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, February 17, 2016, at 1 p.m. in C-2045.

AGENDA

1. Regrets

2. Adoption of the Minutes of January 20, 2016

3. Business Arising from the Minutes

4. Correspondence:
   Letter from Senate Committee on Undergraduate Studies requesting feedback on a review of timelines for readmission appeals and retroactive drops and withdrawals, and response from Faculty of Science Undergraduate Studies Committee, paper 4 (5 pages).

5. Reports of Standing Committees:
   A. Undergraduate Studies Committee:
      a. Department of Physics and Physical Oceanography, calendar changes, paper 5.A.a (75 pages).
      b. Department of Biochemistry, calendar changes, paper 5.A.b (8 pages).
   B. Graduate Studies Committee: None
   C. Nominating Committee: None
   D. Library Committee: None

6. Reports of Chair in Teaching & Learning and Embedded DELTS Teaching Consultant

7. Faculty of Science Strategic Plan - Annual Approval, paper 8 (5 pages).

8. Reports of Delegates from Other Councils


10. Question Period

11. Adjournment

Mark Abrahams
Dean of Science
FACULTY OF SCIENCE
FACULTY COUNCIL OF SCIENCE
MINUTES OF MEETING OF JANUARY 20, 2016

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, January 20, 2016, at 1:00 p.m. in room C-2045.

FSC 2395 Present
Biochemistry
Berry, M. Mulligan, M.

Biology
Marino, P.

Chemistry
Bottaro, C. Fridgen, T.

Computer Science
Bungay, S. Lu, S.W. Shieh, J.S. Warcham, T.

Earth Sciences
Hanchar, J.

Mathematics & Statistics

Ocean Sciences
Fletcher, G. Gagnon, P.

Physics & Physical Oceanography
Eevtigneev, M. Lagowski, J. Morrow, M.

Psychology
Neath, I.

Dean of Science
Abrahams, M. Foss, K. Foster, A. Mackenzie, T.
Rideout, J.

Economics
Waples, J.
DELTS
Todd, A.

Library
Ambi, A.

Education
Stordy, M.

Arts
Finnis, J.

School of Music
Cook, N.

Faculty of Business
Clift, T.

FSC 2396  Regrets
Xili Duan       Jillian Westcott       Len Zedel

FSC 2397  Adoption of Minutes
Moved: Minutes of the December 9, 2015, meeting be adopted noting the
addendum to the previous agenda of additional pages regarding the proposed new
curriculum in Computer Science (Sullivan/Wareham).  Carried.

FSC 2398  Business Arising:
At our last Science council meeting, a new curriculum for the Department of
Computer Science was approved. Additional resources will be required for full
implementation of this curriculum. The Head of Computer Science has confirmed
that additional resources will not be required until the 2018-2019 academic year.
As the Dean cannot confirm availability of those resources, he has advised senate
to approve the core courses only. Once the additional teaching resources are
confirmed, senate may then consider the rest of the proposal.

FSC 2399  Correspondence:  None

FSC 2400  Reports of Standing Committees:

A.  Undergraduate Studies Committee
Shannon Sullivan, Chair, Undergraduate Studies Committee, reminded
council that preparation of calendar changes for the 2017/2018 calendar
should be underway in order to meet the deadline in the Fall semester.
B. Graduate Studies Committee:
Report presented by J.C. Loredo-Osti, Chair, Graduate Studies Committee. It was noted that the attached papers actually included two items for approval.

a. Moved: Department of Psychology, calendar changes (Loredo-Osti/Neath). Carried.

b. Moved: Department of Psychology, proposal for new course, PSYC 7032 (Loredo-Osti/Neath). Carried. One Abstention.

C. Nominating Committee: None

D. Library Committee: None

FSC 2401 Reports of Chair in Teaching & Learning and Embedded DELTS Teaching Consultant
Danny Dyer, Chair, Teaching & Learning for the Faculty of Science, reported about activities he has undertaken thus far in the position. He noted that all faculties and schools were provided with one Chair in Teaching & Learning regardless of their size so it may not be possible for him to concentrate on the entire Faculty of Science. He plans to explore options within the Math & Stats department that can be expanded to other departments. Also, graduate training opportunities are being created within Math & Stats in hopes of having a certification program that can be expanded to other units. Faculty should feel free to contact the Chair to discuss any ideas they may have. Faculty are also encouraged to submit applications for the current Teaching & Learning Framework competition. The total amount of funding available is $550,000. Finally, it was noted that there is an invited speaker, David Goldberg, who will present, “What’s Love Got to Do With It? Educating the Professional of the Future”, on January 20 at 7 p.m. in EN2006.

Amy Todd, Embedded Teaching Consultant with the Faculty of Science and DELTS, was introduced to Council. Her role is to develop new teaching initiatives in consultation with faculty members. She mentioned that DELTS is encouraging faculty to incorporate blended learning in their courses and to consider whether new courses being developed fit within a blended definition. She reiterated that the Teaching & Learning Framework competition is now open and added that this funding is only available until 2017. Proposed projects can be for one or two years. The process has changed this year with a Letter of Intent due by March 1, 2016, and full proposals required after this initial screening.

Finally, Council was reminded that the nomination period for the President’s Award in Teaching and Learning will open on February 8, 2016.

FSC 2402 Presentation on Software for Tracking Library Journals
Mykhaylo Evstigneev, the Library Committee representative from the Department of Physics and Physical Oceanography, demonstrated software that was created within the department for the use of all Science faculty to rate the importance of journals. The financial difficulties being faced by the Library is resulting in the deletion of journal bundles which are being replaced with individual journal
subscriptions. There is a requirement, therefore, to provide accurate feedback to the Library about which journals should be purchased. Previously, the feedback method was a time consuming, manual procedure. This software provides a standardized ranking system and gives greater flexibility when assessing the essential nature of journals. The software can be found at www.physics.mun.ca/journalweb.

FSC 2403 Reports of Delegates from Other Councils: None

FSC 2404 Report of the Dean

Presented by Mark Abrahams, Dean.

The recruitment process began about eight months ago for a second position in grants facilitation to assist with the growing workload in the Faculty of Science. The Dean is pleased to announce that we were successful in this effort and that Dr. Scott Harding will be beginning this role on February 15.

As is now becoming clearly visible, work on the new Science building is progressing. It is expected that the tender will be issued for the major construction contracts in the Spring which conforms to the timelines for this project.

As a follow-up to the last report, Dr. Andy Foster, Associate Dean (Undergraduate and Administration), has met with representatives from the Grenfell campus to discuss the issue of student mobility and course equivalency. He will be seeking input from different departments to provide specific information that will focus further discussion.

At a recent Deans’ Council meeting, it was announced that the university’s Chief Information Officer (Shelley Smith) has been working with Engineering to develop a university-wide enterprise license for Matlab. The Dean is not aware whether faculty in Science have been consulted on this but, if not, it would be good to make contact with Ms. Smith.

FSC 2405 Question Period

FSC 2406 Adjournment

The meeting adjourned at 1:38 p.m.
February 8, 2015

TO: All Members, Faculty Council of Science

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

SUBJECT: Calendar Changes and Response to Proposal from Senate Committee on Undergraduate Studies

At a meeting held on February 1, 2016, the Undergraduate Studies Committee of the Faculty of Science agreed that the following items be forwarded to Faculty Council for approval:

1. Department of Physics and Physical Oceanography
   - Changes to course descriptions, including changes to some prerequisites, for twelve existing courses.

2. Department of Biochemistry
   - Proposal to reduce the number of credit hours required for the joint honours program in Biochemistry and Cell Biology from 135 to 120.

At that meeting the Committee also considered a proposal from the Senate Committee on Undergraduate Studies regarding time lines for readmission appeals and request for retroactive drops and withdrawals. The Committee agreed with most of the proposed Calendar changes put forward by SCUGS, but recommends that the proposed five-year time limit to request a retroactive drop or withdrawal be reduced to three years.

Joan Burry
Associate Registrar and
Secretary: Committee
on Undergraduate Studies,
Faculty of Science
18 November 2015

TO: Secretaries, Academic Councils, Faculties/Schools/Grenfell Campus/Marine Institute
    Student Unions (St. John's Campus, Grenfell Campus, Marine Institute, Graduate Studies)
    Student Health Services, DELTS, University Counselling Centre, Blundon Centre

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

SUBJECT: Senate Committee on Undergraduate Studies Sub-Committee to Review Timelines for Readmission
          Appeals and Retroactive Drops and Withdrawals

In 2014, the Senate Committee on Undergraduate Studies established a sub-committee to review undergraduate calendar
sections related to readmission appeals and retroactive drops and withdrawals.

The sub-committee was asked to examine whether changes with time frames for retroactive drops and withdrawals and
readmission appeals were warranted. As part of the review, the sub-committee compiled information from other Canadian
universities as well as the Special Senate Sub-Committee on Retroactive Drops and Withdrawals and Readmission
Appeals.

A final report, including recommendations, was reviewed and approved in principle by the Senate Committee on
Undergraduate Studies at a meeting held on 5 November 2015 and is now being forwarded to the university community
for consideration and feedback. The Committee is asking that a single coordinated response from each unit be forwarded
by email to scugs@mun.ca by the end of February 2016.

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

Yours truly,

Jennifer Porter
Deputy Registrar and
Secretary to the Committee

JMP/Imn

Attachment

cc: Committees on Undergraduate Studies
    Deans/Vice-Presidents
    Provost and Vice-President (Academic)
    Deputy Provost (Students) and Associate Vice-President (Academic)
    Undergraduate Studies
Proposed calendar changes stem from the following general recommendations:

1) Information on retroactive drops and withdrawals should be published in the University Calendar.
2) There should be a time limit on requests for retroactive drops and withdrawals.
3) Courses dropped retroactively should be given a unique transcript notation.
4) At least some of the period of academic dismissal must be served before a readmission appeal is allowed.
5) Deadline dates for submission of readmission appeals should be established and published in the University Calendar.

