



Dean of Science Office

St. John's, NL Canada A1B 3X7
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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 15, 2017, at 1 p.m. in C-2045.

AGENDA

1. **Regrets**
2. **Adoption of the Minutes of October 18, 2017**
3. **Business Arising from the Minutes: None**
4. **Correspondence: None**
5. **Reports of Standing Committees:**
 - A. **Undergraduate Studies Committee:**
 - a. Department of Ocean Sciences, paper 5.A.a (30 pages)
 - i. Proposal for new course: OCSC 3600 - Marine Microbiology
 - ii. Proposal for new range of Special Topics Courses in Ocean Sciences
 - B. **Graduate Studies Committee:**
 - a. Department of Earth Sciences, special topics course, EASC 6953, Principles of Mineral Exploration Geochemistry, already approved by the committee and presented to Faculty Council for information only, paper 5.B.a (3 pages)
 - C. **Nominating Committee: None**
 - D. **Library Committee: None**
6. **Report of Teaching Consultant**
7. **Reports of Delegates from Other Councils**
8. **Report of the Dean**
9. **Question Period**
10. **Adjournment**

Mary L. Courage, Ph.D.
Interim Dean of Science



Faculty of Science

Office of the Dean
St. John's, NL, Canada A1B 3X7
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FACULTY OF SCIENCE FACULTY COUNCIL OF SCIENCE MINUTES OF MEETING OF OCTOBER 18, 2017

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, October 18th, at 1:00 p.m. in room C-2045.

FSC 2534

Present

Biochemistry

Berry, M. Booth, V. Mulligan, M.

Biology

Jones, I. Leroux, S. Staveley, B.

Chemistry

Bottaro, C. Flinn, C. Fridgen, T. Grover, H.

Computer Science

Bungay, S. Wareham, T.

Earth Sciences

Welford, K.

Mathematics & Statistics

Pike, D. Radford, C. Sullivan, S.

Physics & Physical Oceanography

de Young, B. Lagowski, J. Saika-Voivod, I.

Psychology

Neath, I. Thorpe, C.

Dean of Science Office

Foss, K. Foster, A. Jackson, G. Mackenzie, T. Zedel, L.

CITL

Todd, A.

Registrar's Office

Murray, M.

Graduate Students

Adekunle, A.

Undergraduate Students

Fitzgerald, M.

Hillier, L.

FSC 2535 Regrets
Clift, T. Mantyka, S. Caines, S.

FSC 2536 Adoption of Minutes
Moved: Minutes of September 20, 2017, meeting be adopted (Berry/Sullivan).
Carried.

FSC 2537 Business Arising: None

FSC 2538 Correspondence: None

FSC 2539 Reports of Standing Committees:

A. Undergraduate Studies Committee:

Report presented by Shannon Sullivan, Chair, Undergraduate Studies Committee

a) i) **Moved:** Department of Physics and Physical Oceanography, calendar change, changes to the Minor program for students enrolled in the Computer Engineering and Electrical Engineering programs. (Sullivan/ Lagowski). **Carried.**

ii) **Moved:** Department of Physics and Physical Oceanography, calendar change, changes to the Major and Honours regulations for the Environmental Physics program. (Sullivan/Lagowski). **Carried.**

b) i) **Moved:** Department of Biochemistry, calendar changes, changes to the Biochemistry Major and the Biochemistry and Chemistry Joint Honours programs. (Sullivan/Berry). **Carried.**

ii) **Moved:** Department of Biochemistry, calendar changes, changes to Biochemistry courses and secondary changes to other sections of the calendar. (Sullivan/Booth). **Carried.**

c) i) **Moved:** Department of Chemistry, calendar changes, CHEM 3211 pre-requisites. (Sullivan/Flinn). **Carried.**

B. Graduate Studies Committee: None

C. Nominating Committee: None

D. Library Committee: None

FSC 2540 Report of Teaching Consultant

Amy Todd informed Council that the brown bag sessions have started again. This year the sessions will aim to showcase techniques that individual departments are using in teaching and learning. The upcoming session is showcasing strategies used by the Department of Chemistry in lab instruction, and she encouraged faculty and lab instructors to attend the session.

Also, Brightspace (formerly D2L) has received a facelift. CITL is offering continuous support sessions. In addition, any faculty members having difficulty with the new interface can contact Amy Todd for assistance in getting the support they need.

FSC 2541 Reports of Delegates from Other Councils: None

FSC 2542 Conflict of Interest Presentation – Sean Cadigan, Associate Vice-President (Academic) Programs

The Conflict of Interest Policy applies to all who are employed by the University. There is a lot of emphasis on the policy since as employees we should all act in the best interest of the University. The full presentation is attached.

FSC 2543 Report of the Dean: None

FSC 2544 Question Period

FSC 2545 Adjournment

The meeting adjourned at 1:45 p.m.

Conflict of Interest

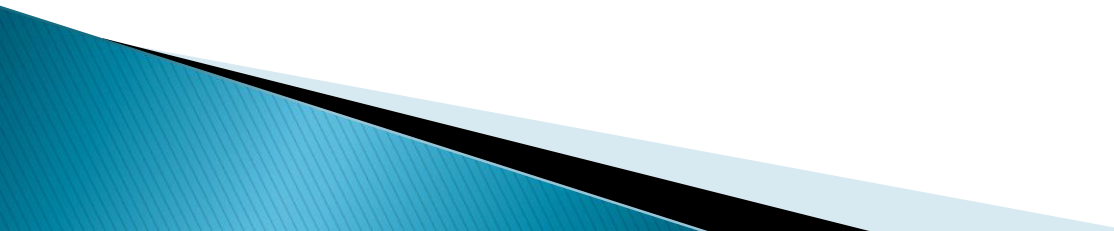
Presentation to Faculty of Science
Sean Cadigan
18 October 2017

COI Policy : ethics, accountability, transparency

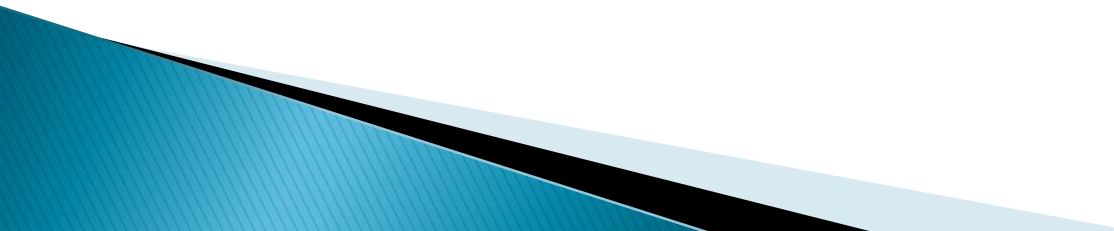
Memorial's commitment : "It is the ethical responsibility for everyone who acts on behalf of the University to ensure that decisions and actions that affect the University are taken in the best interests of the University and are not influenced by personal interests."

