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, January 20, 2021, at 1:00 p.m. by Webex.

AGENDA

1. Regrets
2. Adoption of the Minutes of December 2, 2020
3. Business Arising from the Minutes
4. Correspondence: None
5. Presentation by Dr. Florian Villaumé, Memorial Centre for Entrepreneurship re 2021 Mel Woodward Cup
6. Reports of Standing Committees:
   A. Undergraduate Studies Committee: No business.
   B. Graduate Studies Committee:
      a. Department of Earth Sciences, Request for Approval of a Graduate Course, EASC 6110, Machine Learning and Data Analysis in the Geosciences, Paper 6.B.a (pages 6-12);
      b. Department of Psychology, Special Topics course, PSYC 6121, Special Topics in Health Psychology II, approved by the committee and presented to Faculty Council for information only, Paper 6.B.b (pages 13-23).
   
   C. Library Committee:

7. Reports of Delegates from Other Councils
8. Discussion on equity, diversity and inclusion
10. Question Period
11. Adjournment

Travis Fridgen, Ph.D.
Acting Dean of Science
A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, December 2, 2020, at 1:00 p.m. using Webex.

**FSC 2803** Present

**Biochemistry**
M. Berry, R. Bertolo, V. Booth, J. Brunton, S. Harding, S. Mayengbam, M. Mulligan, J. Park

**Biology**
J. Burke, S. Dufour

**Chemistry**
R. Collins, C. McCarthy, S. Pansare

**Computer Science**
Y. Chen, C. Hyde, V. Prado da Fonseca

**Earth Sciences**
A. Langille, G. Layne, A. Malcolm, M. Miskell, P. Morrill, S. Strowbridge

**Mathematics & Statistics**

**Ocean Sciences**
C. Parrish

**Physics & Physical Oceanography**
C. Deacon, E. Demirov, M. Morrow, J. Pittman, I. Saika-Voivod

**Psychology**
M. Courage, D. Hallett, T. Reardon, A. Swift-Gallant, C. Thorpe, C. Walsh

**Dean of Science Office**
J. Blundell, S. Browne, S. Bungay, K. Foss, T. Fridgen, A. Highsted, G. Jackson, G. Kenny, T. Mackenzie, V. MacNab
Graduate Students
A. Alfosool

FSC 2804 Regrets:
X. Duan, J. Lagowski, D. McIlroy, K. Poduska

FSC 2805 Adoption of Minutes
Moved: Minutes of the meeting of November 18, 2020, meeting be adopted (Sullivan/Blundell). Carried.

FSC 2806 Business Arising: None

FSC 2807 Correspondence: None

FSC 2808 Reports of Standing Committees:
A. Undergraduate Studies Committee:
Presented by Shannon Sullivan, Chair, Undergraduate Studies Committee
a. Department of Computer Science, add link to CRW Calendar section (Sullivan/Bungay) Carried.
b. Department of Computer Science, amend pre-requisites for COMP 3201 (Sullivan/Bungay) Carried.
c. Department of Computer Science, amend pre-requisites for COMP 4304 (Sullivan/Bungay) Carried.
d. Department of Computer Science, amend Dissertation wording for joint honours programs in Geography, Pure Mathematics and Statistics
f. Department of Computer Science, amend pre-requisites for COMP 3550 (Sullivan/Bungay) Carried.
g. Department of Computer Science, amend pre-requisites for COMP 3602 (Sullivan/Bungay) Carried.
h. Department of Computer Science, amend Statistics pre-requisites for COMP 3200, 3202, 3401, 4550 and 4766 (Sullivan/Bungay) Carried.
i. Department of Computer Science, amend Computer Science programs required Statistics course to reflect updated Computer Science course pre-requisite (Sullivan/Bungay) Carried.
j. Department of Computer Science, change reference to Computer Science undergraduate handbook location (Sullivan/Bungay) Carried.
k. Department of Computer Science, add reference to Computer Science online major application form (Sullivan/Bungay) Carried.
l. Department of Computer Science, delete Supplementary Examinations (Sullivan/Bungay) Carried.
m. Department of Economics, amend program Joint Major in Economics (Co-operative) and Statistics (Sullivan/Mackenzie) Carried.
n. Department of Psychology, amend pre-requisites/co-requisites for major courses PSYC 2930, 3050, 3100, 3251, 3350, 3450, 3510, 3511, 3650, 3900, 4750, 3810, 3820, 3830, 4661, 4770, 4910, 4980, 499A/B (Sullivan/Courage) Carried.


p. Department of Psychology, amend programs, Admission to Majors Programs, Admission to Honours Programs, Requirements for Major in Psychology, Requirements for a Major in Behavioural Neuroscience (BSc only), Requirements for Honours in Behavioural Neuroscience (BSc only) (Sullivan/Courage) Carried.

