



Dean of Science Office

St. John's, NL Canada A1B 3X7
Tel: 709 864 8153 Fax: 709 864 3316
deansci@mun.ca www.mun.ca/science

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, April 19, 2017, at 1 p.m. in C-2045.

AGENDA

1. **Regrets**
2. **Adoption of the Minutes of March 1, 2017**
3. **Business Arising from the Minutes:** None
4. **Correspondence:** None
5. **Reports of Standing Committees:**
 - A. **Undergraduate Studies Committee:**
 - a. Department of Earth Sciences, change to course description of EASC 3610 and change to title and course description of EASC 4620, paper 5.A.a (10 pages)
 - b. Department of Physics, changes to requirements for major and honours major in Physics, paper 5.A.b (13 pages)
 - c. Department of Physics, proposal for new major and honours major in Ocean Physics, paper 5A.c (14 pages)
 - B. **Graduate Studies Committee:** None
 - C. **Nominating Committee:** None
 - D. **Library Committee:** None
6. **Reports of Chair in Teaching & Learning and Teaching Consultant**
7. **Reports of Delegates from Other Councils**
8. **Yaffle Presentation - Jennifer Adams and John Duff, Office of Public Engagement**
9. **Report of the Dean**
10. **Question Period**
11. **Adjournment**

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



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**FACULTY OF SCIENCE
FACULTY COUNCIL OF SCIENCE
MINUTES OF MEETING OF MARCH 1, 2017**

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, March 1, 2017, at 1:00 p.m. in room C-2045.

FSC 2500

Present

Biochemistry

Booth, V. Mulligan, M.

Biology

Chapman, T. Staveley, B.

Chemistry

Fridgen, T. Kerton, F. Kozak, C. Rowley, C.

Computer Science

Bungay, S.

Mathematics & Statistics

Alam, J. Bihlo, A. Booth, I. Haynes, R. Loredano-Osti, J.C.
MacLachlan, S. Pike, D. Radford, C. Sullivan, S.

Physics & Physical Oceanography

Curnoe, S. Evstigneev, M. Lagowski, J. Saika-Voivod, I.

Psychology

Thorpe, C.

Dean of Science Office

Courage, M. Foss, K. Foster, A. Jackson, G. Rideout, J.
Zedel, L.

CITL

Todd, A.

Library

Ambi, Alison

Engineering

Duan, Xili

Faculty of Business

Clift, T.

- FSC 2501 Regrets**
Danine Farquharson
Paul Marino
- FSC 2502 Adoption of Minutes**
Moved: Minutes of the January 18, 2017, meeting be adopted (Sullivan/Haynes).
Carried.
- FSC 2503 Business Arising**
An error was noted in the December minutes – FSC 2481 A.j. The motion that was carried approving the joint major in Marine Biology was ascribed to Earth Sciences rather than Ocean Sciences.
- FSC 2504 Correspondence: None**
- FSC 2505 Reports of Standing Committees:**
- A. Undergraduate Studies Committee:**
Report presented by Shannon Sullivan, Chair, Undergraduate Studies Committee
Senate met yesterday, February 28, 2017, and approved all changes proposed by the Faculty of Science Faculty Council. Also, a draft revising the Faculty of Science regulations has been circulated and feedback is requested by March 17, 2017. After feedback has been reviewed, a formal draft will be circulated.
 - B. Graduate Studies Committee:**
Report presented by J.C. LoredO-Osti, Chair, Graduate Studies Committee
 - a. Moved:** Interdisciplinary Programs, new Graduate program proposal, PhD in Scientific Computing (LoredO-Osti/Haynes). **Carried.**
 - b. Department of Mathematics and Statistics, special topics course, MATH 6261, Geometric Numerical Integration, already approved by the committee and presented to Faculty Council for information only.**
 - c. Moved:** Department of Psychology, calendar changes, Psy.D. Program (LoredO-Osti/Thorpe). **Carried.**
 - C. Nominating Committee: None**
 - D. Library Committee: None**
- FSC 2506 Reports of Chair in Teaching & Learning and Embedded Teaching Consultant**
There was no report by the Chair in Teaching & Learning.

Report presented by Amy Todd, Embedded Teaching Consultant

Departments are reminded to provide nominations for upcoming awards. It is hoped that Heads can nominate at least one individual for each of the awards. The deadline for the Dean of Science Distinguished Teacher Award is Friday, March 3, 2017. The deadlines for the President's teaching awards are March 15, 16, and 17, 2017.

FSC 2507 **Reports of Delegates from Other Councils:** None

FSC 2508 **Yaffle Presentation – Jennifer Adams, Office of Public Engagement:**
Presentation was cancelled due to illness.

FSC 2509 **Report of the Dean**
Presented by Mary Courage, Interim Dean.

Tenders are due for the new core Sciences building March 2, 2017. It is hoped that costs will be in line with original estimates and that the opening date will continue to be the year 2020.

Tri-council conducted a review of financial procedures, and a large number of findings were noted. Dave Miller from RGCS and Deborah Collis from FAS met with the Dean's Office to discuss changes being required in future. There were no illegitimate uses of spending discovered but many lapses in process. Researchers will now be required to provide greater justification for many purchases. Another thing noted was that Travel Requests were not being completed and dated before travel occurred. A third problem was that some faculty were beginning to collect data before ICEHR and Animal Care approvals were in place. Financial and Administrative Services will be providing training that all staff and faculty involved in research will be expected to attend. They will provide video training as well.

We have received the expected budget cuts for the next three years. The Faculty of Science will be required to reduce its base budget by about \$544k in the 2017/18 fiscal year, by about \$360k in the 2018/19 fiscal year, and about \$392k in the 2019/20 fiscal year. Department Heads have received information about possible options and are currently discussing this within their departments. Two main options are being discussed.

FSC 2510 **Question Period**

With regards to the new core Sciences building, it was asked what changes were made to the building plans to ensure that the new tenders come in on budget. The Dean said that changes were made to the tendering process so as to open up the

bidding to a wider range of applicants, allowing for more competition. There were also minor changes made to the building.

The Tri-Council review generated considerable discussion. Specific items that have been questioned were discussed, such as computers. Items that have dual purpose, for research and daily use, are the type of items being questioned. The Dean confirmed that the scrutiny is originating from the Tri-Council, not from FAS. Also, responsibility for repaying purchases that have been deemed ineligible after the transaction has occurred was mentioned. There were 80 items selected for testing during the review, and 12 of these resulted in a repayment. These were paid by FAS, but it will be the responsibility of departments to ensure purchases are eligible in future.

Regarding the budget cuts, it was asked what the two options being considered are. Option 1 is to not fill vacant faculty positions. The total number of positions that would not be filled over the three year period is approximately 10. Option 2 is to distribute the cuts to departments based on their percentage of the overall Faculty of Science budget.

FSC 2511

Adjournment

The meeting adjourned at 1:41 p.m.