(<http://www.mun.ca/policy/site/policy.php?id=277>)

Conflict of Interest

- ▶ COI exists where there is a potential divergence between a faculty/staff member's personal interests and their obligation to the University.
 - ▶ May be real, perceived or potential.
- 

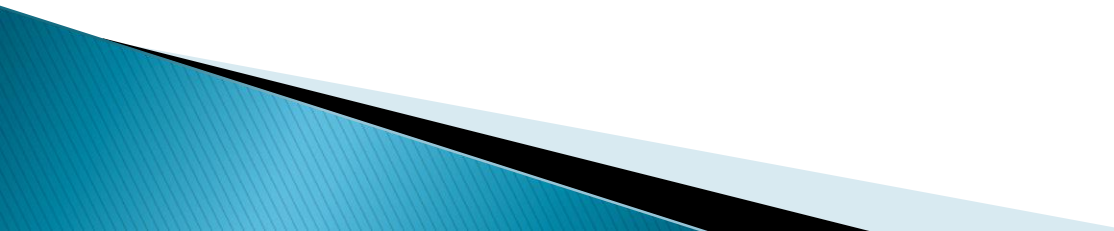
Types of Conflict

- ▶ **Real** – Private interest exists and is known to the faculty/staff member and it has a connection with their University duties that is sufficient to influence the exercise of those duties
 - ▶ **Perceived** – Exists where there is reasonable apprehension of bias
 - ▶ **Potential** – May develop into a real or perceived conflict. Exists as soon as faculty/staff member can foresee they have a private interest that may influence their duties or responsibilities.
- 

COI Obligations

- ▶ Each Member has a duty to assess his/her own interests, involvement and activities and to report any real, perceived, or potential conflicts of interest.
- ▶ A Member shall not participate in an activity or decision that involves a real, perceived or potential conflict of interest unless such activity or decision has been disclosed to, and approved by, the Conflict of Interest Committee (and if such approval has been given, any terms or conditions made by the Committee are fulfilled).

Examples of COI

- ▶ *Interest in a Research, Business, Contract or Transaction*
 - ▶ *Involvement in Personnel Decisions*
 - ▶ Influencing Purchase of Equipment/Materials or Services
 - ▶ Acceptance of Gifts, Benefits or Financial Favours
 - ▶ Use of Information
 - ▶ Use of Students, University Personnel, Resources or Assets
 - ▶ Participating in the tenure review or reviewing of grants involving a person where the Member is Family, Personal, Professional Associate or Academic Supervisor.
- 

COI and the Collective Agreement

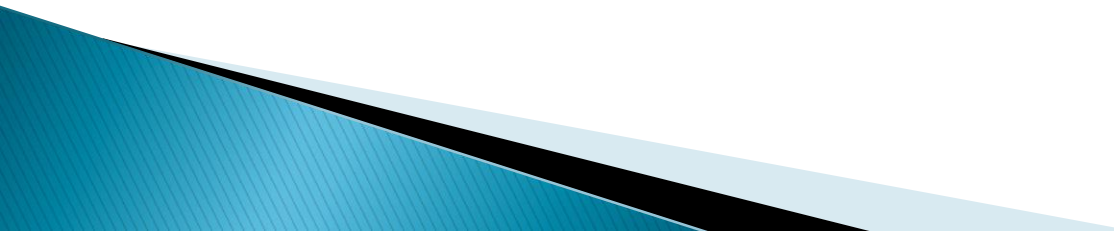
- ▶ Conflict of Interest Policy Collective agreement now more closely aligned with COI policy: 7.12, 7.13, 8.03, 8.04
- ▶ No faculty member can participate in peer review processes (search, P & T, etc.) if a conflict of interest exists
- ▶ Faculty member shall inform the Head asap so that the conflict may be allowed and managed, or disallowed
- ▶ ***May need to be referred*** to University COI Committee for determination
- ▶ If conflict can not be managed, faculty member must either resign from committee or remove themselves from the situation

Student Supervision & the CA

- ▶ 7.13 Where a Faculty Member who is a member of the Search Committee has within the past six (6) years been an academic supervisor of a candidate under consideration, that Faculty Member shall recuse him or herself from serving on the Committee for that search.
- ▶ 8.04 Where a Faculty Member who is a member of the Promotion and Tenure Committee has within the past six (6) years been an academic supervisor of a candidate under consideration, that Faculty Member shall recuse him or herself from serving on the Committee for that candidate.

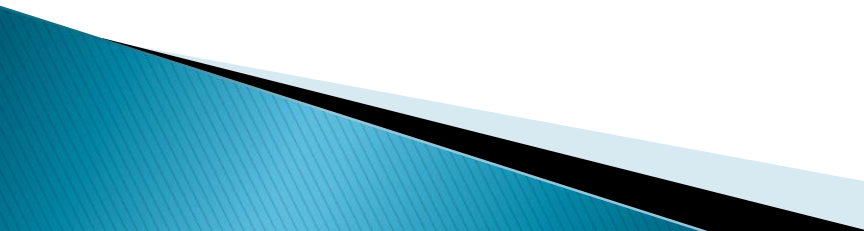
When is a Colleague a Professional Associate?

A person with whom the Member has or has had *within the previous five years*, a close or substantial professional relationship and includes, but is not limited to, a relationship of *mentor, co-author, research collaborator or research investigator or employment supervisor of the Member.*

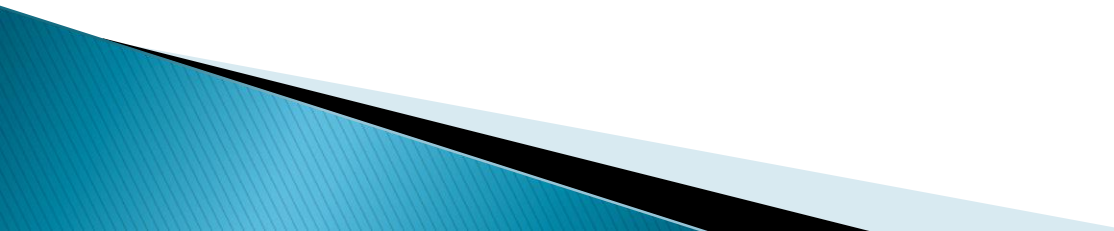


Examples of COI

In all cases: if Member is Family, Personal, Professional Associate of student and/or student's family:

- ▶ Academic Program Decisions Affecting Students
 - ▶ Whole or Partial Evaluation of Student's Academic Work
 - ▶ Involvement in Compliance Decisions Affecting Students
 - ▶ Participation by a Member in decisions to determine compliance with University policies or codes and/or related sanctions
- 