Please indicate whether or not your Academic Council supports each of the following proposed calendar changes and outline any questions or concerns your Council may have.

Proposed Calendar Change #1:

Rationale for Proposed Calendar Changes #1, #2, #3

An academic transcript is the complete and unabridged report of a student's academic record. Removing grades from transcripts should only happen in rare and exceptional circumstances. The possibility of retroactive drops and withdrawals does not appear in the Calendar, which may partly explain why students make requests after so much time has passed. Currently a DR appears on the transcript regardless of when a course is dropped (within the drop deadline, a late drop approved by an academic unit, or a retroactive drop). The introduction of a DEX more accurately reflects the exceptional circumstances under which retroactive drops should be approved. As well, it may be less attractive in those cases where students are looking to clean up an academic record. The time limit of 5 years is recommended as documentation regarding extenuating circumstances as well as documentation from instructors regarding completion of courses can be difficult, if not impossible, to obtain once so much time has passed. Five years was chosen as it reflects the normal length of an undergraduate degree.

Add the following Regulation as 6.4.6.3 Dropping Courses Retroactively (renumber the remaining clauses):

6.4.6.3 Dropping Courses Retroactively

An academic transcript is a complete and accurate reflection of a student's academic record. On rare occasions, however, a student may request to drop a course beyond the last day to add courses in the semester following the one in which the course was taken. Courses dropped in this time frame are considered to be dropped retroactively and requests will only be considered for illness, bereavement, or other acceptable cause, duly authenticated. These would be unusual circumstances beyond the student's control in cases where the course(s) was not completed. Normally, once the final exam is written the course will be considered to be completed and no retroactive drop will be possible. A poor grade is not, in and of itself, acceptable as a reason for dropping a course retroactively. A grade of DEX (Drop due to Exceptional Circumstances) will be assigned in these circumstances and will be entered on the student's record. Requests shall be submitted to the Office of the Registrar no later than five years following the last day of examinations for the semester in which the course was taken. Requests should include the following information:

Name,
Current address and telephone number,
Memorial University email address,
Student ID number,
Course(s) requesting to drop retroactively,
Explanation of why course(s) could not be dropped during regular timeframe,
Grounds for the request,
Supporting documentation,
Documentation from the course instructor regarding grading scheme and final grade.
Proposed Calendar Change #2:

Add the following Regulation as 6.4.7.3 Withdrawing from the University Retroactively (renumber the remaining clauses):

6.4.7.3 Withdrawing from the University Retroactively

An academic transcript is a complete and accurate reflection of a student’s academic record. On rare occasions, however, a student may request to withdraw from a semester beyond the last day to add courses in the semester following the one in which the courses were taken. A withdrawal in this time frame is considered to be a retroactive withdrawal and requests will only be considered for illness, bereavement, or other acceptable cause, duly authenticated. These would be unusual circumstances beyond the student’s control in cases where the courses were not completed. Normally, once final exams are written the semester will be considered to be completed and no retroactive withdrawal will be possible. Poor grades are not, in and of themselves, acceptable as a reason for withdrawing retroactively. A grade of DEX (Drop due to Exceptional Circumstances) will be assigned in these circumstances and will be entered on the student’s record. Requests shall be submitted to the Office of the Registrar no later than five years following the last day of examinations for the semester in which the courses were taken. Requests should include the following information:

Name,
Current address and telephone number,
Memorial University email address,
Student ID number,
Semester(s) requesting to withdraw retroactively,
Explanation of why course(s) could not be dropped during regular time frame,
Grounds for the request,
Supporting documentation,
Documentation from the course instructors regarding grading schemes and final grades.

Proposed Calendar Change #3:

<table>
<thead>
<tr>
<th>Letter Grades</th>
<th>Numeric Grades</th>
<th>Points Per Credit Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>80-100%</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>65-79%</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>55-64%</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>50-54%</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>below 50%</td>
<td>0</td>
</tr>
<tr>
<td>PWD (pass with distinction) - indicates excellent performance</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>PAS (pass) - indicates performance meets expectations</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>FAL (fail) - indicates failing performance</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>DEX (drop) - drop without academic prejudice (exceptional circumstances)</td>
<td>No numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>DR (drop) - drop without academic prejudice</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>DRF (drop fail) - drop with academic prejudice</td>
<td>0%</td>
<td>0</td>
</tr>
<tr>
<td>ABS (absent) - absent for acceptable cause</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>INC (incomplete) - incomplete pending final grade</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>AEG (aegrotat)</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
<tr>
<td>REX (re-examination)</td>
<td>no numeric grade</td>
<td>not applicable</td>
</tr>
</tbody>
</table>
Proposed Calendar Change #4:

Rationale for Proposed Calendar Change #4

Memorial is committed to supporting the academic success of its students. A required academic withdrawal is not meant to be punitive but to allow time for whatever issues have caused the poor performance to be resolved. Deadlines to submit an appeal are recommended to ensure there is time for the appeal to be heard by the appropriate committee(s) and have a decision made in sufficient time for the student to be assigned a registration window time, review the course offerings and register for courses while availability exists. Without appropriate deadlines we are seeing appeals for readmissions being submitted just before the start of a semester, or in some cases, into the semester itself. Having students fully registered and in a position to attend classes at the start of the semester will help to ensure they are in the best position to succeed.

Add the following as #4 of Regulation 6.10.3 (renumber the remaining clauses):

4. In very exceptional circumstances, a student who has been required to withdraw under Eligibility for Continuance-Academic Criteria for Continuance in the University may be permitted to return to the university without serving their full period of dismissal. However, this is possible only once a student has served at least one-half of the required dismissal period. An appeal for readmission will only be considered in the case of health issues, bereavement and/or other acceptable cause, duly authenticated. All appeals must be made in writing to the Office of the Registrar no later than January 31 for Spring semester, May 31 for Fall semester and September 30 for Winter semester.

Appeals should include the following information:

Name,
Current address and telephone number,
Memorial University email address,
Student ID number,
Semester to which student is seeking readmission
Grounds for the request,
Supporting documentation.

Additional Question for Feedback:

For students who have been required to withdraw under the Eligibility for Continuance-Academic Criteria for Continuance in the University, should there be a limit to the number of times a student may be permitted to make a request for early readmission? If yes, what number of times is appropriate?
February 8, 2015

TO: All Members, Faculty Council of Science
FROM: Joan Burry, Secretary
Committee on Undergraduate Studies, Faculty of Science
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Joan Burry
Associate Registrar and
Secretary: Committee
on Undergraduate Studies,
Faculty of Science
Proposal from the Department of Physics and Physical Oceanography to Several Amend Course Calendar Entries

The Department of Physics and Physical Oceanography has initiated a review of all of its undergraduate course calendar entries.

These will be submitted for consultation and approval in blocks of 2-5 courses, by subject area, over the coming months.

Attached are amendment proposals for three courses: PHYS 2151, PHYS 3150 and PHYS 3151. Feedback is requested by Dec. 7, 2015.

Thank you.
Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantai@mun.ca).
November 23, 2015.
Proposal
Amend Calendar Entry PHYS 2151

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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

Physics 2151 Stellar Astronomy and Astrophysics

Abbreviated Course Title

Stellar Astronomy and Astrophysics

Calendar Change(s)

2151 Stellar Astronomy and Astrophysics covers atomic structure and spectra. The sun: radiation, energetics, magnetic field. Stars: distance, velocity, size, atmospheres, interiors. Variable stars, multiple stars, clusters, and stellar associations. Stellar evolution, interstellar matter, structure of the Milky Way Galaxy. Exterior galaxies, quasi-stellar objects, pulsars. Cosmology: introduces concepts in modern astronomy including: the celestial sphere, eclipses, parallax, and Kepler's laws; radiation: the Sun; spectroscopy; telescopes, resolution, and detectors; magnitudes, spectral classifications, and the Hertzsprung-Russell diagram; the interstellar medium, star formation, stellar evolution, nucleosynthesis, white dwarfs, neutron stars, pulsars, nebulae, supernovae, black holes, and gamma-ray bursts; galaxies, dark matter, and active galactic nuclei; cosmology, the cosmic microwave background, inflation and dark energy; and the search for extraterrestrial intelligence.

PR: 6 credit hours in Mathematics courses at the first year level

Rationale

Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Library Report Received


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
Amend Calendar Entry PHYS 3150

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

Signature of Unit Head (if appropriate):

Date:

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

Date:
3150 Astrophysics I is a review of macroscopic and microscopic physics. The sun: luminosity, mass, spectrum, photosphere, corona, interior. Principles of stellar structure; radiative and convective transport of energy. The virial theorem. Thermonuclear fusion; temperature dependence; the solar neutrino problem. Nucleosynthesis; the curve of binding energy; the synthesis of heavy elements. White dwarfs, neutron stars, and black holes; degenerate electron and neutron gases; Chandrasekhar’s Limit. Population I and Population II stars; the Hertzsprung-Russell diagram; relationships among luminosity, mass, and effective temperature for main sequence dwarfs. Evolution of post-main-sequence stars. covers macroscopic and microscopic physics related to stellar structure, energy production, and evolution. This includes stellar observables, gravity and other forces, the Virial Theorem, light and matter in stars, stellar spectra and classification, Hertzsprung-Russell diagrams and properties of main sequence dwarf stars, radiation in the stellar atmosphere, structural relationships and stellar models, energy sources and energy transport in stars, star formation and stellar evolution, nucleosynthesis, variable stars, Chandrasekhar’s limit, and degenerate remnants.