Office of the Registrar

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

April 11, 2017

TO: All Members, Faculty Council of Science
FROM: Joan Burry, Secretary
Committee on Undergraduate Studies, Faculty of Science
SUBJECT: Calendar Changes and New Program Proposals

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

1. Department of Earth Sciences

- (i) Change to course description of EASC 3610
- (ii) Change to title and course description of EASC 4620

2.. Department of Physics and Physical Oceanography

- (i) Changes to requirements for major and honours major in Physics
- (ii) Proposal for new major and honours major in Ocean Physics

A handwritten signature in black ink that reads "Joan Burry". The signature is written in a cursive style and is positioned above a horizontal line.

Joan Burry

Associate Registrar and

Secretary, Committee

on Undergraduate Studies,

Faculty of Science

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title

EASC 3610 Hydrogeology

Abbreviated Course Title

Hydrogeology

Calendar Change(s)

3610 Hydrogeology (same as the former EASC 4610) examines geology and its relationship to groundwater occurrence ~~and exploitation~~: basic theory, groundwater flow systems, surface-groundwater interactions, field and laboratory techniques, and changes in water quality due to contaminant transport and sorption. ~~field and laboratory techniques, hydrogeological aspects of waste disposal and resource development.~~

CR: Environmental Science 4479, the former EASC 4610

LH: 3

PR: Physics 1051 (or 1021); Mathematics 2000 or Statistics 2550 or the former Statistics 2510; EASC 2502

Secondary Calendar Changes

None.

Calendar Entry After Changes

3610 Hydrogeology (same as the former EASC 4610) examines geology and its relationship to groundwater occurrence: basic theory, groundwater flow systems, surface-groundwater interactions, field and laboratory techniques, and changes in water quality due to contaminant transport and sorption.

CR: Environmental Science 4479, the former EASC 4610

LH: 3

PR: Physics 1051 (or 1021); Mathematics 2000 or Statistics 2550 or the former Statistics 2510; EASC 2502

Rationale

The current calendar description of EASC 3610 existed before the course instructor (Dr. Tao Cheng) re-developed the course materials in 2011. Dr. Cheng has taught the course six times since 2011 and feels that the current calendar description does not accurately and clearly reflect the contents of the course, and is not in line with those of similar courses (e.g., Environmental Science 4479 at MUN Grenfell Campus). Some students who took the course also expressed similar viewpoints. The change in the Calendar description outlined above reflects a change of less than 50% of the content.

Consultations Sought From

Comments Received

Arts	No
Business Administration	Yes
Co-operative Education	No
Education	No
Engineering	No
Grenfell Campus	No
Human Kinetics and Recreation	No
Marine Institute	Yes
Medicine	Yes
Music	No
Nursing	No
Pharmacy	No
Science (Math&Stat; Biology; Physics; Chemistry)	Yes (Just Chemistry)
Social Work	No
Library	Yes

Library Report Received

No

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

Name _____

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: _____

Secretary: _____

Date: _____

Proposal

Calendar Change to Existing Course EASC 4620

Executive Summary

The instructor of EASC 4620 Contaminant Hydrogeology proposes to change the course title and descriptions in order to accurately and clearly reflect the course contents.

Resource Implications: Instructional Costs

There will be no implications to resources or instructional costs.

Consultations

This proposal was sent to the distribution list for Consultation on Calendar Changes on 21 March 2017.

Library Holdings and/or Other Resources Required

No library holdings or other resources are required due to the proposed changes.

Signature of Unit Head (if appropriate): _____

Date: _____

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

Date: _____

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title

EASC 4620 Contaminant Hydrogeology

Abbreviated Course Title

Groundwater Modelling

Calendar Change(s)

4620 Contaminant Hydrogeology Groundwater Modelling examines the physical and chemical processes controlling groundwater ~~contamination~~ flow and contaminant transport from a numerical modelling viewpoint. Methods for numerical modelling ~~modeling of groundwater flow and contaminant transport~~ are the main focus. ~~discussed~~.—Students gain hands-on experience in using computer software packages to solve practical problems.

LH: 3

PR: EASC 3610 (or the former EASC 4610) or Environmental Science 4479 or permission of instructor

Secondary Calendar Changes

None.

Calendar Entry After Changes

4620 Groundwater Modelling examines the physical and chemical processes controlling groundwater flow and contaminant transport from a numerical modelling viewpoint. Methods for numerical modelling are the main focus. Students gain hands-on experience in using computer software packages to solve practical problems.

LH: 3

PR: EASC 3610 (or the former EASC 4610) or Environmental Science 4479 or permission of instructor

Rationale

The title and description of EASC 4620 in the current calendar had been proposed before the course materials were fully developed. Now the course has been fully developed and has been taught once in fall 2016. The course instructor (Dr. Tao Cheng) feels that the title and description of the course does not accurately and clearly reflect the contents of the course. Some students who are taking the course also expressed similar viewpoints. The change in the Calendar description outlined above reflects a change of less than 50% of the content.

Consultations Sought From

Comments Received

Arts	No
Business Administration	Yes
Co-operative Education	No
Education	No
Engineering	No
Grenfell Campus	No
Human Kinetics and Recreation	No
Marine Institute	Yes
Medicine	Yes
Music	No
Nursing	No
Pharmacy	No
Science (Math&Stat; Biology; Physics; Chemistry)	Yes (Just Chemistry)
Social Work	No
Library	Yes

Library Report Received

No

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

Name _____

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair: _____

Secretary: _____

Date: _____

Responses to EASC Proposed Course Change forms

Subject RE: Proposed course changes from the Department of Earth Sciences

From cvaridy@mun.ca

To pmorrill@mun.ca

Date Fri 12:19

Dear Dr. Morrill

The Faculty of Medicine supports the two proposed course changes that the Department of Earth Sciences would like to make to the university calendar.

Regards

Cathy Vardy, MD, FRCP(C)
Vice Dean
Faculty of Medicine
Health Sciences Centre, Room M2M319
Memorial University of Newfoundland
St. John's, NL, Canada, A1B 3V6
Tel: 709-864-6417 or Fax: 709-864-6336

-----Original Message-----

From: Penny L Morrill [mailto:pmorrill@mun.ca]

Sent: March-21-17 4:45 PM

To: fba.ad.undergrad@mun.ca; shicks@mun.ca; jmellor@mun.ca; enrconsult@mun.ca; associatevpoffice@qrenfell.mun.ca; mehickey@mun.ca; staceym@mun.ca; miugconsultations@mi.mun.ca; Vardy, Cathy; Caines, Sherry; isutherland@mun.ca; deanNurse@mun.ca; pharminfo@mun.ca; deansci@mun.ca; adeanugradswk@mun.ca; univlib@mun.ca

Subject: Proposed course changes from the Department of Earth Sciences

March. 21, 2017

To whom it may concern,

Attached are 2 proposed course changes that the Department of Earth Sciences would like to make in the University Calendar. We have proposed to update course names and/or descriptions of two of our courses to better reflect the course content. At this stage I am sending them to you as part of the consultation process.