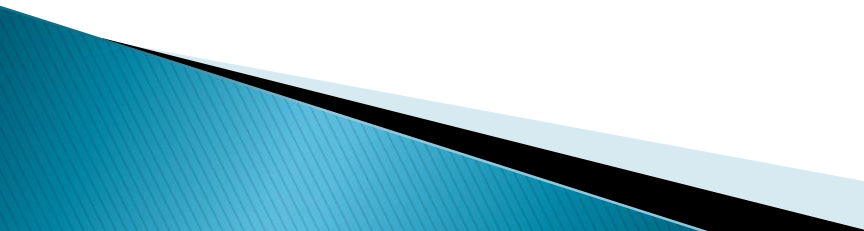
Examples of COI

- ▶ Advancing of Outside Interests for Personal Gain
 - ▶ Undertaking of Outside Activity
 - ▶ Political Activity
 - ▶ Conflict of Commitment
 - ▶ *Other – these are examples, not an exhaustive or exclusive list.*
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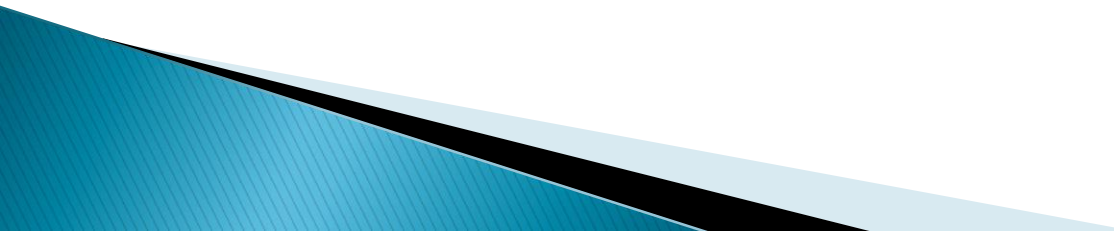
It's Not Only Up to You

- ▶ Members obliged to pursue others' COI by:
 - Discussion with the person(s) in COI
 - Referring the matter to such person(s) head
 - Or by reporting “the matter under the provisions of the *Protected Disclosure Policy*”
(<http://www.mun.ca/policy/site/policy.php?id=108>)

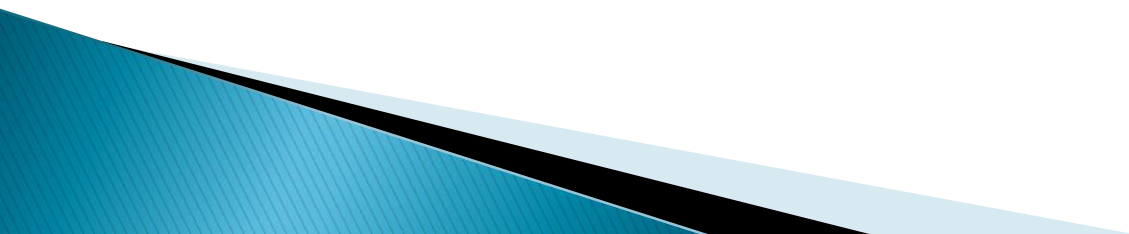
Related Policies

- ▶ Protected Disclosure
 - ▶ Telecommunications
 - ▶ Purchasing
 - ▶ Off-Campus Use of Equipment
 - ▶ Ethics in Research Involving Human Participants
 - ▶ Integrity in Scholarly Research
 - ▶ Solicitation of Gifts
 - ▶ Memorial University of Newfoundland Procedures Governing The Appointment, Review, Promotion And Tenure of Academic Administrators
- 

Admin. Heads in Conflict

- ▶ Usual Remedy: Head of Record
 - ▶ Principle: Your conflict extends to those you recommend for appointment.
 - ▶ Effect: Head of Record is your Admin. Head or their delegate
- 

Questions





Office of the Registrar

St. John's, NL Canada A1C 5S7
Tel: 709 864 8260 Fax: 709 864 2337
www.mun.ca

November 8, 2017

TO: All Members of Faculty Council, Faculty of Science

FROM: Maria Murray, Secretary, Committee on Undergraduate Studies
Faculty of Science

SUBJECT: Proposals for Calendar Changes

At a meeting held on November 6, 2017, the Undergraduate Studies Committee of the Faculty of Science agreed that the following items should be forwarded to Faculty Council for approval:

1. Department of Ocean Sciences

- (a.) Proposal for new course: Ocean Sciences 3600 - Marine Microbiology
- (b.) Proposal for new range of Special Topics Courses in Ocean Sciences


Maria Murray

NEW COURSE PROPOSAL OCSC 3600 Marine Microbiology

Executive Summary

This is a proposal for a new course in Marine Microbiology, which will focus on topics relevant to ocean processes, species interactions and aquaculture, and thus become an integral part of the programs in Ocean Sciences. We also take this opportunity to remove OCSC 3620 (Aquatic Microbial Ecology), cross-listed as Biology 3620, which has not been taught for nearly 15 years.

Resource Implications: Instructional Costs

Since this new course will be taught by existing faculty members at the Department of Ocean Sciences, no additional instructional costs are required.

Consultations

See Appendix.

Library Holdings and/or Other Resources Required

There are no added library costs associated with the new courses.

Signature of Unit Head (if appropriate): _____

Date: _____

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

Date: _____

SAMPLE COURSE OUTLINE AND METHOD OF EVALUATION

Proposed Course Outline

I. Introduction to Marine Microbiology

Week 1: Microbial diversity in the environment: classical, molecular and OMICS (e.g. microbial culture, radioactive methods of quantification, 16S sequencing, metagenomics, and metatranscriptomics)

Week 2: Microbiological water quality and anthropogenic pollution (e.g. coliforms quantification, fecal contamination in marine organisms)

Exam 1 (25%)

II. Microbes and their role in nutrient cycles

Week 3: Microbial metabolism and nutrient cycles (phototrophic, chemotropic and other forms of metabolism associated to nutrient cycles in the ocean)

Week 4: Composition of sediments (e.g. redox potentials, deep subsurface microbiology)

Week 5: Hydrothermal vents and hydrocarbon microbiology in the deep sea

Week 6: Bacteriophages and their role in nutrient cycles (lytic cycle, lysogenic cycle, effect on primary production)

Exam 2 (25%)

III. Microbial interactions: Evolution from pathogenic to symbiotic interaction.

Week 7: Molecular host-pathogen interaction (e.g. introduction to pathogens, Kock postulates, bacterial pathogens of marine organisms)

Week 8: Mechanisms of bacterial pathogenesis in marine organisms (e.g. infection of corals, shellfish and fish)

Exam 3 (25%)

IV. Marine biotechnology applied to aquaculture

Week 9: Fish vaccination and virulence evolution

Week 10: Antibacterial agents and bacterial resistance

Week 11: Phage therapy (phage application to control and prevent bacterial infection in aquaculture, bacteriophage isolation, propagation and encapsulation)

Comprehensive Final Exam (25%)

Format: Two lectures of 1.5 h per week.