PR: PHYS 2053, 2750 (or 2056), and 2820
CR: PHYS 3160

Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course. PHYS 3160 is a Grenfell course that currently has a CR for 3150.
Consultations Sought From

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

Comments Received

Library Report Received

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

Name

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FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Proposal
Amend Calendar Entry PHYS 3151

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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
Physics 3151 Astrophysics II

Abbreviated Course Title
Astrophysics II

Calendar Change(s)

3151 Astrophysics II covers stellar spectra and classification of stars, Hertzsprung-Russell diagram, equations of stellar structure for a star in equilibrium, temperature and density dependencies of nuclear processes, Formation and classification of binary stars, mass and energy transfer in binary star systems, semidetached binaries, cataclysmic variables, pulsars, etc. Galaxies and galactic structure, active galactic nuclei, cosmological redshift. Cosmology deals with galactic and cosmological scale astrophysics. Topics include: galaxies including Hubble classification, dark matter, and structure of the Milky Way Galaxy; globular and open star clusters; compact objects including compact binary systems, novas and supernovas, pulsars and magnetars, X-ray binaries; black holes, active galactic nuclei, quasars, the Lyman forest, and the Gunn-Peterson trough; and cosmology including the cosmic microwave background, the FLRW metric, the Friedmann equations, cosmological expansion, and dark energy.

PR: PHYS 3150 and 3220
CR: PHYS 3160

Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course. PHYS 3160 is a Grenfell course that currently has a CR for 3151.
Consultations Sought From

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

Library Report Received

- 

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:
CONSULTATIONS – See attached.

1. Grenfell Campus Yes/No
2. Marine Institute Yes
3. Department of Biochemistry Yes/No
4. Department of Biology Yes/No
5. Department of Chemistry Yes
6. Department of Computer Science Yes/No
7. Department of Earth Sciences Yes/No
8. Department of Mathematics and Statistics Yes/No
9. Department of Ocean Sciences Yes/No
10. Department of Psychology Yes/No
11. Library Yes
12. Engineering Yes
From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations
[MIUGconsultations@mi.mun.ca]
Sent: November-23-15 10:47 AM
To: Martin Plumer
Subject: RE:

Dr. Plumer,
Thank you for the opportunity to review and comment on the proposed changes to the three PHYS courses 2151, 3150 and 3151.

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

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

From: Martin Plumer [mailto:plumer@mun.ca]
Sent: Monday, November 23, 2015 8:44 AM
To: 'BioChem' <biohead@mun.ca>; 'Biology' <dinnes@mun.ca>; 'Chemistry' <chemhead@mun.ca>
'Computer Science' <cs-chair@mun.ca>; 'Earth Science' <jhanchar@mun.ca>; 'Engineering' <engconsult@mun.ca>; 'Grenfell' <associatevpo@mi.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>; 'Pierre-Michel Prouleau' <prouleau@grenfell.mun.ca>; 'Psychology' <psychology.head@mun.ca>
Cc: 'Lagowski, Jolanta' <jolantal@mun.ca>
Subject:

TO: Faculty of Science, Faculty of Engineering, Marine Institute, Library, and Grenfell:
Attached are minor amendment proposals for three physics courses: PHYS 2151, PHYS 3150 and PHYS 3151.
Feedback is requested by Dec. 7, 2015.
Thank you.
Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantal@mun.ca).
November 23, 2015
Hi Martin,

No problems from Chemistry.

For both 3150 and 3151, "CR: 3160" needs to be underlined.

Take care,

T

On 23/11/2015 8:43 AM, Martin Plumer wrote:

TO: Faculty of Science, Faculty of Engineering, Marine Institute, Library, and Grenfell:

Attached are minor amendment proposals for three physics courses: PHYS 2151, PHYS 3150 and PHYS 3151.

Feedback is requested by Dec. 7, 2015.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantal@mun.ca).
November 23, 2015

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Travis D. Fridgen BSc, BEd, PhD
Professor and Head
Department of Chemistry
Memorial University
St. John's, NL, A1B 3X7
chemhead@mun.ca
709-864-3470
http://www.chem.mun.ca/zfac/tdf.php?
From: Engineering Consultations [engrconsult@mun.ca]
Sent: November-25-15 10:11 AM
To: Martin Plumer
Subject: Re: Astrophysics Courses

Dear Dr. Plumer,

Thank you for the opportunity to comment on the Calendar changes to three more Physics courses, PHYS 2151, 3150 and 3151 (Astrophysics).

Normally I present Calendar change consultation requests to the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, but the next scheduled meeting is not until January 20.

This Calendar change seems fine to me and should have no impact on our programs.

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

Quoting Martin Plumer <plumer@mun.ca>:

> TO: Faculty of Science, Faculty of Engineering, Marine Institute, Library, and Grenfell:
> Attached are minor amendment proposals for three physics courses: PHYS 2151, PHYS 3150 and PHYS 3151.
> Feedback is requested by Dec. 7, 2015.
>
>
> Thank you.
> 
> Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
> 
> Jolanta Lagowski, Head (jolantal@mun.ca).
> 
> November 23, 2015
TO: Physics & Physical Oceanography  
Martin Plumer, Chair, Undergraduate Studies Committee  
Jolanta Lagowski, Head,

FROM: Queen Elizabeth II Library Collections Division  
Alison Ambi, Science Research Liaison Librarian

DATE: December 2, 2015

RE: Calendar changes to Astrophysics courses

Upon review of the proposed calendar updates to PHYS 2151, 3150, and 3151 I have determined that the changes will have no impact on the collections activities of the Memorial University Libraries.
Proposal
Amend Calendar Entry PHYS 2151

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 2151 Stellar Astronomy and Astrophysics

Abbreviated Course Title
Stellar Astronomy and Astrophysics

Calendar Change(s)

2151 Stellar Astronomy and Astrophysics introduces concepts in modern astronomy including: the celestial sphere, eclipses, parallax, and Kepler's laws; radiation; the Sun; spectroscopy; telescopes, resolution, and detectors; magnitudes, spectral classifications, and the Hertzsprung-Russell diagram; the interstellar medium, star formation, stellar evolution, nucleosynthesis, white dwarfs, neutron stars, pulsars, nebulae, supernovae, black holes, and gamma-ray bursts; galaxies, dark matter, and active galactic nuclei; cosmology, the cosmic microwave background, inflation and dark energy; and the search for extraterrestrial intelligence.

PR: 6 credit hours in Mathematics courses at the first year level
Proposal
Amend Calendar Entry PHYS 3150

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title
Physics 3150 Astrophysics I

Abbreviated Course Title
Astrophysics I

Calendar Change(s)

3150 Astrophysics I covers macroscopic and microscopic physics related to stellar structure, energy production, and evolution. This includes stellar observables, gravity and other forces, the Virial Theorem, light and matter in stars, stellar spectra and classification, Hertzsprung-Russell diagrams and properties of main sequence dwarf stars, radiation in the stellar atmosphere, structural relationships and stellar models, energy sources and energy transport in stars, star formation and stellar evolution, nucleosynthesis, variable stars, Chandrasekhar’s limit, and degenerate remnants.

PR: PHYS 2053, 2750 (or 2056), and 2820
CR: PHYS 3160
Proposal
Amend Calendar Entry PHYS 3151

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 3151 Astrophysics II

Abbreviated Course Title
Astrophysics II

Calendar Change(s)

3151 Astrophysics II deals with galactic and cosmological scale astrophysics. Topics include: galaxies including Hubble classification, dark matter, and structure of the Milky Way Galaxy; globular and open star clusters; compact objects including compact binary systems, novas and supernovas, pulsars and magnetars, X-ray binaries; black holes, active galactic nuclei, quasars, the Lyman forest, and the Gunn-Peterson trough; and cosmology including the cosmic microwave background, the FLRW metric, the Friedmann equations, cosmological expansion, and dark energy.

PR: PHYS 3150 and 3220
CR: PHYS 3160
Proposal from the Department of Physics and Physical Oceanography to Amend Several Course Calendar Entries

The Department of Physics and Physical Oceanography has initiated a review of all of its undergraduate course calendar entries.

These will be submitted for consultation and approval in blocks of 2-5 courses, by subject area, over the coming months.

Attached are amendment proposals for two courses: PHYS 3000 and PHYS 4000. Feedback is requested by Dec. 21, 2015.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantal@mun.ca).
November 30, 2015.
Proposal
Amend Calendar Entry PHYS 3000

Executive Summary
Proposal contains minor revisions to course description and the PR.

Resource Implications: Instructional Costs

- None.

Consultations

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

Library Holdings and/or Other Resources Required

- No new Library resources required.

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

Physics 3000 Physics of Device Materials

Abbreviated Course Title

Physics of Device Materials

Calendar Change(s)

3000 Physics of Device Materials is structures of crystalline and amorphous solids. Excitations and transport in metals, semiconductors, and dielectrics; electronic band structures. Physics of multi-material devices including photodiodes, solid state lasers, and field-effect transistors. an introduction to the physics of materials, particularly group IV and III-V semiconductors, used in common technological devices. It covers fundamental concepts including structures of crystalline solids, quantum mechanics and statistical mechanics of charge carriers, equilibrium charge carrier concentrations, carrier transport and excess carrier phenomena. These concepts are applied to multi-material devices including pn and metal semiconductor junctions, metal-oxide-semiconductor field-effect transistors, photovoltaic devices, light-emitting diodes, and solid-state lasers.