Thank you for your time and consideration.

Cheers,
Penny Morrill
Chair of the Undergraduate Matters Committee

Subject Re: Proposed course changes from the Department of Earth Sciences

From Associate Dean of Under Graduate Faculty of Business Administration

To Penny L Morrill

Date Wed 16:13

Hello:

Thank you for the opportunity to comment on this proposal. The Faculty of Business Administration has no concerns with the proposed changes.

—larry

On Mar 21, 2017, at 4:44 PM, Penny L Morrill <pmorrill@mun.ca> wrote:

March. 21, 2017

To whom it may concern,

Attached are 2 proposed course changes that the Department of Earth Sciences would like to make in the University Calendar. We have proposed to update course names and/or descriptions of two of our courses to better reflect the course content. At this stage I am sending them to you as part of the consultation process.

Thank you for your time and consideration.

Cheers,

Penny Morrill

Chair of the Undergraduate Matters Committee

Subject consultation response from chemistry to EASC proposals

From Chris Flinn

To pmorrill@mun.ca

Cc Science, Dean of

Date Today 15:22

Hello Penny,

Chemistry supports the proposals from Earth Sciences for calendar changes to existing courses EASC 3610 and EASC 4620. Neither calendar change will have any effect on Chemistry Department programs.

sincerely,

Chris Flinn

Deputy Head, Undergraduate Studies

MUN Chemistry Department

Subject RE: Proposed course changes from the Department of Earth Sciences- EASC 4620 Contaminant Hydrogeology

From MIUG Consultations

Sender Dawn King

To Penny L Morrill

Date Today 14:57

Dr. Morrill,

Thank you for the opportunity to review and comment on the proposed changes to EASC 4620 Contaminant Hydrogeology.

These changes will have no impact on the programs at the Marine Institute. We are happy to support this proposal.

A couple of minor comments:

The approval form is a bit weird in that there is no spot for the new Abbreviated Course Title. I have seen other submissions put it in the Abbreviated Course Title section. So something like:

Course Number and Title

EASC 4620 Contaminant Hydrogeology

Abbreviated Course Title
Groundwater Modeling

Also, there remains an underline in the Calendar Entry After Changes section.

Minor points to be sure.

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

Subject RE: Proposed course changes from the Department of Earth Sciences - EASC 3610 Hydrogeology.

From MIUG Consultations

Sender Dawn King

To Penny L Morrill

Date Today 14:56

Dr. Morrill,

Thank you for the opportunity to review and comment on the proposed changes to EASC 3610 Hydrogeology.

These changes will have no impact on the programs at the Marine Institute. We are happy to support this proposal as presented.

All the best,
Derek Howse

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

Subject RE: Proposed course changes from the Department of Earth Sciences

From Ambi, Alison

To pmorrill@mun.ca

Date Today 13:44

Hello Penny,

I have reviewed the proposed calendar changes to EASC 3610 and EASC 4620, and I concur that these changes will have no implications for library resources.

Sincerely,
Alison

Alison Ambi
709 864 7125
Interim Head, Collections

Subject Librarian:
Earth Sciences
Computer Science
Mathematics and Statistics
Physics and Physical Oceanography
Psychology

QEII Library
Memorial University of Newfoundland
www.library.mun.ca

-----Original Message-----

From: Library Correspondence
Sent: March-22-17 10:02 AM
To: Ambi, Alison
Subject: FW: Proposed course changes from the Department of Earth Sciences

Jackie Pitcher-March
Jackie Pitcher-March | Assistant to the University Librarian Memorial University
Libraries | St. John's, NL A1B 3Y1
T: 709-864-3862 | F: 709-864-2153 | jpmarch@mun.ca

Subject Automatic reply: Proposed course changes from the Department of Earth Sciences
From Hicks, Sue 
To Penny L Morrill 
Date Today 16:50

I will be out of the office from March 20-29, 2017. If you require assistance during this time, please contact Ms. Rose Cross at 864-3404 or via email at rcross@mun.ca. Thank you.



Office of the Registrar

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April 11, 2017

TO: All Members, Faculty Council of Science

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

SUBJECT: Calendar Changes and New Program Proposals

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

1. Department of Earth Sciences

- (i) Change to course description of EASC 3610**
- (ii) Change to title and course description of EASC 4620**

2.. Department of Physics and Physical Oceanography

- (i) Changes to requirements for major and honours major in Physics**
- (ii) Proposal for new major and honours major in Ocean Physics**

A handwritten signature in black ink that reads "Joan Burry". The signature is written in a cursive, flowing style. Below the signature is a solid horizontal line.

Joan Burry

Associate Registrar and
Secretary: Committee
on Undergraduate Studies,
Faculty of Science

Proposal Calendar Changes to Major and Honours Programs in Physics

Consultation Request.

The Department of Physics and Physical Oceanography proposes changes to the Calendar for our Major and Honours programs.

Feedback is requested by January 16, 2017.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)

Jolanta Lagowski, Head (jolantal@mun.ca).

November 28, 2016.

Proposal

Calendar Changes to Major and Honours Programs in Physics

Executive Summary

Several deletions and additions to course requirements for both the Major and Honours programs in Physics are proposed. A number of minor changes are also proposed. No new courses are involved.

Resource Implications: Instructional Costs

No additional teaching resources.

Consultations

The University Library, Grenfell Campus, the Marine Institute, Faculty of Engineering, and Departments within the Faculty of Science.

Library Holdings and/or Other Resources Required

No additional costs are implicated.

Signature of Unit Head (if appropriate): _____

Date: _____

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

Date: _____

SUMMARY PAGE FOR SENATE

Approval Form

Programs Titles: Major in Physics, Honours in Physics

Calendar Changes

9.10.2 Major in Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051 ~~(or Chemistry 1010, 1011, and 1031).~~ (or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
- 4.5. Mathematics 2000, Mathematics 2050, and Mathematics 2260 and 3202.
- 5.6. Physics 1050 (or 1020) and 1051.
- 6.7. Physics 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3820 and 3900.
- 7.8. An additional 12 9 credit hours in physics courses numbered 3000 or higher which shall include at least 6 credit hours selected from the courses numbered 4000 or higher (excluding 490A/B) which shall include at least 6 credit hours selected from the courses numbered Physics 3000, 3150, 3300, the former 3410, 3550, 3600, 3751.
5. ~~Physics 3810 or Mathematics 3202.~~
9. Forty-two credit hours in applicable elective courses to form a total of 120 credit hours.