Evaluation

Exam 1 (25%)

Exam 2 (25%)

Exam 3 (25%)

Final Comprehensive Exam (25%)

Suggested Textbook

Marine Microbiology: Ecology & Applications, 2nd Edition (2011), Garland Science, authored by Colin Munn.

Instructor: Dr. Javier Santander, Department of Ocean Sciences.

SUMMARY PAGE FOR SENATE Approval Form

Course Number and Title

OCSC 3600 Marine Microbiology

Abbreviated Course Titles

Marine Microbiology

Calendar Changes under 11.9 Ocean Sciences (replacing 3620 with 3600)

3600 Marine Microbiology provides an overview of microbial activity in the ocean, both in natural and applied settings. The focus is on interactions between microorganisms and other biota, ranging from deep-sea vent invertebrates to commercially cultured fish species. Prospective topics include effluent discharge, water quality, bacterial metabolism and nutrient cycles, bacteria-virus and bacteria-host interactions (including symbiosis and pathogenesis), and marine microbial biotechnology.

PR: Biology 2250 or Biochemistry 2100

~~**3620 Aquatic Microbial Ecology** (same as Biology 3620) is a study of the nature, distribution and activities of microorganisms in the freshwater and marine environments. Field and laboratory work illustrate some of the investigative techniques used in this field of study.~~

~~CR: Biology 3620 and the former Biology 3603~~

~~LH: 3~~

~~PR: Science 1807; Biology 2600 and 3050, Statistics 2550 or equivalent~~

Clean Calendar under 11.9 Ocean Sciences (after changes)

3600 Marine Microbiology provides an overview of microbial activity in the ocean, both in natural and applied settings. The focus is on interactions between microorganisms and other biota, ranging from deep-sea vent invertebrates to commercially cultured fish species. Prospective topics include effluent discharge, water quality, bacterial metabolism and nutrient cycles, bacteria-virus and bacteria-host interactions (including symbiosis and pathogenesis), and marine microbial biotechnology.

PR: Biology 2250 or Biochemistry 2100

Secondary Calendar Changes under 10.9 Ocean Sciences (replacing 3620 with 3600)

10.9.1 Minor in Oceanography

Students who take a Minor In Oceanography will complete 24 credit hours as follows:

1. Ocean Sciences 1000, 2100, 2200, 2300;
2. Ocean Sciences 2000 or Biology 3710;
3. Earth Sciences 1000; and
4. the remaining 6 credit hours should be selected from Biology 3014, 3709, 3711, 3712, 3714, 3715, 4122, 4601, 4710, 4750, 4810, Chemistry 2100, 3110, 4151, 4156, Earth Sciences 4302, Geography 3120, 3510, 4190, 4300, Environmental Science 3072, 3210, 3211, 4230, Ocean Sciences 2001, 3000, 3002, ~~3600~~3620, 4000, 4122, 4601, and Physics and Physical Oceanography 3300, 3340, 4300, 4340.

10.9.2 Minor in Sustainable Aquaculture and Fisheries Ecology

Students who take a minor in Sustainable Aquaculture and Fisheries Ecology will complete 24 credit hours as follows:

1. Ocean Sciences 1000, 2001, 3000, 3002;
2. Biology 4750 or Geography 4300;

3. one of Ocean Sciences 2000 (or Biology 3710), ~~3600~~~~3620~~, 3640, 4000, 4100, 4122, 4601;

10.9.3.2 Program Regulations for the Bachelor of Science with Major in Ocean Sciences

Students must successfully complete:

1. the 30 specified credit hours required under **Admission Requirements for the Major in Ocean Sciences or the Major in Ocean Sciences (Environmental Systems)**;
2. Statistics 2550 (or equivalent);
3. Physics 1021 or Physics 1051;
4. a minimum of 30 credit hours in Ocean Sciences, including:
 - a. Ocean Sciences 2000 (or Biology 3710), 2001, 2100 and 2500. Ocean Sciences 1000, completed under **Admission Requirements for the Major in Ocean Sciences or the Major in Ocean Sciences (Environmental Systems)**, will count as 3 of the required 30 credit hours in Ocean Sciences;
 - b. at least one of Ocean Sciences 2200 or 2300; and
 - c. at least 9 credit hours at the 3000 and/or 4000 level. Choices include but are not limited to Ocean Sciences 3000, 3002, ~~3600~~~~3620~~, 3640, 4000, 4100, 4122, 4601;

Clean Secondary Calendar Changes under 10.9 Ocean Sciences (after changes)

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Students who take a Minor In Oceanography will complete 24 credit hours as follows:

1. Ocean Sciences 1000, 2100, 2200, 2300;
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 - b. at least one of Ocean Sciences 2200 or 2300; and
 - c. at least 9 credit hours at the 3000 and/or 4000 level. Choices include but are not limited to Ocean Sciences 3000, 3002, 3600, 3640, 4000, 4100, 4122, 4601;

Secondary Calendar Changes under 11.2 Biology (deleting 3620)

~~**3620 Aquatic Microbial Ecology** (same as Ocean Sciences 3620) is a study of the nature, distribution and activities of microorganisms in the freshwater and marine environments. Field and laboratory work illustrate some of the investigative techniques used in this area of study.~~

~~CR: Ocean Sciences 3620 and the former BIOL 3603~~

~~LH: 3~~

~~PR: Science 1807; BIOL 2600 and 3050; Statistics 2550 or equivalent~~

Rationale

The Minors in Oceanography and Sustainable Aquaculture and Fisheries Ecology, and the Majors in Ocean Sciences and Marine Biology, would greatly benefit from a course in marine microbiology. While there is currently a course in aquatic microbial ecology listed in the calendar (OCSC 3620, same as Biology 3620), it has not been taught since 2003 and both departments have agreed that it should be deleted. Instead, the Department of Ocean Sciences wants to develop the proposed course in Marine Microbiology, with a different focus and no lab segment. This course will be broader in scope and focus on topics that are directly relevant to the ocean, including nutrient cycles, species interactions, and aquaculture. Due to the importance of microorganisms in marine processes and aquaculture research, the proposed course will be a recommended higher-level elective in the minors and majors in Ocean Sciences.

Since this course focuses on marine microbiology, it has minimal (less than 20%) overlap with Biology 3050 (Microbiology). There is currently no other course at Memorial University that focuses on marine microbiology, covering ocean processes and microbial biotechnology applied to aquaculture.