PR: PHYS 2055 1051 or registration in Academic Term 3 of the Electrical Engineering Program

Rationale

Course description was out of date. The proposed wording better reflects what is currently being taught in the course. The course content and level has changed such that the original PR, PHYS 2055 (Electricity and Magnetism), is no longer relevant. The first-year physics course PHYS 1051 is now viewed as being the appropriate PR, which is required by all students in Electrical Engineering.
Consultations Sought From

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

Comments Received

Library Report Received

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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Proposal
Amend Calendar Entry PHYS 4000

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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
Physics 4000 Introduction to Solid State Physics

Abbreviated Course Title
Solid State Physics

Calendar Change(s)

4000 Introduction to Solid State Physics covers crystal structure and binding, phonons and lattice vibrations, thermal properties of solids. Electrons in solids, energy bands, semi-conductors, superconductivity, dielectric properties. Magnetic properties of solids. A focus on the relation between structure and physical properties in crystalline materials. An introduction to crystal structure addresses symmetry and reciprocal space. Phonons and lattice vibrations are linked with thermal properties of solids. Electrons in solids, including energy bands and semiconductors, lead to discussions of transport in solids.

PR: PHYS 3400 and PHYS 3750 or waiver approved by the instructor

Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Comments Received

Library Report Received

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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

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

Looks fine to me.

T

On 30/11/2015 8:57 AM, Martin Plumer wrote:
Dear Colleagues,

Attached are amendment proposals for two courses: PHYS 3000 and PHYS 4000.

Feedback is requested by Dec. 21, 2015.

Thank you.
Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantah@mun.ca).

--
Travis D. Fridgen BSc, BEd, PhD
Professor and Head
Department of Chemistry
Memorial University
St. John's, NL, A1B 3X7
chemhead@mun.ca
709-864-3470
http://www.chem.mun.ca/zfac/tdf.php

Dr. Plumer,

Thank you for the opportunity to review and comment on the changes to the outlines for PHYS 3000 and 4000.

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

Derek

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

The proposed amendments look fine to us, and will not affect any programs offered at the Department of Ocean Sciences.

Best regards,
Annie
Chair, Undergraduate Studies Committee

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

On 02/12/2015 2:21 PM, Fletcher, Garth wrote:
Hi Annie: Could your committee look after this request please.
Regards
Garth

From: Martin Plumer [mailto:plumer@mun.ca]
Sent: November-30-15 9:00 AM
To: Biochemistry Head; 'Biology'; 'Chemistry'; 'Computer Science'; 'Earth Science'; 'Engineering'; 'Grenfell'; Ambi, Alison; 'Marine Ins.'; 'Math'; Fletcher, Garth; Lagowski, Jolanta; 'Pierre-Michel Prouleau '; 'Psychology'
Subject: Consultation: PHYS 3000 and PHYS 4000.

Dear Colleagues,

Attached are amendment proposals for two courses: PHYS 3000 and PHYS 4000.

Feedback is requested by Dec. 21, 2015.

Thank you.
Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolanta@mun.ca).
Dear Dr. Plumer,

Thank you for the update. We agree with the amended proposal. For your information, the opinion of Dr. Quaicoe (Term 4 ECE instructor) is below.

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

----- Forwarded message from "Quaicoe, John" <jquaicoe@mun.ca> -----  
Date: Sat, 12 Dec 2015 15:42:22 +0000  
From: "Quaicoe, John" <jquaicoe@mun.ca>  
Reply-To: "Quaicoe, John" <jquaicoe@mun.ca>  
Subject: RE: RE: Consultation: PHYS 3000 and PHYS 4000.  
To: Engineering Consultations <engrconsult@mun.ca>, "dpeters@mun.ca" <dpe:ers@mun.ca>

Hi Glyn,

The proposed change sounds good. I agree that explicitly mentioning Gallium Arsenide materials/devices in the calendar description will be too restrictive. I like the change to the general description which includes group IV and group III-IV materials.

John

-----Original Message-----  
From: Engineering Consultations [mailto:engrconsult@mun.ca]  
Sent: December-10-15 8:05 AM  
To: dpeters@mun.ca, Quaicoe, John  
Cc: Fisher, Andrew  
Subject: Fwd: RE: Consultation: PHYS 3000 and PHYS 4000.

Dennis and John,

The reply from Physics on PHYS 3000 & 4000 is below.

Are these changes acceptable?

Glyn.

--

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

----- Forwarded message from Martin Plumer <plumer@mun.ca> -----  
Date: Wed, 9 Dec 2015 10:33:33 -0300  
From: Martin Plumer <plumer@mun.ca>  
Reply-To: Martin Plumer <plumer@mun.ca>  
Subject: RE: Consultation: PHYS 3000 and PHYS 4000.  
To: 'Engineering Consultations' <engrconsult@mun.ca>
Hi Glyn,

We discussed your suggestions and will revise our proposal.

The instructor for PHYS 3000 says that the course deals with the properties of Semiconductors, particularly Si, Ge, and GaAs, and how those properties are applied in a range of devices. GaAs and GaAs devices are referenced throughout the course and making specific reference (in the calendar) to GaAs based devices in a particular part of the course was seen as being overly restrictive.

GaAs is only part of the story for modern optical devices. To get all of the different LED colours, it is necessary to use many combinations of III-V semiconductors and for solar cells and other optical devices.

We propose to modify the calendar description as follows.

- Change the first sentence of the calendar description, after materials, to say "particularly group IV and III-V semiconductors."

- Change the PR to be simply "PHYS 1051."

Please let me know if these changes seems okay.

Note we are planning to soon review all of our programs, and we hope to initiate discussions with your Faculty regarding reciprocal minors (Electrical, and also perhaps Mechanical) as Chemistry has recently done.

We can address the wording of section 9.10.1 at that time.

Best,
Martin

-----Original Message-----
From: Engineering Consultations [mailto:engrconsult@mun.ca]
Sent: December-07-15 10:59 AM
To: Martin Plumer
Cc: dpeters@mun.ca; Andrew Fisher
Subject: Re: Consultation: PHYS 3000 and PHYS 4000.

Dear Dr. Plumer,

Thank you for the opportunity to comment on the Calendar changes to two more Physics courses, PHYS 3000 and 4000.

Normally I present Calendar change consultation requests to the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science, but the next scheduled meeting is not until January 20. Instead the consultation request was forwarded to faculty members in the Department of Electrical and Computer Engineering.

PHYS 3000 is a required course in Term 3 of both the Computer Engineering and Electrical Engineering majors. The change in prerequisite to PHYS 1051 makes the other prerequisite "or registration in Academic Term 3 of the Electrical Engineering Program" redundant. PHYS 1051 is a prerequisite to Term 3 of all Engineering majors.

The prerequisite should be shortened to "PR: PHYS 1051" only.

The revised course description does seem to be more in line with the current offering of the course, as the rationale indicates.
One of our instructors in Term 4 ECE notes that students appear to have adequate background preparation and knowledge of the physics of electronic devices. However gallium-arsenide devices could be added to the description and coverage, given that these devices are increasingly being used in high-speed digital and analog applications.

PHYS 4000 is an elective course for Electrical Engineering majors who choose to take a minor in Physics. It has no other impact on our programs. We have no comment on PHYS 4000.

By the way, I have noticed an editorial change that has been missed in the Physics section of the Calendar: in the last line of Physics Regulation 9.10.1 "Minor in Physics", replace "Chair of" by "Head of the Department of".

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

Quoting Martin Plumer <plumer@mun.ca>:

> Dear Colleagues,
>
> >
>
> > Attached are amendment proposals for two courses: PHYS 3000 and PHYS 4000.
>
> >
>
> > Feedback is requested by Dec. 21, 2015.
>
> >
>
> > Thank you.
>
> > Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
>
> > Jolanta Lagowski, Head (jolantal@mun.ca).
TO: Physics & Physical Oceanography
Martin Plumer, Chair, Undergraduate Studies Committee
Jolanta Lagowski, Head,
FROM: Queen Elizabeth II Library Collections Division
Alison Ambi, Science Research Liaison Librarian
DATE: December 2, 2015
RE: Calendar changes to Physics courses
Upon review of the proposed calendar updates to PHYS 3000 and PHYS 4000 I have determined that the changes will have no impact on the collections activities of the Memorial University Libraries.
Proposal
Amend Calendar Entry PHYS 3000

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 3000 Physics of Device Materials

Abbreviated Course Title
Physics of Device Materials

Calendar Change(s)

3000 Physics of Device Materials is an introduction to the physics of materials, particularly group IV and III-V semiconductors, used in common technological devices. It covers fundamental concepts including structures of crystalline solids, quantum mechanics and statistical mechanics of charge carriers, equilibrium charge carrier concentrations, carrier transport and excess carrier phenomena. These concepts are applied to multi-material devices including pn and metal semiconductor junctions, metal-oxide-semiconductor field-effect transistors, photovoltaic devices, light-emitting diodes, and solid-state lasers.

PR: PHYS 1051
Proposal
Amend Calendar Entry PHYS 4000

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 4000 Introduction to Solid State Physics

Abbreviated Course Title
Solid State Physics

Calendar Change(s)

4000 Introduction to Solid State Physics focuses on the relation between structure and physical properties in crystalline materials. An introduction to crystal structure addresses symmetry and reciprocal space. Phonons and lattice vibrations are linked with thermal properties of solids. Electrons in solids, including energy bands and semiconductors, lead to discussions of transport in solids.

PR: PHYS 3400 and PHYS 3750
Proposal from the Department of Physics and Physical Oceanography to Several Amend Course Calendar Entries

The Department of Physics and Physical Oceanography has initiated a review of all of its undergraduate course calendar entries.