Mathematics 1001, 2000 and 2050 are prerequisites to many Physics courses and should be completed by the end of second year. Note that Mathematics 2260 is co-requisite to Physics 3220 and is recommended to be and should be completed before the Winter term of the third year. Those who intend to make a career in Physics should note that additional Physics courses are strongly recommended and interested students should consult the academic program officer. ~~Mathematics 2051 and Computer Science 1510 or 2602 are also recommended.~~

9.10.3 Honours in Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051 ~~(or Chemistry 1010, 1011, and the former 1031).~~ (or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
5. Mathematics 2000, 2050, ~~and 2260,~~ 3202.
6. Physics 1050 (or 1020) and 1051.
7. Physics 2053, 2055, 2750, 2820, 3220, 3230, 3400, 3500, ~~3600,~~ 3750, 3820, 3900, ~~4400,~~ 4500, 4820, 4850, ~~4900,~~ 490A/B.
8. Physics 3800 or 4900.
9. ~~Physics 3810 or Mathematics 3202.~~
10. An additional 12 credit hours in physics courses numbered 3000 or higher which shall include at least 6 credit hours selected from physics courses numbered 4000 or higher. Students are encouraged to consider Physics 3800, 4400 and 4900, and other courses depending on the focus of their thesis research.
11. ~~Fifteen~~ Eighteen credit hours in applicable elective courses to form a total of 120 credit hours.

Note:

Certain graduate courses may be taken in the final year of the Honours Program with the permission of the Head of the Department.

Only 6 credit hours at the 1000 level in each of Physics, Chemistry and Mathematics can be used to fulfil the 120 credit hours required for the Honours program. The inclusion of Mathematics 1090, or the sequence of Physics 1020, 1021, and 1051 ~~or the substitution of Chemistry 1010, 1011 and the former 1031 for Chemistry 1050 and 1051~~ will each increase the number of credit hours required for the Honours Physics program by three.

An Honours thesis is to be presented on work undertaken by the candidate under the guidance of a Department of Physics and Physical Oceanography faculty member. The thesis comprises the 6 credit hour course Physics 490A/B. Students should seek departmental advice regarding a thesis project no later than the winter preceding the semester in which the project will be started.

~~The Honours Physics program in and beyond the third year requires a familiarity with computer programming and numerical analysis. In choosing electives for this program, the Department recommends that students supplement the prescribed program with the following courses Computer Science 2500 or 2510, and 3731 (or Mathematics 2130 and 3132). Mathematics 2051 and 3000 are also suitable electives. For specific courses and recommendations about electives, consultation with a faculty advisor in the Department is suggested.~~

~~The Department recommends that students wishing to complete the Honours Physics program in 120 credit hours follow the schedule given below. This schedule is intended for students who qualify for Physics 1050 and 1051. Other suggested course schedules are available from the Head of the Department.~~

~~Recommended Course Schedule—Honours Physics Program—~~

Year—	Semester I—	Semester II—
------------------	------------------------	-------------------------

I	<ul style="list-style-type: none"> • Chemistry 1050 • English 1080 • Mathematics 1000 • Physics 1050 • Elective 	<ul style="list-style-type: none"> • Chemistry 1051 • Computer Science 1510 • English 1110 (1101, 1102) • Mathematics 1001 • Physics 1051
II	<ul style="list-style-type: none"> • Mathematics 2000 • Mathematics 2050 • Physics 2053 • Physics 2820 • Elective 	<ul style="list-style-type: none"> • Mathematics 2260 • Mathematics 3202 • Physics 2055 • Physics 2750 • Elective
III	<ul style="list-style-type: none"> • Physics 3220 • Physics 3400 • Physics 3500 • Physics 3750 • Physics 3820 	<ul style="list-style-type: none"> • Physics 3900 • Physics 3600/4500 • Physics 3230/4400 • Physics 4820 • Physics Elective
IV	<ul style="list-style-type: none"> • Physics 4900 • Physics 4850 • Physics 490A • Physics Elective • Elective 	<ul style="list-style-type: none"> • Physics 4500/3600 • Physics 4400/3230 • Physics 490B • Physics Elective • Physics Elective

Secondary Calendar Changes

None.

Calendar Entry After Changes

9.10.2 Major in Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051 (or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
5. Mathematics 2000, 2050, 2260 and 3202.
6. Physics 1050 (or 1020) and 1051.
7. Physics 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3820 and 3900.
8. An additional 12 credit hours in physics courses numbered 3000 or higher which shall include at least 6 credit hours selected from the courses numbered 4000 (excluding 490A/B) or higher.

9. Thirty-nine credit hours in applicable elective courses to form a total of 120 credit hours.

Mathematics 1001, 2000 and 2050 are prerequisites to many Physics courses and should be completed by the end of second year. Note that Mathematics 2260 is co-requisite to Physics 3220 and is recommended to be completed before the Winter term of the third year. Those who intend to make a career in Physics should note that additional Physics courses are strongly recommended and interested students should consult the academic program officer.

9.10.3 Honours in Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051 (or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
5. Mathematics 2000, 2050, 2260, 3202.
6. Physics 1050 (or 1020) and 1051.
7. Physics 2053, 2055, 2750, 2820, 3220, 3230, 3400, 3500, 3750, 3820, 3900, 4500, 4820, 4850, 490A/B.
8. Physics 3800 or 4900.
9. An additional 12 credit hours in physics courses numbered 3000 or higher which shall include at least 6 credit hours selected from physics courses numbered 4000 or higher (excluding 490A/B). Students are encouraged to consider Physics 3800, 4400 and 4900, and other courses depending on the focus of their thesis research.
10. Eighteen credit hours in applicable elective courses to form a total of 120 credit hours.

Note:

Certain graduate courses may be taken in the final year of the Honours Program with the permission of the Head of the Department.

Only 6 credit hours at the 1000 level in each of Physics, Chemistry and Mathematics can be used to fulfil the 120 credit hours required for the Honours program. The inclusion of Mathematics 1090, or the sequence of Physics 1020, 1021, and 1051 will each increase the number of credit hours required for the Honours Physics program by three.

An Honours thesis is to be presented on work undertaken by the candidate under the guidance of a Department of Physics and Physical Oceanography faculty member. The thesis comprises the 6 credit hour course Physics 490A/B. Students should seek departmental advice regarding a thesis project no later than the winter preceding the semester in which the project will be started.

For specific courses and recommendations about electives, consultation with a faculty advisor in the Department is suggested.

Rationale

Major Program. The proposed changes generally lead to graduating students having a more solid background in fundamental knowledge of relevant physics subjects and skills that involve:

1. The department of Chemistry has evolved its lower level first-year courses (1010, 1011, 1031) such that they are no longer suitable for students pursuing a degree in physics. Chemistry 1031 is no longer offered and Chemistry 1011 is to be phased out. The deletion of this alternate set of first-year chemistry courses has been recommended by that department. Chemistry 1200 and 1001 are the recommend courses from Grenfell.
2. The addition of a first-year computer science in programming (1501 or 1001). This is considered an essential skill, similar to experimental laboratory training.
3. The addition of Physics 3820, Mathematical Physics I. This is considered a foundation physics course and is required for some of the upper-level physics courses.
4. The new requirements of at least two fourth-year physics courses. This is consistent with many other Faculty of Science major programs as well as other Canadian university major programs. It will also facilitate the possibility of students in this program to pursue graduate degrees. Also note that many of our senior courses were re-numbered subsequent to the change from five-year to four-year programs. For example, PHYS 3821, 3410, and 3920 are now called PHYS 4820, 4400, and 4900, respectively.
5. Other minor re-wording changes are consistent with current policy in the department.