Consultations Sought From

Comments Received

Marine Institute	Yes
Grenfell campus	No
Department of Biochemistry	Yes
Department of Biology	Yes
Department of Chemistry	Yes
Department of Computer Sciences	No
Department of Earth Sciences	Yes
Department of Economics	No
Department of Geography	Yes
Department of Mathematics and Statistics	No
Department of Physics and Physical Oceanography	Yes
Department of Psychology	No
Faculty of Arts	No
Faculty of Education	No
Faculty of Engineering and Applied Science	Yes

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: _____

APPENDIX I - CONSULTATIONS

Initial request sent 24 April 2017

From: Fletcher, Garth

Sent: April-24-17 2:41 PM

To: Arts; Biochemistry Head; Business; Chuck Hurich; 'cs-chair@mun.ca'; Locke, Wade; Hicks, Sue; Engineering; Fridgen, Travis; 'Ian Neath'; Jody-Lynn Burke; Lagowski, Jolanta; Marino, Paul; 'mathconsult@mun.ca'; Meghan Gamsby; 'miugconsultations@mi.mun.ca'; Catto, Norm; 'vpoffice@grenfell.mun.ca'

Cc: amercier@mun.ca

Subject: Request for consultation

Colleagues. Could you please have your department review the attached **new courses in Ocean Sciences** that we are proposing to develop.

Best regards

Garth

Garth L. Fletcher

Head and Professor Emeritus

Department of Ocean Sciences

Ocean Sciences Centre

Memorial University

St John's NL

Canada, A1C 5S7

TEL: 709-864-3276

FAX 709-864-3220

Email fletcher@mun.ca

FEEDBACK RECEIVED

Geography

From: Catto, Norm

Sent: April-24-17 2:44 PM

To: Fletcher, Garth <fletcher@mun.ca>

Subject: RE: Request for consultation

No problems from Geography

Norm Catto

Head, Department of Geography

Memorial University

St. John's NL A1B 3X9

Canada

1-709-864-7463

Fax 1-709-864-3119

Physics and Physical Oceanography

From: Martin Plumer [<mailto:plumer@mun.ca>]

Sent: May-03-17 8:55 AM

To: Fletcher, Garth <fletcher@mun.ca>

Cc: Lagowski, Jolanta <jolantal@mun.ca>

Subject: FW: FW: Request for consultation

Hi Garth,

Physics and Physical Oceanography has no issues with these proposals.

Best,
Martin

Engineering

From: Engineering Consult [<mailto:enrconsult@mun.ca>]

Sent: May-04-17 8:35 AM

To: Fletcher, Garth <fletcher@mun.ca>

Cc: Dennis Peters <dpeters@mun.ca>; Williams, Jennifer <jwilliams04@mun.ca>

Subject: Re: Request for consultation

Dear Dr. Fletcher,

Thank you for the opportunity to comment on the proposed minor changes to various Calendar entries for Ocean Sciences:

- Major in Ocean Sciences;
- Major in Ocean Sciences (Environmental Systems);
- Minor in Oceanography;
- Minor in Sustainable Aquaculture and Fisheries Ecology (SAFE);
- Honours in Ocean Sciences;
- new block of special topics courses in Ocean Sciences;
- deletion of OCSC/BIOL 3620; and
- creation of new courses OCSC 3600 and 499A/B.**

After consultation with the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, we find that these changes will have no impact on our programs.

I wish you well in the progress of these changes.

Yours sincerely,

Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science Memorial University of Newfoundland
St. John's NL A1B 3X5

Earth Sciences

Subject: New course proposals

Date: Wed, 17 May 2017 11:32:51 -0230

From: Penny L Morrill <pmorrill@mun.ca>

To: fletcher@mun.ca, Annie Mercier <amercier@mun.ca>

May 17, 2017

Dear Garth and Annie,

The Department of Earth Sciences has reviewed your proposed courses for:

- 1) a special topics course,
- 2) an undergraduate 499A/B course, and
- 3) **a 3rd year Marine Microbiology course**

We have no issues with the proposed courses.

Cheers,
Penny Morrill
Chair of the undergraduate matters committee
Department of Earth Sciences

--

Penny Morrill, Ph.D.
Associate Professor
Department of Earth Sciences
Memorial University of Newfoundland
St. John's, NL A1B 3X5
Canada
phone: (709) 864-6729
fax: (709) 864-2589

Chemistry

Subject: Re: Request for consultation
Date: Wed, 23 Aug 2017 16:08:19 +0000
From: Fletcher, Garth <fletcher@mun.ca>
To: Fridgen, Travis <tfridgen@mun.ca>
CC: amercier@mun.ca <amercier@mun.ca>

Thanks Travis, some of our faculty teach very little
Therefore an under utilized resource.
Regards
Garth

From: Travis Fridgen
Sent: Wednesday, August 23, 2017 1:25 PM
To: Fletcher, Garth
Cc: amercier@mun.ca
Subject: Re: Request for consultation

Hi Garth,
All looks fine to me. The only thing is 3600 says there are no resource implications. But as I have been told, a new course has to have resource implications as the person who will be teaching it will not be able to teach something else.
Take care,
T

Travis D. Fridgen BSc, BEd, PhD
Professor & Head

Department of Chemistry
Memorial University
St. John's, NL, A1B 3X7
<http://www.chem.mun.ca/zfac/tdf.php>

Biology

From: Fletcher, Garth
Sent: August-18-17 3:57 PM
To: Biochemistry Head <biohead@mun.ca>; Jody-Lynn Burke <jrotchford@mun.ca>; Marino, Paul <pmarino@mun.ca>
Cc: amercier@mun.ca
Subject: Request for Consultation

Hi Mark, Paul and Jody could you please have your department review the attached proposals and send your responses to me in time for the next FoSCUGS meeting in September.

These requests were sent out earlier and I cannot find any responses. Perhaps I missed them.

Best regards

Garth

Garth L. Fletcher
Head and Professor Emeritus
Department of Ocean Sciences
Ocean Sciences Centre
Memorial University
St John's NL
Canada, A1C 5S7

<OCSC-New_Program_Proposal-Honours_22June2017.doc><OCSC_New_SpecialTopics-courses-21April2017.pdf><OCSC499_New_Course_Proposal-21April2017.pdf><CalendarChanges_OCSCMajor_21April2017.pdf><CalendarChanges_OCSCMinors_21April2017.pdf><OCSC_New_course_Marine_Microbiology-14Sep2017.doc>

On 24/08/2017 12:27 PM, Jody-Lynn Burke wrote:

Hi Garth,

BIOL concerns regarding the OCSC Honours program, as well as the Joint Marine Biology Major and proposed Joint Honours in Marine Biology, were discussed at length with Annie during our June 15, 2017 meeting with Amy Todd.

In summary:

- The admissions requirements for the Major, not the Honours, are listed in the proposal. There is a reference to "To qualify for the Honours in Ocean Sciences, students must complete a minimum of 45 credit hours in Ocean Sciences." Is there a core subset of OCSC courses students must complete or are all 45 credit hours (which appear to include the 6 credit hours associated with the proposed OCSC 499A/B) required before admission is considered?

