex matrices, including those relevant to environmental, medical, food, and forensic sciences.

Rationale

A new course in advanced analytical chemistry was recently developed by the Department of Chemistry (CHEM 4156). There is demand for graduate students to also receive formal training in analytical method development in complex matrices. This course will be based upon the classes of CHEM 4156 making this material also available to graduate students.

Consultations Sought From (to be done)

| 1. Marine Institute                      | No |
| 2. Grenfell Campus                       | No |
| 3. Department of Biochemistry            | No |
| 4. Department of Biology                 | No |
| 5. Department of Earth Science           | No |
| 6. Department of Physics and Physical Oceanography | No |
| 7. Department of Ocean Sciences          | No |
| 8. Environmental Science Program         | No |
| 8. QEII library                          | No |

Library Report Received

No

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

Yes/No

Name

[signature]
FOR OFFICE USE ONLY

Approval Granted by Senate Committee on Undergraduate Studies

Chair: 

Secretary: 

Date: 

Proposal for New Course in Advanced Analytical Chemistry

RESOURCE IMPLICATIONS

No additional resources will be needed.

Instructional Costs

No additional costs are anticipated.

Library Holdings and/or Other Resources Required

No additional information resources will be needed.

____________________________________

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

____________________________________

Date:
Proposal for New Course in Advanced Analytical Chemistry

NEW COURSES

CHEM 6156 – Analytical method development and sampling

Resource Implications

None

Executive Summary

We propose to introduce a new graduate level course in chemistry, Analytical method development and sampling. This course will cover advanced topics in analytical chemistry to prepare students for real-world analytical problems. Topics will include: sampling protocols, trace analysis, instrumentation, quality control, etc. It will be taught along with an undergraduate course of the same name, CHEM 4156. The two courses will be offered concurrently, with additional requirements for the graduate students.

Rationale

The Department of Chemistry does not currently have a course that prepares graduate students for analytical challenges of developing methods for analysis in complex matrices. This course will build upon the instrumental analysis skills developed in CHEM 6110 and provide a comprehensive skill set allowing students to plan methods from sample collection through to instrumental analysis.

The course will be concurrently offered with an undergraduate course, CHEM 4156. Graduate students enrolled in CHEM 6156 will be expected to achieve a greater depth of understanding of the material, with additional requirements that approach double those of CHEM 4156 students. These will consist of an oral presentation and assignment of a more difficult set of analytes and matrix for their term paper. The midterm and final exam for students in CHEM 6156 will also include questions designed to probe a deeper and broader knowledge of the subject than will be expected of undergraduate students.

Consultations

We will seek consultations from the Departments of Biochemistry, Biology, Earth Science, Physics and Physical Oceanography, and Ocean Sciences, as well as the Marine Institute, Environmental Science Program, Grenfell Campus, and the QEII Library.

Course Number and Title

CHEM 6156 – Analytical method development and sampling
Proposal for New Course in Advanced Analytical Chemistry

Abbreviated Course Title

Analytical method development and sampling

Calendar Description

Development and critical evaluation of analytical methods and sampling protocols for analyses in complex matrices, including those relevant to environmental, medical, food, and forensic sciences.

PR: CHEM 3110/CHEM 6110 or an equivalent course in analytical separations.
CR: CHEM 4156

Course Outline and Method of Evaluation

Instructor: Cora Young
Lectures: 3 hours per week
Required text: None
Course website: http://www.chem.mun.ca/zcourses/6156.php

Course content:

1. Designing an analytical method:
   i. Analyte properties and its relationship to method selection
   ii. Instrumental methods
   iii. Extraction methods
   iv. Sampling methods
      - Sample collection
      - In situ sampling
   v. Quality assurance/quality control:
      - Calibration
      - Blanks
      - Matrix effects
      - Controls and standards
   vi. Standard operating procedures

2. Analysis in complex matrices, including chemistry and techniques relevant to each matrix:
   i. Aqueous
   ii. Soil/sediment/rock
   iii. Biota (including animal, plant, food, and medical examples)
   iv. Atmosphere

3. Case studies and critiques of state-of-the-science analytical methods in:
   i. Forensic science
   ii. Medical science
   iii. Environmental chemistry

5
Course evaluation:

The final grade will be determined from 4 components:
- Assignments: 25%
- Midterm: 15%
- Term paper: 30%
- Final exam: 30%

Midterms:
There will be one midterm held during class at the regular time.

Assignments:
There will be 2 assignments. Both will involve critique of the current analytical literature. The second assignment will include an oral presentation.

Term paper:
There will be a term paper that will require students to design their own method for a given set of analytes in a complex matrix. The students will examine the literature and determine the appropriate sampling method, extraction, analysis, and quality control for their respective analytes and matrix.