Honours Program. The proposed changes were inspired partially by the recent (Spring 2016) report of the Academic Unit Planning Review Panel's comment (Section 2b) 'Remove, merge, or reform individual courses that impede growth of the physics honours programme,' by feedback from senior undergraduate students 'Several students cited the restrictive requirements of the Pure Physics Honours program as a motive for selecting a Joint Honours program instead. They feel that the ability to select upper-level physics courses is important.' In addition, an informal survey of similarly sized Physics departments in Canada revealed that our program has a larger number of required courses. A primary motivation for the new program is to provide students with a solid background in the fundamental principles and skills to ensure the likelihood of success as a graduate student. The proposed program changes involve:

1. For the rationale in deleting the alternate first-year chemistry courses, see item 1 above.
2. A minor expansion of the required computer programming course (1510 – Introduction to Programming for Scientific Computing) to include the new course 1001 (Introduction to Programming). Either of these courses will provide students with the desired foundation in programming.
3. Elimination of Physics 3810 as it is now an inactive course.
4. Removal of Physics 3600 (Optics and Photonics I) as a required course. Optics is covered to some extent our second year courses and 2055, and Photonics is not viewed as a foundation topic. An informal survey of other physics departments in Canada revealed that such a course is not required in their honours programs.
5. Removal of Physics 4400 (Statistical Mechanics) as a required course. Recent course syllabus changes resulted in moving some key topics in statistical mechanics (such as quantum statistics) from

4400 to 3400. Physics 3400 (as well as 2053, Fluids and Thermal Physics) are now viewed as providing the required foundation knowledge in the general field of Thermal and Statistical Physics.

6. Expansion of the requirement of Physics 4900 (Physics Laboratory I) to include Physics 3800 (Computational Physics) as an alternative. Both of these courses are designed to provide students with experience in performing in-depth, senior-level, (laboratory or computer) 'experiments' and writing detailed reports. Neither course includes a final exam and evaluation is made mainly through the reports. This (common) feature is viewed as extremely valuable to students by our department. The expanded choice will allow students with interests more on the theory side of physics to take a valuable course (3800) as alternative to 4900. We note that the required course Physics 3900 (Physics Laboratory I), also a project-based course, is viewed as providing adequate advanced laboratory skills. Note that 3800 was introduced as a third-year course but could easily have been a fourth-year course.

7. A list of recommended courses (3800, 4400, and 4900) is now included.

8. The number of free electives has been increased from four to six.

9. Certain sections under the Note are now viewed as being unnecessary.

10. We plan to now include the recommended Schedule on our department website to facilitate changes if necessary.

Consultations Sought From

Comments Received

- Faculty of Science.
- Grenfell Campus
- Marine Institute
- Faculty of Engineering

1. Grenfell Campus	Yes
2. Marine Institute	Yes
3. Department of Biochemistry	Yes/No
4. Department of Biology	Yes/No
5. Department of Chemistry	Yes/No
6. Department of Computer Science	Yes/No
7. Department of Earth Sciences	Yes/No
8. Department of Ocean Sciences	Yes/No
9. Department of Psychology	Yes/No
10. Department of Mathematics and Statistics	Yes/No
11. Engineering	Yes

Library Report Received

Yes

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

Name _____

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Chair: _____

Secretary: _____

Date: _____

On 2016-11-23, 5:11 PM, "Rouleau, Pierre" <prouleau@grenfell.mun.ca> wrote:

>Dear Jolanta:

>
>Aleks and I met on Friday to finalise our review of the Calendar
>changes proposed by your department. Here follows our response to your
>request for feedback; it constitutes the evidence of consultation that
>was requested of you by the Senate Committee on Undergraduate Studies
>(via Shannon Sullivan's email of 3 Nov. 2016).

>
>
>Part II: Physics Programmes Changes:

>
>1. Regarding the changes proposed to your physics major/honours
>programmes, we applaud your response to the recommendations that
>resulted from the external review process your department recently went
>through. We find your programmes solid, especially the honours one (we
>envy you!)

>
>2. We appreciate that the chemistry requirements in your major/honours
>programmes indicate the Grenfell's chemistry courses 1200 and 1001
>equivalents; we believe that such practice should be encouraged as it
>can ease the transfer of any physics students who might want to go
>to/from our respective institutions;

>
>3. In the 'Rationale' part of the proposal, in Note 5 regarding the
>removal of Physics 3600 (Optics and Photonics I) as a required course
>in the honours programme, it is mentioned that Optics is covered to
>some extent in other 'first and second year courses (1051 and 2055)';
>yet, in the new description of Physics 1051, Optics has been removed.
>We suggest that, in order to make the logic of the rationale
>implacable, Physics
>1051 should NOT be mentioned.

>
>This concludes our feedback. We wish you full success with your
>proposal, and please know that you have our full support.

>
>Sincerely,

>
>Pierre R.

>-----
>Dr. Pierre-Michel Rouleau, P.Geoph (APEGA) Chair, Physics Programme
>Grenfell Campus Memorial University of Newfoundland
>20 University Drive
>Corner Brook, NL, Canada A2H 5G4

>
>Phone: 1-709-637-6294

>Fax: 1-709-639-8125

>Email: prouleau@grenfell.mun.ca
>-----

DATE: November 28, 2016

TO: Martin Plumer - Chair, Undergraduate Studies Committee

FROM: Alison Ambi, Science Research Liaison Librarian

RE: Proposed calendar changes to the physics major and honours programs

I have reviewed the proposed calendar changes to the Physics major and honours programs and determined that they would have no impact on library resources.

From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations
[MIUGconsultations@mi.mun.ca]
Sent: November-29-16 8:44 AM
To: Martin Plumer
Subject: RE: Proposed changes to major and honours programs in Physics

Martin,

Thank you for the opportunity to review and comment on the proposed changes to the Major and Honours Programs in Physics. These changes will have no impact on the programs at the Marine Institute and we are happy to support this proposal.

One minor note: the number of the rationale statements for the Honours program is messed up (pages 7 and 8 of the proposal).

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

-----Original Message-----

From: Engineering Consult [mailto:engrconsult@mun.ca]

Sent: January-17-17 8:18 AM

To: Martin Plumer

Cc: Dennis Peters

Subject: Re: Proposed changes to major and honours programs in Physics

Dr. Plumer,

As of this morning I have received no reply from the Department of Electrical and Computer Engineering regarding your consultation request.

