



**Dean of Science Office**

St. John's, NL Canada A1B 3X7  
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deansci@mun.ca www.mun.ca/science

**MEETING OF THE FACULTY COUNCIL OF THE FACULTY OF SCIENCE**

A regular meeting of the Faculty Council of the Faculty of Science will be held on Wednesday, October 18, 2017, at 1 p.m. in C-2045.

**AGENDA**

- 1. Regrets**
- 2. Adoption of the Minutes of September 20, 2017**
- 3. Business Arising from the Minutes: None**
- 4. Correspondence: None**
- 5. Reports of Standing Committees:**
  - A. Undergraduate Studies Committee:**
    - a. Department of Physics and Physical Oceanography, paper 5.A.a (20 pages)
      - i. Changes to the Minor program for students enrolled in the Bachelor of Engineering's computer Engineering and Electrical Engineering programs
      - ii. Changes to the Major and Honours regulations for the Environmental Physics program
    - b. Department of Biochemistry 5.A.b (43 pages)
      - i. Changes to the Biochemistry Major and Biochemistry and Chemistry Joint Honours programs
      - ii. Changes to Biochemistry courses and secondary changes to other sections of the Calendar
    - c. Department of Chemistry 5.A.c (6 pages)
      - i. Changes to the course Chemistry 3211 (pre-requisites)
  - B. Graduate Studies Committee: None**
  - C. Nominating Committee: None**
  - D. Library Committee: None**
- 6. Report of Teaching Consultant**
- 7. Reports of Delegates from Other Councils**
- 8. Conflict of Interest Presentation -Sean Cadigan, Associate Vice-President (Academic) Programs**
- 9. Report of the Dean**
- 10. Question Period**
- 11. Adjournment**

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



## Faculty of Science

Office of the Dean  
St. John's, NL, Canada A1B 3X7  
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# FACULTY OF SCIENCE FACULTY COUNCIL OF SCIENCE MINUTES OF MEETING OF SEPTEMBER 20, 2017

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

## FSC 2523

### Present

#### Biochemistry

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

#### Biology

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

#### Chemistry

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

#### Computer Science

Brown, E. Bungay, S. Shieh, J. S.

#### Earth Sciences

Hanchar, J. Welford, K.

#### Mathematics & Statistics

Booth, I. Loredó-Osti, J. Mantyka, S. Merkli, M. Pike, D.  
Sullivan, S.

#### Ocean Sciences

Fletcher, G.

#### Physics & Physical Oceanography

Lagowski, J. Plumer, M. Saika-Voivod, I. Wallin, S.

#### Psychology

Neath, I. Thorpe, C.

#### Dean of Science Office

Barac, R. Foss, K. Foster, A. Harding, S. Jackson, G.

Mackenzie, T.            Zedel, L.

**Geography**

Edinger, E.

**FSC 2524    Regrets**  
Kerton, F.    Poduska, K.    Todd, A.

**FSC 2525    Adoption of Minutes**  
**Moved:** Minutes of April 19, 2017, meeting be adopted (Flinn/Sullivan).  
**Carried.**

**FSC 2526    Business Arising:** None

**FSC 2527    Correspondence:** None

**FSC 2528    Reports of Standing Committees:**

**A.    Undergraduate Studies Committee:**

Report presented by Shannon Sullivan, Chair, Undergraduate Studies Committee

Shannon Sullivan reminded council members that the deadline for calendar changes is approaching. Based on the deadline for Senate, any proposed changes would have to be presented at the Faculty of Science Faculty Council by the December 6, 2017 meeting. The Science Committee on Undergraduate Studies requires four weeks for consultation on calendar changes, so submissions for changes should be worked on now.

**a)    Moved:** Department of Earth Sciences, calendar change, EASC 2702, Sedimentology and Stratigraphy. (Sullivan/Hanchar). **Carried.**

**b) i)    Moved:** Department of Physics and Physical Oceanography, proposal for new course, PHYS 3050, Introduction to Biophysics (Sullivan/Lagowski). **Carried.**

ii) **Moved:** Department of Physics and Physical Oceanography, calendar changes to the Joint Honours Physics and Applied Mathematics program (Sullivan/Lagowski). **Carried.**

**c) i)    Moved:** Department of Chemistry, calendar changes, CHEM 2400 and 2401 (Sullivan/Fridgen).

**Amendment to the motion:** Calendar descriptions for CHEM 2400 and 2401 include: “2 hours of *recommended* tutorial weekly” instead of the originally proposed “2 hours of *non-mandatory* tutorial weekly” (Fridgen/Kozak). **Amendment carried.**

The **amended motion** was **carried**.

ii & iii) **Moved:** Department of Chemistry, calendar changes, special topics courses - CHEM 4150, CHEM 4250, CHEM 4350 and CHEM 4450 (Sullivan/Fridgen). **Carried.**

Shannon Sullivan reminded council members that the deadline for calendar changes is approaching. Based on the deadline for Senate, any proposed changes would have to be presented at the Faculty of Science Faculty Council by the December 6, 2017 meeting. The Science Committee on Undergraduate Studies requires four weeks for consultation on calendar changes, so submissions for changes should be worked on now.

**B. Graduate Studies Committee:**

Presented by J.C. Loredano-Osti, Chair, Graduate Studies Committee.

- a. Aquaculture Program, special topics course, AQUA 6202, Ploidy Manipulation in Aquaculture, presented to council for information purposes only.

**C. Nominating Committee:**

Presented by Andy Foster.