- As I relayed to Annie at our June 15, 2017 meeting, BIOL 2060 is consistently at or over capacity. We can't reserve seats for any non-BIOL major at this time.
- During the June 15 meeting I asked Annie how much lab experience students in the Honours program will receive. Are additional lab courses planned?

Special Topics Courses:

- Given the preliminary nature of the proposed blocks, have pre-requisites been identified? Specially, do you anticipate any BIOL courses as pre-requisites?

BIOL 499A/B Proposal:

- "This dissertation is mandatory for students pursuing the Honours in Ocean Sciences and is one of two choices offered to students pursuing the Joint Honours in Marine Biology." There is no Joint Honours in Marine Biology. Please omit.

OCSC 3600 Marine Microbiology Proposal:

- BIOL 2060 or 2250 are highlighted as pre-requisites. As indicated above and during my June 15 meeting with Annie, BIOL 2060 is consistently at or over capacity. We can't reserve seats for any non-BIOL major at this time.

If you have any questions, please let me know.

Jody Burke, BSc.(Hons), M.Ed, PGC(QM) – Academic Program Officer
Department of Biology, Memorial University
Office: (709) 864 8021
E-mail: jodyb@mun.ca

On 28/08/2017 11:47 AM, Annie Mercier wrote:

Hi Jody:

We thank you for your comments and feedback. Please find our replies below.

1- With regards to the OCSC Honours, I believe we have addressed all of the early concerns you voiced at the June 15 meeting in our updated proposal (circulated on June 22). In addition:

1a- Admission requirements: "To qualify for the Honours" was reworded into "To earn an Honours" in order to dispel any ambiguity that the 45 credit hours in Ocean Sciences are the overall requirements not the admission requirements. With respect to admission, the proposal states: "Honours students would normally follow one of the Major programs offered by the Department of Ocean Sciences before applying to the Honours, and must meet its admission requirements as follows: To be considered for admission to the Major in Ocean Sciences prior to admission to the Honours program, students must normally have completed..." This essentially indicates that students must typically register to the Major (after satisfying its admission requirements) before transitioning to the Honours.

1b- In direct response to your initial concern about available seats, we have made BIOL 2060 a choice among several courses (under 5a in the updated proposal).

1c- As I indicated during the meeting, we do not have specific requirements for lab vs non-lab courses, like Biology does. This is in part due to the broader science foundation that our programs require. Overall, this foundation includes 6 courses (in Biology, Chemistry, Physics) with associated lab segments. In addition, the core hands-on component of our Majors/Honours is bundled into OCSC 2500, which is a required intensive practical course providing ship-based and lab-based training. Finally, both OCSC 3000

and OCSC 4122 have lab segments. And, of course, we offer a dive course to qualifying students (OCSC 4000). In sum, based on the requirements, Honours students will typically take a minimum of 8 to 10 courses (24-30 credit hours) that either have labs or are entirely hands-on, in addition to the 6 credit hours associated with the research project (OCSC 499A/B).

2- For the Special Topics courses: No prerequisites have been identified yet, which I believe is in line with similar Special Topics Course descriptions found in other units, including Biology. We will be sure to consult with Biology regarding BIOL prerequisites (if any) when these courses are fleshed out.

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4- OCSC 3600 Marine Microbiology: We are aware that you cannot reserve seats for our students in BIOL 2060 or BIOL 2250. This is why we list them as alternative options. We are hoping that, should this create a problem, we might explore ways to expand accessibility to these courses, since they are important foundation courses in science. We do not see any way that we could develop/offer anything similar without substantial and unnecessary overlap.

Please let us know if you have any further questions or concerns.

All the best,
Annie

On 11/09/2017 2:32 PM, Jody-Lynn Burke wrote:

Hi Annie,

Thanks for clarifying.

I'm concerned that there are no separate admission requirements for Honours, especially since all other departments within the Faculty have separate Major/Honors admission requirements.

With regards to my second point, you listed BIOL 2250 or 2060 as required pre-requisites in your proposal for OCSC 3600. As was the case with your initial Honours in Ocean Sciences proposal (April 24), you didn't consult with Biology before assigning our courses as pre-requisites for OCSC 3600 and sending it out to the wider university committee for consultation.

As I've indicated in previous emails, we can't reserve seats for OSC students in BIOL 2060.

If you have any questions, please let me know.

Jody Burke, BSc.(Hons), M.Ed, PGC(QM) – Academic Program Officer
Department of Biology, Memorial University
Office: (709) 864 8021
E-mail: jodyb@mun.ca

On 14/09/2017 10:23 AM, Annie Mercier wrote:

Hi Jody:

Many thanks for your comments.

We will give thought to separate admission requirements for the Honours; and in consultation with the instructor we propose to adjust the prerequisites of OCSC 3600 to "Biology 2250 or Biochemistry 2100" pending Biochemistry's approval.

All the best,
Annie

Marine Institute

Subject:RE: Request for consultation
Date: Wed, 6 Sep 2017 11:50:08 +0000
From: MIUG Consultations <MIUGconsultations@mi.mun.ca>
To: Fletcher, Garth <fletcher@mun.ca>
CC: amercier@mun.ca <amercier@mun.ca>

Garth,

Our group has reviewed the proposed new courses:

- OCSC 4910-4920 Special Topics in Ocean Biogeochemistry
- OCSC 4920-4929 Special Topics in Marine Ecology
- OCSC 4930-4939 Special Topics in Experimental Marine Biology
- OCSC 4940-4949 Special Topics in Applied Ocean Sciences
- OCSC 499A/499B Honours Dissertation
- **OCSC 3600 Marine Microbiology**

As well as the proposed calendar changes to both the OCSC Major and Minor programs. The Marine Institute has no issues with any of these proposals and we are happy to support these as presented.

All the best,
Derek

Derek Howse
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0586
FAX: 709-778-0394
Derek.Howse@mi.mun.ca

Biochemistry

Subject:Request for Consultation
Date: Fri, 18 Aug 2017 18:26:45 +0000
From: Fletcher, Garth <fletcher@mun.ca>
To: Biochemistry Head <biohead@mun.ca>, Jody-Lynn Burke <jrotchford@mun.ca>, Marino, Paul <pmarino@mun.ca>
CC: amercier@mun.ca <amercier@mun.ca>

Hi Mark, Paul and Jody could you please have your department review the attached proposals and send your responses to me in time for the next FoSCUGS meeting in September.

These requests were sent out earlier and I cannot find any responses. Perhaps I missed them.

Best regards

Garth

Garth L. Fletcher
Head and Professor Emeritus
Department of Ocean Sciences
Ocean Sciences Centre
Memorial University
St John's NL
Canada, A1C 5S7

TEL: 709-864-3276

FAX 709-864-3220

Email fletcher@mun.ca

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Hi Valerie:

I was wondering if you had had the chance to review our proposals, which were initially circulated in April -- with an updated proposal for the Honours sent out in August (see below).