B. Graduate Studies Committee: No business

C. Nominating Committee: No business.

D. Library Committee: No business.

FSC 2809 Report of the Dean
Presented by Travis Fridgen, Acting Dean

1. Remote Teaching Discussion
Sharene and Keith Power will be hosting a discussion of remote teaching tomorrow from 12-1 (Thursday, December 3). Keith will talk about the results of the student survey and then hopefully get into a discussion about what worked with respect to remote instruction.

2. Delay to the start of the Winter Semester
The University has decided to delay the beginning of classes for the winter semester from January 6th to January 11th, which will give faculty and staff much-needed time to prepare their courses. Co-op placements will not be affected by this. Details came out on Newsline. One item of note is that the classes missed for Good Friday, will be rescheduled to Saturday March 27, but will not be mandatory for students, nor can evaluations happen on that day. University reopens on January 5.

3. Snow Days
The default for snow days this winter will be that even if campus closes, instruction will go ahead. However, if a faculty member needs to cancel instruction/tests etc. then this should be communicated to students via Brightspace or whatever method faculty have chosen to communicate with their students. Because our winter semester is remote and we have students all over Canada (and the world) who may experience inclement weather, power outages, etc. at different times than St. John's, please be reminded to be accommodating and flexible with due dates. Also, for synchronous forms of instruction, the best practice is to record these sessions and have them posted on Brightspace, which can be done automatically if you are using WebEx. An announcement on this from the University will be forthcoming.

4. Back to Campus
The back to campus initiative for all non-academic staff has been paused and will not resume before the new year. Departments should continue to plan for this initiative which will not begin before January.

**FSC 2810  Question Period**

The link for the discussion on December 3 with S. Bungay and K. Power regarding remote teaching will be re-sent to departments today.

The final exam schedule has been published and most exams have a two hour time limit. Instructors can be flexible with the window they allow for the completion of their exam(s). Some instructors are even opening the exam for 24 hours.

**FSC 2811  Adjournment**

The meeting adjourned at 1:48 p.m.
EASC 6110 Machine Learning and Data Analysis in the Geosciences

To Kenny, Gail

You replied to this message on 1/14/2021 9:54 AM.
We removed extra line breaks from this message.

Message: EASC 6110 Machine Learning and Data Analysis in the Geosciences_P_vf.pdf (168 KB)

Gail-

The above course has been approved by Graduate Studies Committee.

Attached is the final version of the proposal considered by the Committee - for posting with the Faculty Council agenda.

Graham
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) Review the How to create and insert a digital signature webpage for step by step instructions; (5) Fill in the required data and save the file; (6) Send the completed form by email to: sgs@mun.ca.

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

Course No.: EASC 6110

Course Title: Machine Learning and Data Analysis in the Geosciences

I. To be completed for all requests:

A. Course Type:  ✔ Lecture course  ☐ Laboratory course  ☐ Directed readings  ☐ Lecture course with laboratory  ☐ Undergraduate course

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. Will additional library resources be required (if yes, please contact munul@mun.ca for a resource consultation)?  ✔ Yes  ☐ No

E. Credit hours for this course:  3

F. Course description (reading list required):

See attached.

G. Method of evaluation:

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<tr>
<th>Written</th>
<th>Oral</th>
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<tr>
<td>Class tests</td>
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<tr>
<td>Assignments</td>
<td>50</td>
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<tr>
<td>Other (specify): Project</td>
<td>50</td>
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Total 100

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

Alison Malcolm  Digitally signed by Alison Malcolm  Date 2020 11 30 08 29:58 -03'30'

Course instructor

______________________________
Approval of the head of the academic unit

______________________________
Date

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

______________________________
Secretary, Faculty/School/Council

______________________________
Date

Updated September 2020
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 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

Steve Piercey
Digitally signed by Steve Piercey
Date: 2020.11.30 09:54:16 -03'30"

Course instructor

Greg Dempsey
Approval of the head of the academic unit

Date

Nov. 30, 2020

Date

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

Secretary, Faculty/School/Council

Date

Updated September 2020
EASC 6110: Machine Learning and Data Analysis in the Geosciences

Learning outcomes

To gain a basic understanding of the various artificial intelligence methods used in the geo-sciences.
To gain an appreciation of how these methods can be useful in the geo-sciences; to experience what they can (and cannot) do.