<table>
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<th>CHEM 4156</th>
<th>CHEM 6156</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>25%; 2 assignments</td>
<td>25%; 2 assignments, 1 oral presentation</td>
</tr>
<tr>
<td>Midterm</td>
<td>15%</td>
<td>15%*</td>
</tr>
<tr>
<td>Term paper</td>
<td>30%</td>
<td>30%*</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
<td>30%*</td>
</tr>
</tbody>
</table>

*Additional difficulty and length will be assigned for the midterm, term paper, and final exam at the graduate level.

Additional Material

None

Texts

There is no required text. Students may wish to consult the following supplementary texts:


**Library Holdings and/or Other Resources**

The above-mentioned texts are already held either as electronic resources or in hard copy at the Queen Elizabeth II library.

**Instructor(s)**

Professor Cora Young will be the primary instructor. In our department, Professors Bottaro and Helleur also have the expertise to teach this course.
Kenny, Gail

From: JC Loredo-Osti <jcloredoosti@mun.ca>
Sent: September-10-13 1:59 PM
To: Kenny, Gail
Subject: Re: COMP 6716, Regular Course
Attachments: Re: COMP 6716, Regular Course; Re: Fwd: COMP 6716, Regular Course; Re: Fwd: COMP 6716, Regular Course; RE: Fwd: COMP 6716, Regular Course

Gail,

five votes in favour, none against. Four messages attached and my vote.
I would like to table the motion for the approval of this course by the Faculty Council.

Regards,
-j

On 09/09/2013 03:19 PM, Kenny, Gail wrote:
> Hi JC,

> Has this course been approved yet? Thanks.

> Gail

> -----Original Message-----
> From: JC Loredo-Osti [mailto:jcloredoosti@mun.ca]
> Sent: July-08-13 9:14 AM
> To: Craig Purchase; Sharene Bungay; Fleming, Ian; Graham Bodwell; Paul
> Sylvester; JC Loredo-Osti; Todd Andrews; Kenny, Gail; Sukhinder Kaur
> Cheema; Len Zedel; Brent Snook; Bell, Trevor; Amrutha Paladugu
> Subject: Fwd: COMP 6716, Regular Course

> Hello All,

> attached is the request for approval of a special topics course whose
> title is "Parameterized complexity analysis: foundations and
> applications". Please let me know your opinion/decision at your
> earliest convenience.

> -j

>------ Original Message ---------
> Subject: COMP 6716, Regular Course
> Date: Fri, 5 Jul 2013 14:20:58 -0230
> From: Kenny, Gail <gkenny@mun.ca>
> To: JC Loredo-Osti <jcloredoosti@mun.ca>

> Hi JC,
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.: COMP-6716

Course Title: Security and Privacy

I.   To be completed for all requests:

A. Course Type:  ✔ Lecture course   ☐ Lecture course with laboratory
                  ☐ Laboratory course   ☐ Undergraduate course 1
                  ☐ 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.)? 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):
   Please see attached.

G. Method of evaluation:

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<td>1. duplication of thesis work ____________________________________________</td>
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<tr>
<td>2. double credit _________________________________________________________</td>
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<tr>
<td>3. work that is a faculty research product ________________________________</td>
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<tr>
<td>4. overlap with existing courses __________________________________________</td>
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Recommended for offering in the  
☑ Fall or ☑ Winter  □ Spring  2013

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

Saeed Samet  
Course instructor  
April 15, 2013  
Date  

Approval of the head of the academic unit  
July 3, 2013  
Date

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

Secretary, Faculty/School/Council  
Date

Updated October 2011

Course description (cont.)

... It will also review security and privacy issues in some applications in health, business and government. Some other topics that will be discussed in this course are differential privacy, and main approaches used to preserve data security and privacy. One or more guest speakers will also be invited from both academia and industry to share their experience and knowledge with students. Students will contribute to the course by doing research on related topics, and present their findings by preparing written reports and oral in-class presentations.

Reference Books:

COMP-6916
Security and Privacy

Course Objectives:
Privacy and security concerns are ubiquitous in modern computing environments. This course will review various
cryptography techniques to preserve data security and privacy, examine system threats and vulnerabilities from the
perspectives of programs, operating systems and programming languages, discuss database security, internet
security, privacy and security breaches, as well as privacy-preserving data mining and machine learning methods. It
will also review security and privacy issues in some applications in health, business and government. Students will
contribute to the course by doing research on related topics, and present their findings by preparing written reports
and oral in-class presentations.

Prerequisites:
Knowledge in operating systems, programming languages, and data processing

Evaluation:
Assignments 30%
Examination 30%
Project
Written report 25%
Presentation 15%

Course Outline:
1. Review of Cryptography
2. Recent security and privacy issues
3. Security and privacy in programming languages
4. Security and privacy on internet
5. Privacy-preserving data mining and machine learning
6. Different approaches of privacy-preserving methods
7. Database Security and inference controls
8. Data security and privacy in various applications
9. Differential privacy

Some topics for student projects are:
- Wireless security
- Modern cryptography
- Internet security
- Health privacy
- Intrusion detection
- Fraud detection
- Legal, ethical, and societal issues related to security and privacy

Reference Book:

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