The purpose of this email is actually to draw your attention to the fact that the proposal for the new course in Marine Microbiology (OCSC 3600) has recently been modified to include an option for a Biochemistry course as PR (since Biology was concerned that they could not reserve seats in BIOL 2060 for our students). This is in line with what we did for the Honours. Please let me know if you have any concerns with this updated version.

In sum, the only two documents that have changed since our initial message in April are the ones in Word format (updated OCSC 3600; updated OCSC Honours).

I look forward to your feedback.

All the best,

Annie

On 17/09/2017 9:53 AM, Valerie Booth wrote:

Hi Annie,

Sorry for the slow reply.

Biochemistry is fine with your proposal.

The choice of Biology 2250 or Biochem 2100 makes sense since these are in the process of being cross listed. We don't anticipate any trouble fitting OCSC students into 2100. Just note that the way we do our online registration and reserves, you may wind up with some students who aren't able to register online, but may need to contact the biochem department to get signed in "by hand".

Best,

Valerie

Valerie Booth
Professor
Deputy Head (undergraduate) Department of Biochemistry and
Department of Physics and Physical Oceanography
Memorial University of Newfoundland
St. John's, NL, A1B 3X9, Canada
phone 709 864-4523 fax: 709 864-2422
homepage: <http://www.faculty.mun.ca/vbooth/>

On 18/09/2017 08:31 AM, Annie Mercier wrote:

Hi Valerie:
Many thanks for your feedback, and for the heads up regarding BIOC 2100.
All the best,
Annie



Collection Development Division
Queen Elizabeth II Library
St. John's, NL A1B 3Y1

TO: Garth Fletcher, Head and Professor Emeritus,
Department of Ocean Sciences

FROM: Meghan Gamsby, Head of Information Services,
Temporary Collections Librarian

RE: New Course Proposal – OCSC 3600

DATE: May 17, 2017

I have reviewed the new course proposal for OCSC 3600 Marine Microbiology. A collection evaluation was completed for the new course.

We have access to the major databases and journals in this area. For any materials not available at Memorial Libraries our Document Delivery Services is there to help obtain such resources in a timely fashion. Our Library Instruction program is available to help instructors teach their students about information literacy, including literature searches and scholarly communication practices.

NEW COURSE PROPOSAL

Special Topics Courses in Ocean Sciences

Executive Summary

This is a proposal for new special topics courses in Ocean Sciences.

Resource Implications: Instructional Costs

These new courses are elective (not mandatory) courses for our programs and will be taught opportunistically, requiring no new resource implications.

Consultations

See Appendix I.

Library Holdings and/or Other Resources Required

There are no added library costs associated with the new courses.

Signature of Unit Head (if appropriate): _____

Date: _____

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

Date: _____

SUMMARY PAGE FOR SENATE

Approval Form

Course Numbers and Titles

OCSC 4910-4919 Special Topics in Ocean Biogeochemistry
OCSC 4920-4929 Special Topics in Marine Ecology
OCSC 4930-4939 Special Topics in Experimental Marine Biology
OCSC 4940-4949 Special Topics in Applied Ocean Sciences

Abbreviated Course Titles

Spec Top Ocean Biogeochem
Spec Top Mar Ecology
Spec Top Exp Mar Biology
Spec Top Applied Ocean Sci

New Calendar Entries under 11.9 Ocean Sciences

4910-4919 Special Topics in Ocean Biogeochemistry are advanced courses for senior undergraduate students that cover one or several subjects related to environmental changes and the flow of major elements in marine systems.

PR: to be determined at the time of offer

4920-4929 Special Topics in Marine Ecology are advanced courses for senior undergraduate students that cover one or several subjects related to evolutionary and ecological principles at the organismal and ecosystem levels in marine systems.

PR: to be determined at the time of offer

4930-4939 Special Topics in Experimental Marine Biology are advanced courses for senior undergraduate students that cover one or several subjects related to research in marine biology, such as field and laboratory experimental design, data analysis and modeling.

PR: to be determined at the time of offer

4940-4949 Special Topics in Applied Ocean Sciences are advanced courses for senior undergraduate students that cover one or several subjects of special interest in applied fields of ocean sciences, such as fisheries, conservation, aquaculture, and biotechnology.

PR: to be determined at the time of offer

Secondary Calendar Changes

There are no secondary calendar changes.

Rationale

Special topics courses are commonly used in other units to design new senior-level courses or to deliver a one-off course of interest. In light of intense curriculum development occurring in our unit as a result of newly launched undergraduate programs and recent faculty hires, we would like to develop blocks of special topics courses. These will allow: (i) faculty members to try out a new course before making it official and/or (ii) courses to be taught once in a while, every three or four or more years, in order to offer a greater diversity of electives. To enable at least two courses of this type to be offered in a year (if required), we propose to create four blocks of special topics courses (with different numbers) that will roughly align with the major streams in our curriculum: Environmental Systems, Ecology & Evolution, Marine Biology (including Physiology and Molecular Biology), and Applied Ocean Sciences.

Consultations Sought From

Comments Received

Marine Institute	Yes
Grenfell campus	No
Department of Biochemistry	Yes
Department of Biology	Yes
Department of Chemistry	Yes
Department of Computer Sciences	No
Department of Earth Sciences	Yes
Department of Economics	No
Department of Geography	Yes
Department of Mathematics and Statistics	No
Department of Physics and Physical Oceanography	Yes
Department of Psychology	No
Faculty of Arts	No
Faculty of Education	No
Faculty of Engineering and Applied Science	Yes

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: _____

APPENDIX I - CONSULTATIONS

Initial request sent 24 April 2017

From: Fletcher, Garth

Sent: April-24-17 2:41 PM

To: Arts; Biochemistry Head; Business; Chuck Hurich; 'cs-chair@mun.ca'; Locke, Wade; Hicks, Sue; Engineering; Fridgen, Travis; 'Ian Neath'; Jody-Lynn Burke; Lagowski, Jolanta; Marino, Paul; 'mathconsult@mun.ca'; Meghan Gamsby; 'miugconsultations@mi.mun.ca'; Catto, Norm; 'vpoffice@grenfell.mun.ca'

Cc: amercier@mun.ca

Subject: Request for consultation

Colleagues. Could you please have your department review the attached **new courses in Ocean Sciences** that we are proposing to develop.