Topics covered

Refresher on concepts (e.g., univariate & multivariate statistics, correlation, regression, discriminant analysis) and algorithms (e.g., principal component analysis) in "classic" statistics.
Modern algorithms for discriminant classification and pattern recognition (non-linear; e.g., supervised, neural nets, random forest, naive Bayes).
Modern algorithms for dimensionality reduction and clustering (non-linear; e.g., unsupervised, k-means, self-organizing maps).
All of above illustrated using examples from the geo-sciences (e.g., exploration vectors or footprint from geochemical data; data mining of legacy, heterogeneous geological survey data repositories; predictive geological mapping from geophysical data; classification and prediction of rock units from well-logs and seismic data; machine learning algorithms as an alternative to deterministic inversion in geophysics).

Instruction method

Reverse classroom approach of assigning readings, or topics to be researched, with the participants coming to class prepared to present and discuss the assigned readings or topics.

Resources

Various software packages, languages and environments, e.g., Orange (https://orange.biolab.si), Python and Python Jupyter notebooks.

Prerequisites

No specific courses are required as prerequisites for this course. However, a certain level of mathematical and computational comfort is necessary; interested students are encouraged to contact the instructor(s) to discuss their background if they are unsure.

Exercises

The methods discussed in class will be applied to various data-sets. These data-sets will include geochemical and geophysical data-sets acquired previously by the instructors during the course of their respective research, from organized publicly available data-sets (Geological Survey of NL, Geological Survey of Canada), and from mining publicly available data-bases (Geological Survey of NL). Roughly one exercise per week is anticipated. A written report for each exercise is expected.
Project

Each student will undertake a project, which will comprise a research project on a subject of their choosing relevant to the subject area of this course, and which will be selected and defined in consultation with the course instructor(s). A written report and an oral presentation are expected.

Assessment

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<th>Exercises</th>
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<td>Project</td>
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Reading list

Relevant papers from the literature, such as:


Kuhn, S., M. J. Cracknell, and A. M. Reading, 2018, Lithologic mapping using Random Forests applied to geophysical and remote-sensing data: A demonstration study from the Eastern Goldfields of Australia, GEOPHYSICS, 83, B183–B193.

Kuhn, S., M. J. Cracknell, and A. M. Reading, 2019, Lithological mapping in the Central African Copper Belt using Random Forests and clustering: Strategies for optimised results, Ore geology reviews, 112, 103015.


Thu 1/14/2021 10:04 AM
Graham Layne <gdlayne@mun.ca>
RE: PSYC 6121 Special Topics in Health Psychology II - Approved

To         Kenny, Gail

We removed extra line breaks from this message.

Message:    PSYC 6121 Special Topics_R-OPT+6121Syllabus_P_vF.pdf (248 KB)

Gail-

The above course has been approved by Graduate Studies Committee.

Attached is the final version of the proposal considered by the Committee - for posting with the Faculty Council agenda.

Graham
This course provides a second option for students in the Health and Wellness area to take a course related to their content area (in addition to PSYC 6120), as these students are required to take two such courses.

1. Research study design 40%
2. Manuscript write up 60%

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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:

<table>
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<th>Instructor’s initials</th>
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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 2021

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

Kellie Hadden
Course instructor

Mary L Courtes
Approval of the head of the academic unit

December 8, 2020
Date

09-12-20
Date

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

Secretary, Faculty/School/Council

Date

Updated September 2020
Creation of Special Topics Course
PSYC 6121 – Special Topics in Health Psychology II

Rationale:

For our M.Sc. program, students are required to do two content courses in their area on top of their other requirements. For the Health and Wellness area, we have been using PSYC 6120 - Special Topics in Health Psychology as one of these courses, but we would like to create another course so that students can take a second special topics course on a different topic. We have that problem with a student right now who is taking PSYC 6120 right now and wants to take another special topics course in the Winter but cannot because it is listed as the same course even though the content is quite different. For this reason, we are proposing that we create a new course and call it PSYC 6121 - Special Topics in Health Psychology II. This would help the current student and will also make it less likely that future students have this problem.
Books not included in the Reference List


References


The jamovi project. (2020). *jamovi*. In (Version 1.2) [Statistical Software]. https://www.jamovi.org


PSYCH 6121 – Special Topics in Health
Psychology II

Instructor: Dr. Kellie Hadden
Office: SN7030
Phone: 709-743-2816
Email: khadden@mun.ca

COURSE OBJECTIVES:

In this course, the student will learn how to develop a research project using a data from another study. The main objectives of this course will be to learn how to: (1) identify a research problem in the at-risk youth literature associated with variable in an existing dataset, (2) conduct the study using the dataset and write a manuscript to be submitted to a peer reviewed journal, (3) the study should make an original contribution to the research literature.

The student will meet regularly with the Dr. Hadden to help guide their project and manuscript development.

REQUIRED READING:

- The required readings will be a thorough review of the literature in the area of at-risk youth, which will be conducted by the student.

EVALUATION:

1. Research study design  %40
2. Manuscript write up  %60