In my opinion the proposed changes to the major and honours programs in Physics will have no impact on Engineering programs.

Dr. Glyn George, Chair

Committee on Undergraduate Studies

Faculty of Engineering and Applied Science Memorial University of Newfoundland

St. John's NL A1B 3X5

On 2016-11-28 07:59, Martin Plumer wrote:

> Consultation Request.

>

> The Department of Physics and Physical Oceanography proposes changes
> to the Calendar for our Major and Honours programs.

>

> Feedback is requested by January 16, 2017.

>

> Thank you.

>

> Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)

>

> Jolanta Lagowski, Head (jolantal@mun.ca).

>

> November 28, 2016.



Office of the Registrar

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

April 11, 2017

TO: All Members, Faculty Council of Science
FROM: Joan Burry, Secretary
Committee on Undergraduate Studies, Faculty of Science
SUBJECT: Calendar Changes and New Program Proposals

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

1. Department of Earth Sciences

- (i) Change to course description of EASC 3610
- (ii) Change to title and course description of EASC 4620

2.. Department of Physics and Physical Oceanography

- (i) Changes to requirements for major and honours major in Physics
- (ii) Proposal for new major and honours major in Ocean Physics

A handwritten signature in black ink that reads "Joan Burry". The signature is written in a cursive, flowing style with a horizontal line underneath the name.

Joan Burry

Associate Registrar and

Secretary: Committee

on Undergraduate Studies,

Faculty of Science

Proposal New Programs in Ocean Physics

Executive Summary

The Department of Physics and Physical Oceanography is proposing new programs: Major degree in Ocean Physics and Honours degree in Ocean Physics

Resource Implications: Instructional Costs

Courses required for the programs are already developed. No new resources are anticipated.

Consultations

From: Martin Plumer [mailto:plumer@mun.ca]
Sent: Saturday, March 04, 2017 8:39 AM
To: 'BioChem' <biohead@mun.ca>; 'Biology' <pmarino@mun.ca>; 'Chemistry' <chemhead@mun.ca>; 'Computer Science' <cs-chair@mun.ca>; 'Earth Science' <jhanchar@mun.ca>; 'Grenfell' <associatevpoffice@grenfell.mun.ca>; 'GrenfellPhysics' <prouleau@grenfell.mun.ca>; 'Library' <aambi@mun.ca>; MIUG Consultations <MIUGconsultations@mi.mun.ca>; 'Math' <mathconsult@mun.ca>; 'Ocean Sciences' <fletcher@mun.ca>; 'Physics' <jolantal@mun.ca>; 'Psychology' <psychology.head@mun.ca>
Subject: RE: Consultation: New programs in Ocean Physics.

Reminder.
Thanks.
Martin

From: Martin Plumer [mailto:plumer@mun.ca]
Sent: February-13-17 1:25 PM
To: 'BioChem'; 'Biology'; 'Chemistry'; 'Computer Science'; 'Earth Science'; 'Engineering'; 'Grenfell'; 'GrenfellPhysics'; 'Library'; 'Marine Inst'; 'Math'; 'Ocean Sciences'; 'Physics'; 'Psychology'
Subject: Consultation: New programs in Ocean Physics.

The Department of Physics and Physical Oceanography is proposing new programs in Ocean Physics.

Please see the attached.
Feedback is requested by March 13, 2017.

Thank you.
Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantal@mun.ca).
Feb. 13, 2017.

Library Holdings and/or Other Resources Required

None.

SUMMARY PAGE FOR SENATE

Approval Form

Program Title: Major in Ocean Physics

Course Additions

None

Calendar Entry

9.10.x Major in Ocean Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051(or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
5. Mathematics 2000, 2050, 2260, and 3202.
6. Physics 1050 (or 1020) and 1051.
7. One of Ocean Sciences 2000, 2100 or 2200.
8. Ocean Sciences 2300 or Physics 2300.
9. Physics 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3820, and 3900.
10. Physics 3300, 3340, 4300
11. An additional 3 credit hours in physics courses numbered 3000 or higher. Students are encouraged to consider Physics 3150, 3750, 3800, 4205, or 4340.
12. Thirty-three credit hours in applicable elective courses.

Mathematics 1001, 2000 and 2050 are prerequisites to many Physics courses and should be completed by the end of second year. Note that Mathematics 2260 is co-requisite to Physics 3220 and is recommended to be completed before the Winter term of the third year. Statistics 2550 is a recommended elective. Note that Ocean Sciences 1000 is a prerequisite for Ocean Sciences 2000 and Earth Sciences 1000 is a prerequisite for Ocean Sciences 2200 so that interested students need to consider this if they choose either of these options for item 7 above.

Rationale

These new programs will give students a new opportunity to pursue a degree focused on ocean physics. Related programs exist only at two universities in Canada, at UBC and the University of Victoria, which are combined degrees. This unique program will allow students to prepare for careers in oceanography and meteorology providing basic and essential knowledge to study the physics of the ocean, atmosphere, and climate. The programs also contain connections with the disciplines of meteorology and atmospheric science, as well as environmental science.

Having an Ocean Physics undergraduate program is a natural fit for the Department of Physics and Physical Oceanography given Memorial University's strength in ocean research and its geographical proximity to the ocean. Some students come to MUN, in part, because of the connection to the ocean and these new unique programs strengthen that connection. These programs will well position students looking for an interdisciplinary training in both physics and oceanography.

The Major in Ocean Physics is designed as a variation on our Major in Physics BSc program. It is appropriate for students wishing to pursue a career in an ocean related field. The Honours in Ocean Physics follows the structure of the Honours in Physics BSc and is appropriate for students wishing to pursue further advanced academic studies in ocean physics. Both new programs share the same requirements in the first two years as their respective Physics program counterparts to allow for transition between programs until the start of third year.

Consultations Sought From

Comments Received

Faculty of Science.

- Grenfell Campus
- Marine Institute
- Faculty of Engineering

- | | |
|--|-----|
| 1. Grenfell Campus | Yes |
| 2. Marine Institute | Yes |
| 3. Department of Biochemistry | No |
| 4. Department of Biology | Yes |
| 5. Department of Chemistry | Yes |
| 6. Department of Computer Science | No |
| 7. Department of Earth Sciences | No |
| 8. Department of Ocean Sciences | Yes |
| 9. Department of Psychology | No |
| 10. Department of Mathematics and Statistics | No |
| 11. Engineering | Yes |

Library Report Received

Yes

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

Name _____

-
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Secretary: _____

Date: _____

SUMMARY PAGE FOR SENATE

Approval Form

Program Title:

Honours in Ocean Physics

Course Additions

None

Calendar Entry

9.10.x Honours in Ocean Physics

1. English 1080 and English 1110 (or equivalent).
2. Chemistry 1050 and 1051 (or 1200 and 1001).
3. Mathematics 1000 and 1001.
4. Computer Science 1510 or 1001.
5. Mathematics 2000, 2050, 2260, and 3202.
6. One of Ocean Sciences 2000, 2100 or 2200
7. Physics 1050 (or 1020) and 1051.
8. Physics 2053, 2055, 2750, 2820, 3220, 3230, 3400, 3500, 3750, 3800, 3820, 3900, 4820, 490A/B.
9. Physics 2300 or Ocean Sciences 2300.
10. Physics 3300, 3340, 4300, 4205, 4340

11. Statistics 2550.

12. Twelve credit hours in applicable elective courses

Note: Certain of the graduate courses may be taken in the final year of the Honours Program with the permission of the Head of the Department.