These will be submitted for consultation and approval in blocks of 2-5 courses, by subject area, over the coming months.

Attached are amendment proposals for two courses: PHYS 3900 and PHYS 4900. Feedback is requested by Jan. 25, 2015.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantal@mun.ca).
Proposal
Amend Calendar Entry PHYS 3900

Executive Summary
Proposal contains minor revisions to course description, course title and PR.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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

Physics 3900 Physics Laboratory I

Abbreviated Course Title

Experimental Physics I

Calendar Change(s)

3900 Physics Laboratory I is a selection of experiments based primarily on material covered in the third-year courses. Experimental Physics I develops experimental, analytical, and communications skills through extended experiments in fields of physics including optics, magnetism, fluids, spectroscopy, materials characterization, and modern physics. Students select from a range of experiments that illustrate concepts encountered in previous courses to apply existing knowledge and problem solving skills, while other experiments introduce more advanced techniques and phenomena.

PR: at least two of PHYS 2053, 2820, 2055, and PHYS 2750 (or 2056)
LH: 6
LC: 0
CR: PHYS 4880

Rationale

Course title and description are out of date. The proposed wording better reflects what is currently being taught in the course. Course consists of six lab hours per week and no class lectures. CR PHYS 4880 reflects a similar course offered at Grenfell.
Consultations Sought From

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

Library Report Received


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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Proposal
Amend Calendar Entry PHYS 4900

Executive Summary
Proposal contains minor revisions to course description and title.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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
4900 Physics Laboratory II

Abbreviated Course Title
Experimental Physics II

Calendar Change(s)

4900 Physics Laboratory II is a selection of experiments at the senior level. Experimental Physics II builds on the skills developed in Experimental Physics I through advanced and open-ended experiments in fields of physics including optics, magnetism, fluids, spectroscopy, materials characterization, and modern physics.
LH: 6
LC: 0
PR: PHYS 3900

Rationale
Course title and description are out of date. The proposed wording better reflects what is currently being taught in the course. Course consists of six lab hours per week and no class lectures.
Consultations Sought From

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

Library Report Received


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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
1. Grenfell Campus
2. Marine Institute
3. Department of Biochemistry
4. Department of Biology
5. Department of Chemistry
6. Department of Computer Science
7. Department of Earth Sciences
8. Department of Ocean Sciences
9. Department of Psychology
10. Department of Mathematics and Statistics
11. Library
12. Engineering
From: Engineering Consultations [engrconsult@mun.ca]

Sent: January-21-16 8:31 AM

To: Martin Plumer

Subject: Re: Consultation PHYS 2053, 3400, 3900 & 4900

Dear Dr. Plumer,

Thank you for the opportunity to comment on the Calendar changes to four more Physics courses, PHYS 2053, 3400, 3900 and 4900.

At its meeting of January 20, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science determined that these proposed changes should have no impact on our programs.

Yours sincerely,

Dr. Glyn George, Chair

Committee on Undergraduate Studies

Faculty of Engineering and Applied Science Memorial University of Newfoundland

St. John's NL Canada A1B 3X5
From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations [MIUGconsultations@mi.mun.ca]
Sent: December 14-15 11:26 AM
To: Martin Plumer
Subject: RE: proposed calendar changes PHYS 3900 and 4900

Dr. Plumer,

Thank you for the opportunity to review and comment on the proposed course description changes for PHYS 3900 and 4900.

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

One suggestion would be to reference the course name “Experimental Physics I” in the description of PHYS 4900 instead of the course number “PHYS 3900” as this provides a better sense of course continuity for the reader.

Derek
Derek Howse
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0586
FAX: 709-778-0394
Derek.Howse@mi.mun.ca
From: Fletcher, Garth [fletcher@mun.ca]
Sent: December-15-15 11:35 AM
To: plumer@mun.ca
Subject: FW: FW: proposed calendar changes PHYS 3900 and 4900

Hi Martin: I am forwarding Annie’s response to your proposals regarding PHYS 3900 and 4900. Apart from that every think is fine with Ocean Sciences.

Regards

Garth

From: Annie Mercier [mailto:amercier@mun.ca]
Sent: December-15-15 7:47 AM
To: Fletcher, Garth
Subject: Re: FW: proposed calendar changes PHYS 3900 and 4900

Hi Garth:

I have a few comments for the one you attach here:

- There seems to be a discrepancy between the title and abbreviated title for PHYS 3900 (Physics Laboratory I vs. Experimental Physics I)
- The same goes for PHYS 4900 (Physics Laboratory II vs. Experimental Physics II)

Cheers,
Annie
Sent: December-18-15 9:51 AM  
To: Martin Plumer  
Subject: RE: proposed calendar changes PHYS 3900 and 4900

Hi Martin

No concerns from Biochemistry (for either these or the previous batch). Good luck with the changes.

Mark

Mark D. Berry Ph.D.  
Professor and Head  
Dept. Biochemistry  
Memorial University of Newfoundland  
St. John's, NL, Canada  
A1B 3X9

Tel: 709-864-8529  
E-mail: mberry@mun.ca; biochead@mun.ca
Proposal
Amend Calendar Entry PHYS 3900

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 3900 Physics Laboratory I

Abbreviated Course Title
Experimental Physics I

Calendar Change(s)

3900 Experimental Physics I develops experimental, analytical, and communications skills through extended experiments in fields of physics including optics, magnetism, fluids, spectroscopy, materials characterization, and modern physics. Students select from a range of experiments that illustrate concepts encountered in previous courses to apply existing knowledge and problem solving skills, while other experiments introduce more advanced techniques and phenomena.

PR: at least two of PHYS 2053, 2820, 2055, and PHYS 2750
LH: 6
LC: 0
CR: PHYS 4880
Proposal
Amend Calendar Entry PHYS 4900

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
4900 Physics Laboratory II

Abbreviated Course Title
Experimental Physics II

Calendar Change(s)
4900 Experimental Physics II builds on the skills developed in Experimental Physics I through advanced and open-ended experiments in fields of physics including optics, magnetism, fluids, spectroscopy, materials characterization, and modern physics.

PR: PHYS 3900
LH: 6
LC: 0
Proposal from the Department of Physics and Physical Oceanography to Several Amend Course Calendar Entries

The Department of Physics and Physical Oceanography has initiated a review of all of its undergraduate course calendar entries.

These will be submitted for consultation and approval in blocks of 2-6 courses, by subject area, over the coming months.

Attached are amendment proposals for five courses: PHYS 2300, PHYS 3300, PHYS 3340, PHYS 4300, and PHYS 4340.

Feedback is requested by Jan. 21, 2016.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee (plumer@mun.ca)
Jolanta Lagowski, Head (jolantalk@mun.ca).
Proposal
Amend Calendar Entry PHYS 2300

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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

Physics 2300 Introductory Physical Oceanography

Abbreviated Course Title

Intro Physical Oceanography

Calendar Change(s)

2300 Introductory Physical Oceanography (same as Ocean Sciences 2300) will provide an introduction to the physical ocean. Ocean characteristics studied will include: the properties of seawater; key features of ocean circulation; wind-forcing in the ocean; tides and shoreline processes as well as ocean coupling with the atmosphere, geosphere and cryosphere (ice); and new approaches to ocean sampling and numerical modelling. The course will take an integrated earth systems approach to the study of upwelling zones, open ocean ecosystems and climate change.

general oceanography with a primary focus on physical oceanography. Topics include how oceans form and evolve on a planetary scale. Ocean characteristics studied include: the properties of seawater; elementary dynamics of fluids on the rotating Earth; ocean circulation; wind-forcing in the ocean; tides and waves. Contemporary methods used in oceanographic study are covered including satellite oceanography. Interactions that occur between physical and chemical processes and biological activity are reviewed.

CR: Environmental Science 2371, Ocean Sciences 2300
PR: any two first-year courses in Physics

Secondary Calendar Changes

This course is cross-listed with Ocean Sciences 2300 and will thus require the same changes (Sect. 10.9 Ocean Sciences):

2300 Introductory Physical Oceanography (same as Physics 2300) will provide an introduction to the physical ocean. Ocean characteristics studied will include: the properties of seawater; key features of ocean circulation; wind-forcing in the ocean; tides and shoreline processes as well as ocean coupling with the atmosphere, geosphere and cryosphere (ice); and new approaches to ocean sampling and numerical modelling. The course will take an integrated earth systems approach to the study of upwelling zones, open ocean ecosystems and climate change.

general oceanography with a primary focus on physical oceanography. Topics include how oceans form and evolve on a planetary scale. Ocean characteristics studied include: the properties of seawater; elementary dynamics of fluids on the rotating Earth; ocean circulation; wind-forcing in the ocean; tides and waves. Contemporary methods used in oceanographic study are covered including satellite oceanography. Interactions that occur between physical and chemical processes and biological activity are reviewed.

CR: Environmental Science 2371, Physics 2300
PR: any two first-year courses in Physics
Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course.

Consultations Sought From
- Faculty of Science.
- Grenfell Campus
- Marine Institute
- Faculty of Engineering

Library Report Received


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

Name

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

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Proposal
Amend Calendar Entry PHYS 3300

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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

Physics 3300: Intermediate Physical Oceanography

Abbreviated Course Title

Intermediate Phys Oceanography

Calendar Change(s)

3300 Intermediate Physical Oceanography deals with the physics of the processes in the ocean, providing an integrating view of the whole field of oceanography. The importance of physical processes to other aspects of oceanography is treated. provides a physics-based introduction to both dynamical and descriptive physical oceanography. Topics include properties of seawater, geostrophy, conservation equations, wind-forced dynamics, large-scale ocean circulation and waves and tides. A survey of analytical, observational, numerical, and laboratory approaches is presented.