Best regards

Garth

Garth L. Fletcher

Head and Professor Emeritus

Department of Ocean Sciences

Ocean Sciences Centre

Memorial University

St John's NL

Canada, A1C 5S7

TEL: 709-864-3276

FAX 709-864-3220

Email fletcher@mun.ca

FEEDBACK RECEIVED

Geography

From: Catto, Norm

Sent: April-24-17 2:44 PM

To: Fletcher, Garth <fletcher@mun.ca>

Subject: RE: Request for consultation

No problems from Geography

Norm Catto

Head, Department of Geography

Memorial University

St. John's NL A1B 3X9

Canada

1-709-864-7463

Fax 1-709-864-3119

Physics and Physical Oceanography

From: Martin Plumer [<mailto:plumer@mun.ca>]

Sent: May-03-17 8:55 AM

To: Fletcher, Garth <fletcher@mun.ca>

Cc: Lagowski, Jolanta <jolantal@mun.ca>

Subject: FW: FW: Request for consultation

Hi Garth,

Physics and Physical Oceanography has no issues with these proposals.

Best,
Martin

Engineering

From: Engineering Consult [<mailto:enrconsult@mun.ca>]
Sent: May-04-17 8:35 AM
To: Fletcher, Garth <fletcher@mun.ca>
Cc: Dennis Peters <dpeters@mun.ca>; Williams, Jennifer <jwilliams04@mun.ca>
Subject: Re: Request for consultation

Dear Dr. Fletcher,

Thank you for the opportunity to comment on the proposed minor changes to various Calendar entries for Ocean Sciences:

- Major in Ocean Sciences;
- Major in Ocean Sciences (Environmental Systems);
- Minor in Oceanography;
- Minor in Sustainable Aquaculture and Fisheries Ecology (SAFE);
- Honours in Ocean Sciences;
- new block of special topics courses in Ocean Sciences;**
- deletion of OCSC/BIOL 3620; and
- creation of new courses OCSC 3600 and 499A/B.

After consultation with the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, we find that these changes will have no impact on our programs.

I wish you well in the progress of these changes.

Yours sincerely,

Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science Memorial University of Newfoundland
St. John's NL A1B 3X5

Earth Sciences

Subject: New course proposals
Date: Wed, 17 May 2017 11:32:51 -0230
From: Penny L Morrill <pmorrill@mun.ca>
To: fletcher@mun.ca, Annie Mercier <amercier@mun.ca>

May 17, 2017

Dear Garth and Annie,

The Department of Earth Sciences has reviewed your proposed courses for:

- 1) **a special topics course,**
- 2) an undergraduate 499A/B course, and
- 3) a 3rd year Marine Microbiology course

We have no issues with the proposed courses.

Cheers,
Penny Morrill
Chair of the undergraduate matters committee
Department of Earth Sciences

--

Penny Morrill, Ph.D.
Associate Professor
Department of Earth Sciences
Memorial University of Newfoundland
St. John's, NL A1B 3X5
Canada
phone: (709) 864-6729
fax: (709) 864-2589

Chemistry

Subject: Re: Request for consultation
Date: Wed, 23 Aug 2017 16:08:19 +0000
From: Fletcher, Garth <fletcher@mun.ca>
To: Fridgen, Travis <tfridgen@mun.ca>
CC: amercier@mun.ca <amercier@mun.ca>

Thanks Travis, some of our faculty teach very little
Therefore an under utilized resource.
Regards
Garth

From: Travis Fridgen
Sent: Wednesday, August 23, 2017 1:25 PM
To: Fletcher, Garth
Cc: amercier@mun.ca
Subject: Re: Request for consultation

Hi Garth,
All looks fine to me. The only thing is 3600 says there are no resource implications. But as I have been told, a new course has to have resource implications as the person who will be teaching it will not be able to teach something else.
Take care,
T

Travis D. Fridgen BSc, BEd, PhD
Professor & Head

Department of Chemistry
Memorial University
St. John's, NL, A1B 3X7
<http://www.chem.mun.ca/zfac/tdf.php>

Biology

From: Fletcher, Garth
Sent: August-18-17 3:57 PM
To: Biochemistry Head <biohead@mun.ca>; Jody-Lynn Burke <jrotchford@mun.ca>; Marino, Paul <pmarino@mun.ca>
Cc: amercier@mun.ca
Subject: Request for Consultation

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Jody Burke, BSc.(Hons), M.Ed, PGC(QM) – Academic Program Officer
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Derek Howse
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
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FAX: 709-778-0394
Derek.Howse@mi.mun.ca

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Sorry for the slow reply.

Biochemistry is fine with your proposal.

The choice of Biology 2250 or Biochem 2100 makes sense since these are in the process of being cross listed. We don't anticipate any trouble fitting OCSC students into 2100. Just note that the way we do our online registration and reserves, you may wind up with some students who aren't able to register online, but may need to contact the biochem department to get signed in "by hand".

Best,

Valerie

Valerie Booth
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On 18/09/2017 08:31 AM, Annie Mercier wrote:

Hi Valerie:
Many thanks for your feedback, and for the heads up regarding BIOC 2100.
All the best,
Annie



Request for Approval of a Graduate Course

School of Graduate Studies

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.: EASC 6953

Course Title: Principles of Mineral Exploration Geochemistry

I. To be completed for all requests:

A. Course Type: Lecture course Lecture course with laboratory
 Laboratory course Undergraduate course¹
 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: 40

F. Course description (reading list required):

The course will examine the principles and application of geochemistry to mineral exploration. It will cover sampling techniques and analysis in exploration geochemistry; approaches to the statistical analysis, graphical presentation, and interpretation of survey results; and the design of effective geochemical surveys. Aside from lectures, the course will be based on seminars and papers to be delivered by each student.

G. Method of evaluation:	Percentage	
	Written	Oral
Class tests		
Assignments	50	50
Other (specify):		
Final examination:		
Total	50	50

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

DW

2. double credit

DW

3. work that is a faculty research product

DW

4. overlap with existing courses

DW

Recommended for offering in the

Fall

Winter

Spring

20 18

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

Derek W. H. Derek W. H.

Course instructor

26 OCT 17

Date

J. H. H.

Approval of the head of the academic unit

10/25/17

Date

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

Secretary, Faculty/School/Council

Date

EASC 6953 Course outline

The course will examine the application of geochemistry to mineral exploration. It will cover the principles of geochemistry; sampling and analysis in exploration geochemistry; approaches to the statistical analysis, graphical presentation, and interpretation of survey results; and the design of effective geochemical surveys. Emphasis will be placed on case studies relevant to exploration.

Topics to be covered are: 1) review of geochemistry, 2) survey design, 3) statistical treatment of geochemical data, 4) primary vs. secondary geochemical dispersions, 5) till surveys, 6) use of indicator minerals, 7) soil geochemical surveys and case studies, 8) lake bottom sediment geochemical surveys and case studies, 9) stream sediment geochemical surveys and case studies, 10) biogeochemical surveys and case studies, 11) lithogeochemistry, 12) regolith geochemical surveys and case studies. 13) hydrocarbon geochemical surveys and case studies, 14) quality assurance/quality control in geochemical surveys, and 15) new techniques.