Only 6 credit hours at the 1000 level in each of Physics, Chemistry and Mathematics can be used to fulfill the 120 credit hours required for the Honours program. The inclusion of Mathematics 1090, or the sequence of Physics 1020, 1021, and 1051, will each increase the number of credit hours required for the Honours Physics program by three.

Ocean Sciences 1000 is a prerequisite for Ocean Sciences 2000 and Earth Sciences 1000 is a prerequisite for Ocean Sciences 2200 so that interested students need to consider this if they choose either of these options for item 6 above.

An Honours thesis is to be presented on work undertaken by the candidate under the guidance of a Department of Physics and Physical Oceanography faculty member. The thesis comprises the 6 credit hour course Physics 490A/B. Students should seek departmental advice regarding a thesis project no later than the winter preceding the semester in which the project will be started.

For specific courses and recommendations about electives, consultation with a faculty advisor in the Department is suggested.

Rationale (as above for the Major program)

These new programs will give students a new opportunity to pursue a degree focused on ocean physics. Related programs exist only at two universities in Canada, at UBC and the University of Victoria, which are combined degrees. This unique program will allow students to prepare for careers in oceanography and meteorology providing basic and essential knowledge to study the physics of the ocean, atmosphere, and climate. The programs also contain connections with the disciplines of meteorology and atmospheric science, as well as environmental science.

Having an Ocean Physics undergraduate program is a natural fit for the Department of Physics and Physical Oceanography given Memorial University's strength in ocean research and its geographical proximity to the ocean. Some students come to MUN, in part, because of the connection to the ocean and these new unique programs strengthen that connection. These programs will well position students looking for an interdisciplinary training in both physics and oceanography.

The Major in Ocean Physics is designed as a variation on our Major in Physics BSc program. It is appropriate for students wishing to pursue a career in an ocean related field. The Honours in Ocean Physics follows the structure of the Honours in Physics BSc and is appropriate for students wishing to pursue further advanced academic studies in ocean physics. Both new programs share the same requirements in the first two years as their respective Physics program counterparts to allow for transition between programs until the start of third year.

Consultations Sought From

Comments Received

Faculty of Science.

- Grenfell Campus
- Marine Institute
- Faculty of Engineering

- | | |
|--|-----|
| 1. Grenfell Campus | Yes |
| 2. Marine Institute | Yes |
| 3. Department of Biochemistry | No |
| 4. Department of Biology | Yes |
| 5. Department of Chemistry | Yes |
| 6. Department of Computer Science | No |
| 7. Department of Earth Sciences | No |
| 8. Department of Ocean Sciences | Yes |
| 9. Department of Psychology | No |
| 10. Department of Mathematics and Statistics | No |
| 11. Engineering | Yes |

Library Report Received

Yes

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

Name _____

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From: Engineering Consult [engrconsult@mun.ca]
Sent: February-17-17 1:58 PM
To: Martin Plumer
Cc: Jolanta Lagowski; Andrew Fisher; Jennifer Williams
Subject: Re: Consulation: New programs in Ocean Physics.

Dear Dr. Plumer,

Thank you for the opportunity to comment on the proposed new major and honours in Ocean Physics.

At this afternoon's meeting, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science found that these changes will have no impact on our programs.

I wish you well in the development of these Calendar 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

Hi Martin,

The Department of Biology supports the proposal for new programs in Ocean Physics.

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

From: Burry, Joan [jburry@mun.ca]
Sent: February-10-17 2:20 PM
To: Martin Plumer
Subject: RE: Ocean Physics

Yes, I think so.

From: Martin Plumer [mailto:plumer@mun.ca]
Sent: February 10, 2017 2:05 PM
To: Burry, Joan
Subject: FW: Ocean Physics

Hi Joan,

Ocean Sciences has identified 'one small thing' with our proposal of the Ocean Physics programs (attached).

See Annie's note below regarding PR for OSC 2000 and 2200.

In principle, students would be able to take care of these PR on their own should they choose to take those courses.

Is this an acceptable approach?

Thanks.

Martin

From: Annie Mercier [mailto:amercier@mun.ca]
Sent: February-09-17 11:05 AM
To: Martin Plumer
Cc: 'Ocean Sciences'; 'Lagowski, Jolanta'
Subject: Re: Ocean Physics

Hi Martin:

OCSC 2000 has OCSC 1000 as PR (plus another 1000-level science course), whereas OCSC 2200 has EASC

1000 as PR.

Cheers,

Annie

From: Annie Mercier [mailto:amercier@mun.ca]
Sent: February-09-17 10:50 AM
To: Martin Plumer
Cc: 'Ocean Sciences'; 'Lagowski, Jolanta'
Subject: Re: Ocean Physics

Hi Martin:

I forgot to mention one small thing: I presume you're aware that the "choice" offered in line 7 is not really a choice (as students can only take OCSC 2100 Chemical Oceanography without having to take non-listed PR courses upstream).

Cheers,
Annie

On 09/02/2017 8:44 AM, Martin Plumer wrote:
Hi Annie,

Thanks.

We will go ahead with the Consultation on Monday so let us know if there are any issues as a result of your curriculum meeting (if held today).

Cheers,
Martin

From: Annie Mercier [mailto:amercier@mun.ca]
Sent: February-09-17 8:35 AM
To: Martin Plumer
Cc: 'Ocean Sciences'; 'Lagowski, Jolanta'
Subject: Re: Ocean Physics

Hi Martin:

I see nothing of major concern in the proposal, it looks good, but I wanted to discuss it at our next curriculum meeting since it includes "One of Ocean Sciences 2000, 2100 or 2200." We need to discuss how this (particularly OCSC 2000 and 2100) could impact us. And it's somewhat tricky since we have not yet started running our own Majors. The meeting was planned for today but might get postponed to next week.

It's really up to you whether you wish to wait for our initial feedback or go ahead with the formal consultations.

All the best,
Annie

Annie Mercier, PhD
Professor and Deputy Head,
Department of Ocean Sciences
Memorial University (Ocean Sciences Centre)
St. John's, NL, Canada, A1C 5S7
Tel: (709) 864-2011
Email: amercier@mun.ca
www.mun.ca/osc/amercier/bio.php

From: Fletcher, Garth [fletcher@mun.ca]
Sent: March-14-17 10:04 AM
To: Martin Plumer
Cc: amercier@mun.ca
Subject: RE: Consultation: New programs in Ocean Physics.