PR: PHYS 2053 and MATH 2000 or registration in Academic Term 5 of the Ocean and Naval Architectural Engineering Program.

Rationale

Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Comments Received

Library Report Received

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
Amend Calendar Entry PHYS 3340

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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

Physics 3340: Principles of Environmental Physics

Abbreviated Course Title

Principles Environmental Phys

Calendar Change(s)

3340 Principles of Environmental Physics will explore the basic physical principles of light, heat, energy, and sound in the natural environment. Several key aspects of physics in the environment will be covered including climate and the physical evolution of the planet and the present role of the atmosphere and ocean; spectroscopy in the atmosphere and measurement and observation of the atmosphere; principles of energy generation and pollution transport in the atmosphere and ocean; applies basic physical principles to the environment of the Earth with a focus on problem solving and developing physical understanding. Key topics to be covered include the climate system and climate change, energy production and use, and the role of science in guiding public decision-making. PR: Mathematics 2000 and PHYS 2053

Rationale

Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Library Report Received


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

Name


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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Proposal
Amend Calendar Entry PHYS 4300

Executive Summary

Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs

- None.

Consultations

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

Library Holdings and/or Other Resources Required

- No new Library resources required.

Signature of Unit Head (if appropriate):

Date:

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

Date:
Course Number and Title
Physics 4300: Advanced Physical Oceanography

Abbreviated Course Title
Advanced Physical Oceanography

Calendar Change(s)

4300 Advanced Physical Oceanography covers fundamental properties of seawater and techniques of oceanographic measurement. The dynamical equations of oceanography are derived and solutions explored by comparison with oceanic observations. Properties of waves in rotating and non-rotating fluids, linear and non-linear wave theory, are developed. Dynamical physical oceanography, the equations of motion in oceanography are derived and analyzed. Topics include geostrophy, conservation equations, linear and non-linear wave theory, and open ocean and shelf circulation dynamics.
PR: PHYS 3300 and 3820 or waiver approved by the instructor

Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Library Report Received


Comments Received

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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:

Secretary:

Date:
Amend Calendar Entry PHYS 4340

Executive Summary
Proposal contains minor revisions to course description.

Resource Implications: Instructional Costs
- None.

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

Library Holdings and/or Other Resources Required
- No new Library resources required.

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
Physics 4340: Modelling in Environmental Physics

Abbreviated Course Title
Modelling Environmental Phys

Calendar Change(s)

4340 Modelling in Environmental Physics covers the basic principles underlying environmental modeling, will be developed and techniques for modeling presented and applied. Techniques for numerical modeling will be developed and simple numerical models will be developed for use in terrestrial, atmospheric and oceanic environments. Free and forced systems will be discussed and the transition to chaos and some aspects of chaotic dynamics. Techniques for numerical modeling are introduced with applications to simulation of terrestrial, atmospheric and oceanic environments. Concepts and principles of free and forced dynamical systems are introduced and applied to the analysis and interpretation of simplified climate and environment model simulations. Includes some discussion of dynamics and transition to chaos in environmental systems, uncertainty in their simulations and predictability of future environmental and climate changes.

PR: PHYS 3820 and PHYS 3340

Rationale
Course description was out of date. The proposed wording better reflects what is currently being taught in the course.
Consultations Sought From

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

Comments Received

Library Report Received

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

Name

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APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

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Secretary:

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</tr>
</tbody>
</table>
From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations [MIUGconsultations@mi.mun.ca]
Sent: December-14-15 10:10 AM
To: Martin Plumer
Subject: RE: Consultation: Minor changes to Physical Oceanography course descriptions

Dr. Plumer,

Thank you for the opportunity to review and comment on the proposed Calendar changes for courses PHYS 2300, PHYS 3300, PHYS 3340, PHYS 4300, and PHYS 4340.

These changes will have no impact on the programs at the Marine Institute and we are happy to support these changes as presented.

A very minor editorial comment: the name and subsequent course description for PHYS 4340 Modeling in Environmental Physics needs to have consistency in the spelling of the word "Modeling" or "Modelling". Both versions are acceptable – just need to choose one.

Thank you
Derek

Derek Howse
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0586
FAX: 709-778-0394
Derek.Howse@mi.mun.ca
From: Engineering Consultations [mailto:engrconsult@mun.ca]
Sent: December-08-15 9:16 AM
To: Martin Plumer
Cc: Andrew Fisher; Bruce Colbourne
Subject: Re: Consultation: Minor changes to Physical Oceanography

course descriptions

Dear Dr. Plumer,

Our CUGS is not scheduled to meet until the day before your deadline for replies. I have forwarded your set of Calendar changes to the Head of the Department of Ocean and Naval Architectural Engineering for his comments.

I have two immediate comments:

1. The change in one main prerequisite for PHYS 3300, from PHYS 2053 to PHYS 1051, makes the alternate prerequisite "or registration in Academic Term 5 of the Ocean and Naval Architectural Engineering Program" redundant. All ONAE students should have credit for PHYS 1051 and MATH 2000 by the end of Term 3, a full year before they start PHYS 3300 in Term 5.

   The prerequisite for PHYS 3300 can be simplified to "PR: PHYS 1051 and MATH 2000"

2. Changes to PHYS 2300 require simultaneous and identical changes to the cross-listed course Ocean Sciences 2300. I don't see such parallel changes in your document. With the consent of the Department of Ocean Sciences, they could be added as secondary changes to your document.

Should I receive any other comments, then I will pass them on to you at a later date.

Yours sincerely,
Dr. Glyn George, Chair
Committee on Undergraduate Studies
Faculty of Engineering and Applied Science Memorial University of Newfoundland
Hi again Martin: For your records here are Annie’s comments on your revised proposal for PHYS 2300 etc.
Thanks for doing this.
Best regards
Garth

From: Annie Mercier [mailto:amerrier@mun.ca]
Sent: December-15-15 10:24 AM
To: Fletcher, Garth
Subject: Fwd: Calendar changes physical oceanography courses

Hi Garth:
Here is the slightly revised proposal from Physics that Martin sent me today for PHYS 2300, PHYS 3300, PHYS 3340, PHYS 4300, and PHYS 4340. The proposed changes look fine and are now reflected in the OCSC calendar description, where appropriate (OCSC 2300). We may have to propose further changes/adjustments to the PHYS oceanography courses later, as we progress in the development of our Major and start cross-listing more of them to OCSC (as per my recent meeting with some of their undergrad committee members).

Cheers,
Annie

Annie Mercier, PhD
Associate Professor
Department of Ocean Sciences
Memorial University (Ocean Sciences Centre)
St. John's, NL, Canada, A1C 5S7
Tel: (709) 864-2011
Email: amerrier@mun.ca
www.mun.ca/osc/amerrier/bio.php
TO:  Physics & Physical Oceanography
     Martin Plumer, Chair, Undergraduate Studies Committee
     Jolanta Lagowski, Head,

FROM: Queen Elizabeth II Library Collections Division
      Alison Ambi, Science Research Liaison Librarian

DATE: December 14, 2015

RE: Calendar changes to Physical Oceanography courses

Upon review of the proposed calendar updates to PHYS 2300, 3300, 3340, 4300 and 4340, I have determined that the changes will have no impact on the collections activities of the Memorial University Libraries.
Proposal
Amend Calendar Entry PHYS 2300

SUMMARY PAGE FOR SENATE

Approval Form

Course Number and Title
Physics 2300 Introductory Physical Oceanography

Abbreviated Course Title
Intro Physical Oceanography

Calendar Change(s)

2300 Introductory Physical Oceanography (same as Ocean Sciences 2300) provides an introduction to general oceanography with a primary focus on physical oceanography. Topics include how oceans form and evolve on a planetary scale. Ocean characteristics studied include: the properties of seawater; elementary dynamics of fluids on the rotating Earth; ocean circulation; wind-forcing in the ocean; tides and waves. Contemporary methods used in oceanographic study are covered including satellite oceanography. Interactions that occur between physical and chemical processes and biological activity are reviewed.

CR: Environmental Science 2371, Ocean Sciences 2300
PR: any two first-year courses in Physics

Secondary Calendar Changes

This course is cross-listed with Ocean Sciences 2300 and will thus require the same changes (Sect. 10.9 Ocean Sciences):

2300 Introductory Physical Oceanography (same as Physics 2300) provides an introduction to general oceanography with a primary focus on physical oceanography. Topics include how oceans form and evolve on a planetary scale. Ocean characteristics studied include: the properties of seawater; elementary dynamics of fluids on the rotating Earth; ocean circulation; wind-forcing in the ocean; tides and waves. Contemporary methods used in oceanographic study are covered including satellite oceanography. Interactions that occur between physical and chemical processes and biological activity are reviewed.

CR: Environmental Science 2371, Physics 2300
PR: any two first-year courses in Physics
Proposal
Amend Calendar Entry PHYS 3300

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title
Physics 3300: Intermediate Physical Oceanography

Abbreviated Course Title
Intermediate Phys Oceanography

Calendar Change(s)

3300 Intermediate Physical Oceanography provides a physics-based introduction to both dynamical and descriptive physical oceanography. Topics include properties of seawater, geostrophy, conservation equations, wind-forced dynamics, large-scale ocean circulation and waves and tides. A survey of analytical, observational, numerical, and laboratory approaches is presented.