Hi Martin, our Undergraduate studies committee review your proposal and their response is as follows:

We have reviewed the proposal for a new Ocean Physics. We are supportive of the proposal and only had a

few comments:

In the first section (Major) on page 2, OCSC 2300 is listed under #8 as a required course for the suggested

Major. Later on page 4 (Honours), the Physics equivalent (PHYS 2300) is listed under #9. The course should

be listed as PHYS 2300 throughout.

Other minor comments that came up: In the "Rationale" section, there is a missing period after "...and climate". Also in this section, "Memorial's University" should be changed to "Memorial University's". Also in "Rationale", "This unique program" should probably be changed to "These unique programs" to be consistent with the remainder of the section. In the "Honours" section, they state that the Honours students would be supervised by Department of Physics and Physical Oceanography faculty members. They may want to broaden this to other relevant departments.

All the best

Annie

Best regards

Garth

-----Original Message-----

From: Rouleau, Pierre [mailto:prouleau@grenfell.mun.ca]

Sent: March-14-17 3:15 AM

To: Martin Plumer

Subject: RE: Consulation: New programs in Ocean Physics.

Dear Martin:

I have reviewed this proposal for these two new B.Sc programs in physics, with a focus on ocean physics. At the outset, I say that it is about time to offer such a focus for the very reasons that are stated in the rationales of the proposals. Both proposed programs have a high potential of attracting students to physics.

Here are some comments:

1. In both rationales, I would not claim that "Such a program does not yet exist within Canadian universities, with the possible exception of the BSc in Physical Oceanography program offered at UBC." Such programs, both major and honours, do exist at the University of British Columbia and at the University of Victoria as well, and have been offered for some time.
2. The knowledge taught through the UBC program is essentially identical to that captured by both of the proposed programs. On the whole, it differs only in the titles and descriptions of the courses therein, with titles that better convey, somewhat, the various connections with the disciplines of meteorology and atmospheric science. The physical oceanography and environmental physics components of the proposals, however, do indeed provide a solid foundation that includes essential aspects of these disciplines. Perhaps there is a way to make these connections more visible.
3. I would strongly recommend to the ocean-physics majors to opt for either PHYS 3800 or, especially, PHYS 4340. Perhaps one of these courses should be mandatory for the majors, as they include numerical techniques, the "bread-and-butter" of the practicing applied physicists.
4. I find the honours program quite solid. I think graduates therefrom will likely be competitive on the job market, and well-prepared for graduate studies.

Regards,

Pierre-M.

From: Martin Plumer [plumer@mun.ca]
Sent: March-06-17 10:56 AM
To: 'Travis Fridgen'
Cc: 'Physics'
Subject: RE: Consultation: New programs in Ocean Physics.
Attachments: Physics Programs Calendar Changes_forFoS_v2.docx

Thanks for the comments Travis.

The program was designed so students could decide in 3rd year if they want to do a regular honours or ocean physics honours.

This would likely be based on who is supervising their honours project.

We have proposed modifications to the regular honours in physics (sent out for consultation on Nov. 28 – see attached – comments welcome) that should fix the discrepancies you noted.

Best,
Martin

From: Travis Fridgen [mailto:chemhead@mun.ca]
Sent: March-04-17 12:45 PM
To: Martin Plumer
Subject: Re: Consultation: New programs in Ocean Physics.

Hi Martin,

It looks like an excellent packaging of existing courses to obtain a degree that no one else in Canada offers.

I do note that during a regular Physics Honours a student must take 4 3rd and 4th year physics courses which could be 3300, 3340, 4300, and 4340. They would then be shy only four courses (2300, 4205, Stats 2550, and one ocean sciences course) which they could take as four of their five electives.

The question is, in that scenario, which degree would they be recommended to graduate with? Another thing I just noticed; in 9.10.3 Honours in Physics. If I count up the courses required, there are 41 for the Honours degree. I think it might be a typo because in 9.10.3.9 it says Fifteen credit hours in applicable electives courses but in your recommended schedule below there are only four electives listed, one in first year, two in second year, and one in fourth year.

Take care,
Travis

Hi Martin,

Hard to explain regarding the grouping. I used your file and grouped the courses. If there is a rationale for keeping it as it was that's all good. Just not obvious in the original groupings.

Derek Howse

Division of Academic and Student Affairs Fisheries and Marine Institute of Memorial University of
Newfoundland

Telephone: 709-778-0586

Fax: 709-778-0394

Email: Derek.howse@mi.mun.ca<<mailto:derek.howse@mi.mun.ca>>

From: Martin Plumer <plumer@mun.ca>

Date: Thursday, March 9, 2017 at 9:57 AM

To: MIUG Consultations <MIUGconsultations@mi.mun.ca>

Subject: RE: Consulation: New programs in Ocean Physics.

Derek,

Thanks for the note.

We did think about most of these items.

- We decided to not include OSCS 1000 since OSCS 2100 can be taken without it.
If students want to take 2000 or 2200 they should have enough flexibility in their schedule to take 1000.
We leave it for them to decide.

However, we have modified the proposal to included a new sentence in the notes section at the bottom of the list of courses which mentions this PR (attached).

- The format of separated subject areas is used in all of our program descriptions, which we believe helps students identify different degree components.
- Major programs have a limit of 15 subject (physics) courses so we used the cross-listing of OSCS 2300 and PHYS 2300 so that this limit is not exceeded.

There was no such issue for the Honours degree.

- Not sure what is the issue with ordering of the course areas.
- We do have a graduate course on acoustics which honours students would be able to take.
Our students do learn a lot of acoustics and optics on the physics side but so far for the undergraduate program we do not see it as critical or, given our resources, possible. There are other possible areas that we could include but there are also practical limits to how much we can really offer.

Martin

From: Dawn King [<mailto:Dawn.King@mi.mun.ca>] On Behalf Of MIUG Consultations

Sent: March-07-17 3:18 PM

To: Martin Plumer

Subject: RE: Consulation: New programs in Ocean Physics.

Martin,

Thank you for the opportunity to review and comment on the proposed new programs in Ocean Physics.

These programs will have no impact on the programs at the Marine Institute. We are happy to support this proposal.

Some comments:

- OCSC 1000 is the prerequisite for OCSC 2000 and OCSC 2200. OCSC 1000 is not listed in the prescribed program. Is this an oversight?
- Why have courses within subject areas been separated into different points? E.g. Mathematics, Physics, Ocean Sciences. It doesn't appear that you are suggesting any sort of order.
- Physics 2300 and OCSC 2300 are the same course; one is listed in the major and the other in the honours. Why?
- Be consistent with the ordering of the course areas.
- It is suggested that a degree in ocean physics might benefit from inclusion of underwater acoustics course in the upper levels of the program.

All the best,
Derek

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