PR: PHYS 2053 and MATH 2000 or registration in Academic Term 5 of the Ocean and Naval Architectural Engineering Program.
Proposal
Amend Calendar Entry PHYS 3340

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title
Physics 3340: Principles of Environmental Physics

Abbreviated Course Title
Principles Environmental Phys

Calendar Change(s)

3340 Principles of Environmental Physics applies basic physical principles to the environment of the Earth with a focus on problem solving and developing physical understanding. Key topics to be covered include the climate system and climate change, energy production and use, and the role of science in guiding public decision-making.

PR: Mathematics 2000 and PHYS 2053
Proposal
Amend Calendar Entry PHYS 4300

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title
Physics 4300: Advanced Physical Oceanography

Abbreviated Course Title
Advanced Physical Oceanography

Calendar Change(s)

4300 Advanced Physical Oceanography covers dynamical physical oceanography. The equations of motion in oceanography are derived and analyzed. Topics include geostrophy, conservation equations, linear and non-linear wave theory, and open ocean and shelf circulation dynamics.

PR: PHYS 3300 and 3820
Proposal
Amend Calendar Entry PHYS 4340

SUMMARY PAGE FOR SENATE
Approval Form

Course Number and Title
Physics 4340: Modelling in Environmental Physics

Abbreviated Course Title
Modelling Environmental Phys

Calendar Change(s)

4340 Modelling in Environmental Physics covers the basic principles underlying environmental modeling. Techniques for numerical modelling are introduced with applications to simulation of terrestrial, atmospheric and oceanic environments. Concepts and principles of free and forced dynamical systems are introduced and applied to the analysis and interpretation of simplified climate and environment model simulations. Topics include some discussion of dynamics and transition to chaos in environmental systems, uncertainty in their simulations and predictability of future environmental and climate changes.

PR: PHYS 3820 and PHYS 3340
February 8, 2015

TO: All Members, Faculty Council of Science

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

SUBJECT: Calendar Changes and Response to Proposal from Senate Committee on Undergraduate Studies

At a meeting held on February 1, 2016, the Undergraduate Studies Committee of the Faculty of Science agreed that the following items be forwarded to Faculty Council for approval:

1. Department of Physics and Physical Oceanography
   - Changes to course descriptions, including changes to some prerequisites, for twelve existing courses.

2. Department of Biochemistry
   - Proposal to reduce the number of credit hours required for the joint honours program in Biochemistry and Cell Biology from 135 to 120.

At that meeting the Committee also considered a proposal from the Senate Committee on Undergraduate Studies regarding time lines for readmission appeals and request for retroactive drops and withdrawals. The Committee agreed with most of the proposed Calendar changes put forward by SCUGS, but recommends that the proposed five-year time limit to request a retroactive drop or withdrawal be reduced to three years.

[Signature]
Joan Burry
Associate Registrar and
Secretary, Committee
on Undergraduate Studies,
Faculty of Science
Calendar Changes in Existing Biochemistry and Cell Biology Joint Honours Program

Executive Summary
The current program for the Biochemistry and Cell Biology Joint Honours requires that the student complete 135 credit hours. Most other Joint Honours programs in the Faculty of Science can, however, now be completed in 120 credit hours. The Departments of Biochemistry and Biology propose to replace the existing regulations with a revised set that will enable students to complete this program in 120 credit hours.

Resource Implications: Instructional Costs
The proposed changes use no new teaching resources in the Departments of Biochemistry or Biology.

Consultations
The University Library, Grenfell Campus, the Marine Institute, the Faculty of Medicine, the School of Pharmacy, and Departments in the Faculty of Science on the St. John’s Campus,

Library Holdings and/or Other Resources Required
This change will have no impact on the University Library system.

The costs, if any, associated with this change/these changes can be met from within the existing budget allocation for the Department of Biochemistry and/or the Department of Biology.

Signature of Unit Head (if appropriate):  
Date: 3/Feb/16

Signature of Unit Head (if appropriate):  
Date: 3 Feb 2016

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

Date:
SUMMARY PAGE FOR SENATE

Approval Form

Existing Program Title where updates are being done
(5.1.3) Biochemistry and Cell Biology Joint Honours

Calendar Changes
See appended pages

Secondary Calendar Changes
(9.1) The name of the program in the Biochemistry section of the Calendar is being updated.

Rationale
The Biochemistry and Cell Biology Joint Honours program is one of the last remaining joint honours programs in the Faculty of Science that still requires 135 credit hours for completion. This proposal brings the Biochemistry and Cell Biology Joint Honours program into line with most others in the Faculty which require 120 credit hours.

Consultations Sought From

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Library Report Received
Yes

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

Name

Date
Revised Joint Honours in Biochemistry and Cell Biology

FOR OFFICE USE ONLY

APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Chair:
Secretary:
Date:
Revised Joint Honours in Biochemistry and Cell Biology

MARKED UP CHANGES

Delete existing entry:

5.1.3 Biochemistry and Cell Biology Joint Honours

5.1.3 Biochemistry and Cell Biology Joint Honours

Students must have at least an overall average of 65% in English 1080 and 1110 (or equivalent), Mathematics 1000 and 1001, Biology 1004 and 1002, Chemistry 1050 and 1051 (or 1200 and 1001), Physics 1050 (or 1020), and 1051 (or 1021).

The following courses, including prerequisites where applicable, will be required:

1. Biochemistry 2101, 3105, 3106, 3107, 3108, either 4210 or 4211, 12 credit hours chosen from 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201, 4230-4240.
2. Biology 2060, 2250, 2600, 2900, 3050 and 9 credit hours chosen from 3500, 3530, 3620, 4000, 4200, 4241. In addition, further Biology courses at the 2000, 3000, or 4000 level must be selected by the student to make up a minimum of 42 credit hours in Biology including Biology 1001 and 1002 but not including Biology 409A or 409B.
3. Either Medicine 310A/B, or Biology 3404 plus one of Biology 3402, 4245 or 4404.
4. Chemistry 2100, 2301, 2400, 2401, either 3410 or 3411.
5. Statistics 2550 or equivalent.
7. Other courses to complete the prescribed minimum of 135 credit hours in courses for the Joint Honours Degree.

Note: Students may count only one of the two courses, Biochemistry 4405 or Biology 4200, for credit in this program.

The topic of the Honours dissertation must be chosen with the approval of both Departments. A faculty member of either Department may act as supervisor. Seventy-eight credit hours in Biology, Biochemistry, and Chemistry courses beyond the first-year level from these listed in the program shall contribute to those in which a grade of "B" or an average of 75 or higher is required. Medicine 310A/B counts as Biochemistry for these seventy-eight credit hours.

Replace with:

5.1.3 Biochemistry and Cell Biology Joint Honours

The following courses are required:

1. Biology 1001, 1002, Chemistry 1050, 1051 (or 1200 and 1001), English 1080 and 1110 (or equivalent), Mathematics 1000, 1001, Physics 1020 or 1050, Physics 1021 or 1051, Statistics 2550;

2. Biochemistry 2101, 3105, 3106, Chemistry 2301, Chemistry 2400, 2401;

3. Either Biochemistry 3107 and 3108 or Medicine 310A/B;
Revised Joint Honours in Biochemistry and Cell Biology

4. An additional 12 credit hours to be selected from Biochemistry 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201, 4210 or 4211; 4230-4249;

5. Biology 2060, 2250, 2600, 2900, 3530, 4241, plus one of Biology 3401, 3402, 4245 or 4404;

6. 12 credit hours from the following: Biology 3050, 3052 (or Biochemistry 3052), 3401, 3402, 3500, 3620, 3950, 3951, 4010, 4040, 4050, 4200 (or Biochemistry 4105), 4245, 4250, 4251, 4255, 4404, 4550, 4605, 4607;

7. Biochemistry 499A/B or Biology 499A/B;

8. Electives to make up 120 credit hours.

**Note:** Students may count only one of the two courses, Biochemistry 4105 or Biology 4200, for credit in this program. Seventy-five credit hours in Biology, Biochemistry and Chemistry courses beyond the first-year level from those listed in the program shall contribute to those in which a grade of "B" or an average of 75 or higher is required. Medicine 310A/B counts as Biochemistry for these seventy-five credit hours.

**SECONDARY CHANGES:**

9.1 Biochemistry
www.mun.ca/biochem
The following undergraduate programs are available in the Department:
   1. Biochemistry and Cell Biology/Microbiology Joint Honours

Becomes:

9.1 Biochemistry
www.mun.ca/biochem
The following undergraduate programs are available in the Department:
   1. Biochemistry and Cell Biology Joint Honours
CONSULTATIONS:

Hello All,

The Departments of Biochemistry and Biology have each passed proposed new regulations for the Joint Honours in Biochemistry and Biology so that it can be completed in 120 credit hours (in contrast with the current 135 cr hrs). The attached document has the details.

We would appreciate your comments and/or feedback on the proposal.

With thanks, and best wishes for the holidays,

martin

Dr. Martin E. Mulligan
Department of Biochemistry
Memorial University of Newfoundland
St. John’s, Newfoundland, CANADA A1B 3X9

REPLIES:

18 DEC 2015

Hello Dr. Mulligan
Carla Dillon, Our Associate Dean (Undergraduate) has reviewed the proposed changes and she has no comments or concerns.

CsoP Glew

CSOP GLEW, Hon. B.A., M.U.P. I MANAGER OF ACADEMIC PROGRAMS
School of Pharmacy
Memorial University of Newfoundland

21 DEC 2015

Hi Dr Mulligan

The Faculty of Medicine supports the new regulations for the Joint Honours in Biochemistry and Biology

Sincerely
Cathy Vardy
Vice Dean
Faculty of Medicine

Martin,

Thank you for the opportunity to review and comment on the proposed changes to the Biochemistry and Cell Biology Joint Honours Program.

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

Derek,

Derek Howse
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University

05 JAN 2016

Hi Martin,

Physics has no problems with these changes.

Cheers,
Martin Plumer

06 JAN 2016 – LIBRARY REPORT

Dr. Mulligan,

There would be no impact of this change in the Joint Honours Program on the University Library system.

Please let me know if you have further questions.

Erin Alcock

Erin Alcock
Science Research Liaison Librarian
QE2 Library
Memorial University of Newfoundland
Strategic Plan for the Faculty of Science
Memorial University of Newfoundland
Fall 2011
(Revised April 2015)

The province of Newfoundland and Labrador, and Memorial University are currently undergoing a period of rapid change. As the province’s role within the country has changed, so too has the role of Memorial University and the Faculty of Science. The purpose of this document is to anticipate and plan for research, teaching, and service in this environment and to provide guidance to the Faculty of Science for the next decade.

Anticipated Challenges for the Faculty of Science from 2011 to 2021

- Memorial University will continue to shift its focus to become a more research-intensive university.
- Tri-council (NSERC, CIHR, SSHRC) funding will continue to be a basic operating resource for many faculty members. However, competition for these sources will only increase in the future. While tri-council funding will be fundamental to the research mission of the Faculty of Science, other agencies such as The Atlantic Canada Opportunities Agency, the Atlantic Innovation Fund, Canada Foundation for Innovation, Genome Canada, Genome Atlantic and the Newfoundland and Labrador Research and Development Council will continue to provide the financial resources that will allow us to significantly transform research. For the Faculty of Science to thrive in the next decade, we must pre-position ourselves to take full advantage of these and other opportunities.
- Graduate student numbers will continue to increase.
- Undergraduate student numbers will remain stable or increase modestly. This student population will become more ethnically diverse. Engagement of faculty in undergraduate recruitment activities will need to be increased.
- The numbers of students registering for distance education courses will continue to increase. With this growth, we will need to reconsider the blend of on-campus and distance courses acceptable for a MUN degree, and the extent to which the Faculty of Science should be offering courses to other institutions and accepting courses from other institutions.
- The new Science Building is currently under construction with an expected completion date of September 2019. This building will impact not only the departments that move to the new building, but also those that will occupy new or renovated space.
- The Faculty of Science has not fully engaged its alumni. They are a critical resource for this Faculty so establishing this connection will be a major new undertaking.

Vision
A research-intensive Faculty that is renowned both for the caliber of our research and the quality of our graduates
Mission
Consistent with the mission of Memorial University, the Faculty of Science is dedicated to international excellence in research, teaching and engagement to the benefit of people locally, nationally, and internationally.

Mandate

Research
The Faculty of Science is responsible for the provision of a broad spectrum of basic science knowledge and as such serves as the foundation upon which more applied disciplines are based. It is our responsibility to further knowledge within specific science disciplines, as well as to create the conditions that facilitate interdisciplinary research.

Teaching
The Faculty of Science is intended to be broadly accessible to students. Emphasis is placed on creating an environment that encourages and supports the learning process, while also challenging our students to achieve goals they might not have thought possible.

The Plan

Research Goals:
The Faculty of Science will enhance its stature globally as a leading research-intensive faculty that advances knowledge and produces high calibre graduates. Research within the Faculty of Science is primarily devoted to questions of fundamental importance, but also includes applied research relevant locally, nationally, and internationally. To achieve this we will:

1. Support and promote basic and applied research excellence in areas of established strength and emerging opportunity while recognizing the freedom of the faculty to pursue individual research interests based on their judgement, skill, and curiosity. The hiring of faculty will be primarily driven by our research agenda.
2. Attract and retain world-class faculty, students, postdoctoral fellows and staff to engage in cutting edge research activity.
3. Foster an intellectual environment conducive to research excellence and to the training and mentoring of highly qualified personnel.
4. Provide the infrastructure and services essential to support the training of undergraduate and graduate students and leading-edge research.
5. Engage with partners within and outside of Memorial to promote and support interdisciplinary research, research networking, and research collaborations.
6. Promote the high caliber of our research. This can be achieved by more aggressively preparing and nominating our faculty and graduate students for national and international awards.
Current Strengths and Emerging Opportunities in Research.

The Faculty of Science currently has substantial and diverse research strength, the greatest being our faculty, staff, and students. Within academic departments research agendas are driven by the discipline-specific departmental strategic plans. Beyond those, the Faculty of Science engages in interdisciplinary research that crosses individual departments and serves to synergize the research endeavor in the Faculty as a whole. The current research strengths include Marine Sciences; Natural Resources; Biomedical Sciences and Health; Materials Science; and Mathematical and Computational Sciences.

While the Faculty of Science is committed to maintaining its core areas, there are also particular areas of emerging opportunity generated by the expertise of our faculty, our research infrastructure, and our geographical position with its associated climate, resources, and ecology that distinguish us from other faculties of Science. We therefore provide diverse opportunities that will draw researchers and students here in preference to other universities in Canada or internationally. The areas also crosscut most of the departments and are consistent with the priority and strategic areas that federal and provincial government agencies target for funding as well as Memorial’s special obligation to the people of Newfoundland and Labrador. They also reflect areas in which we have made recent new hires. For the Faculty of Science, these strategic research areas are:

Marine Sciences

Research activities in this area includes, for example: biological, chemical, physical, and geological oceanography and oceanographic modeling; ocean acoustics; ocean data visualization; ocean sensor and instrumentation development; physiology, molecular biology, and biochemistry of aquatic species; aquaculture and fisheries science; marine ecology; cognitive and behavioural ecology of marine species; conservation and climate change; glacial climate systems; harsh environments.

Natural Resources and Energy

Research activities in this area include the discovery, production and monitoring of non-renewable and renewable natural resources as well as traditional and alternative sources of energy. Some examples are: petroleum reservoir characterization and modeling; mineralogy; stratigraphy; sedimentology; exploration geophysics; tectonics; environmental impact and monitoring of resource extraction; biofuels and materials; energy sustainability, cognitive and behavioural ecology; landscape ecology and conservation; plant ecology; environmental geology; sustainable/green chemistry; alternative energy sources; geochemistry; biogeochemistry; contaminant hydrology; environmental chemistry.
Mathematical and Computational Sciences

Mathematical and Computational models are pervasive in modern science. Research ranges from theoretical computer science, pure mathematics, applied mathematics and statistics to the more applied areas such as: nature and bio-inspired computing, autonomous robotics, complex systems and their simulation, cheminformatics, mathematical and computational biology, fluid dynamics, geophysical modeling, ocean and atmosphere modeling.

Teaching Goals:

The Faculty of Science is dedicated to providing our undergraduate and graduate students with the best possible educational experience, acknowledging the needs and interests of our province.

1. All decisions involving the education of our students will be designed to uphold the value of a Memorial University Science degree.
2. Students will be provided with the highest quality of instruction. To ensure this, faculty members will receive constructive feedback, and be provided with the opportunity and the means to improve and enhance their teaching and to develop innovations in teaching. Graduate students will have opportunities for developing their teaching skills.
3. We will maintain an infrastructure appropriate for contemporary learning. Undergraduate laboratory equipment will have technology consistent with that used in the modern research environment.
4. Undergraduate students will be involved in the research environment. Our undergraduates will be given the opportunity to participate in research and such experience should be credited on their transcripts. Undergraduate students will be encouraged to present their research findings at regional and national scholarly conferences.
5. We will incorporate technological advancements into our curricula whenever it is appropriate to do so. In particular, an increase in the scope of distance course offerings here and elsewhere will create challenges and opportunities.
6. Teaching excellence will be recognized and rewarded by actively nominating faculty for local and national teaching awards.

Current Strengths and Emerging Opportunities in Teaching

The Faculty of Science has a strong reputation of excellence in teaching that is a consequence of the skill and dedication of our faculty and staff. Our instruction ranges from the traditional lecture format, to learning opportunities that place greater emphasis on experiential learning (e.g., field schools and courses and clinical training), to award winning distance education courses. While the Faculty of Science includes a diverse range of disciplines, we are committed to providing students with both the opportunity to learn and the opportunity to apply their knowledge. Coop programs are a relatively small component of our programs within the Faculty of Science, and they provide a learning opportunity that should grow in the future. Likewise, there are also opportunities for expanding the range of options for our students through partnerships with other faculties (e.g., life science and engineering science).
Priorities for most of our undergraduate and graduate programs are provided by our departmental strategic plans. The Faculty of Science is home to our interdisciplinary graduate programs (Aquaculture, Cognitive and Behavioural Ecology, Computational Science, Environmental Science, and Theoretical Physics). As our graduate programs reflect our research expertise, we expect growth in our graduate programs to be fueled by growth in our research programs.

Engagement:

As one of the largest academic units at Memorial University, we tend to be modest about our achievements. However, such modesty means that most outside the Faculty of Science do not know who we are, what we do, and how we contribute to both the university and the province. We therefore do not get the recognition we deserve in terms of the excellence of our teaching programs, and the accomplishments of our students, faculty and staff.

1. We will better engage with the community to make clear our contribution to society and our contribution to the success of the province.
2. We will make a strong connection with our alumni so that they remain engaged with the Faculty of Science after they graduate.
3. The Faculty of Science at Memorial will establish a national profile that distinguishes it from science at other universities in Canada. This will be informed by our research and teaching goals.
4. We will be proactive in our use of technology in order to have a presence in a variety of different media.
5. Our faculty are encouraged to be more engaged with the media and they will be assisted with media training.
6. Students will be encouraged to participate in national and international competitions to both inform ourselves and others of the strengths of our programs.