Andy Foster is the only member of the nominating committee since the committee has been inactive and the Dean of Science office took on this role. The current constitution is outdated and current practice is not following the constitution. To rectify this, Andy Foster will establish an *ad hoc* committee to review and update the constitution and then bring the proposed updates to council for approval. Also, a notice will be sent to the Department Heads seeking members as representatives to other Academic Councils.

It was noted that the current constitution does not include ASM CE's for involvement on committees.

**Moved:** Committee matrix be approved as presented (Foster/Sullivan).  
**Carried.**

**D. Library Committee: None**

**FSC 2529 Report of Teaching Consultant: None**

**FSC 2530 Reports of Delegates from Other Councils: None**

**FSC 2531 Report of the Dean**  
Presented by Mary Courage, Interim Dean of Science.

Update on start up for new hires: In late August, we got confirmation from the VPA that our request for startup funds for 2016-17 was approved. We were given somewhat less than half of the \$320,000 we requested with the balance coming

from the Dean of Science office. The usual cost share is 50-50. In any case, the searches for six new faculty members that had been approved were initiated.

Other positions: Three conversions from 3-year regular term appointments to tenure track positions have been requested. One has been confirmed and two are in progress and expected to be confirmed.

Canada Research Chairs: There has been no further announcement on the latest round of regular CRCs yet. We should receive word in late October on the two Tier 1 and one Tier 2 submissions. The Tier 2 application submitted for Cora Young (Chemistry) has been re-advertised and interviews will begin shortly. A search is in progress for a potential NSERC Industrial Research Chair with contributions from the Hibernia Management Development Corporation and RDC (now Innovate NL) confirmed.

In addition, five departments responded to the call for CRC150 applications that was presented on very short notice and with a very rapid turn-around time requirement. One of them, Uta Passow, was selected by the MUN Committee to go forward to the competition. If selected, it would be valued at \$1M a year for seven years. Many thanks to the five departments and to Scott Harding and Raluca Barac for their heroic efforts to make this happen.

The CSF and ARC (animal research centre) construction projects are moving forward on schedule. Some details of the occupancy of both facilities are still under discussion.

The Complement Advisory Committee (CAC - attrition committee) will continue to review all requests to recruit for new faculty and staff to fill vacant positions. Therefore, it is advisable to be thorough and careful in documenting the need for new appointments or new positions.

Staff changes in the Dean's Office: We have three staff changes: Gail Kenny is now the decanal assistant; Nancy Bishop is the intermediate secretary supporting the interdisciplinary programs; and Melissa Strong is the front reception.

Policy Consultation: We have been invited to provide feedback on the following draft policies: Accommodations for Students with Disabilities, Animals on Campus; Health and Management System.

Reminder: The Dean's Award Ceremony will be held on September 21<sup>st</sup> from 5-7pm in the Bruneau Centre.

**FSC 2532**      **Question Period:** None

**FSC 2533**      **Adjournment**  
The meeting adjourned at 1:55 p.m.



Office of the Registrar .

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

October 11, 2017

TO: All Members of Faculty Council, Faculty of Science

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

SUBJECT: **Proposals for Calendar Changes**

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At a meeting held on October 6, 2017, the Undergraduate Studies Committee of the Faculty of Science agreed to forward the following items Faculty Council for approval:

- **Department of Physics and Physical Oceanography**
  - Changes to the Minor program for students enrolled in the Bachelor of Engineering's Computer Engineering and Electrical Engineering programs.
  - Changes to the Major and Honours regulations for the Environmental Physics program.
- **Department of Biochemistry**
  - Changes to the Biochemistry Major and Biochemistry and Chemistry Joint Honours programs.
  - Changes to Biochemistry courses and secondary changes to other sections of the Calendar.
- **Department of Chemistry**
  - Changes to the course Chemistry 3211 (pre-requisites)

  
Maria Murray

# Proposal Calendar Changes to Minor in Physics

Consultation Request.

The Department of Physics and Physical Oceanography proposes changes to the Calendar for the Minor in Physics for Computer Engineering and Electrical Engineering students.

Feedback is requested by 11 September 2017.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee ([plumer@mun.ca](mailto:plumer@mun.ca))

Jolanta Lagowski, Head ([jolantal@mun.ca](mailto:jolantal@mun.ca)).

26 June 2017

# Proposal

## Calendar Changes to Minor in Physics

### Executive Summary

A course already required for students in Electrical and Computer Engineering is being removed, along with other minor language updates. The minor is being extended to Computer Engineering students. No new courses are involved.

### Resource Implications: Instructional Costs

No additional teaching resources.

### Consultations

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

This proposal was developed after consultation with the Department of Electrical and Computer Engineering.

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

Sent: Monday, June 26, 2017 9:13 AM

To: 'BioChem' <biohead@mun.ca>; 'Biology' <pmarino@mun.ca>;

''Chemistry''@simone.ucs.mun.ca;

'Computer Science' <cs-chair@mun.ca>; 'Earth Science' <eascugcon@mun.c>; 'Geography'

<nccatto@mun.ca>; 'Grenfell' <associatevpoffice@grenfell.mun.ca>; 'GrenfellPhysics'

<prouleau@grenfell.mun.ca>; 'Library' <aambi@mun.ca>; MIUG Consultations

<MIUGconsultations@mi.mun.ca>; 'Math' <mathconsult@mun.ca>; 'Ocean Sciences'

<fletcher@mun.ca>; 'Physics' <jolantal@mun.ca>; 'Psychology' <psychology.head@mun.ca>

Subject: Consultation request: minor in Physics for Engineering students

Consultation Request.

The Department of Physics and Physical Oceanography proposes changes to the Calendar for the Minor in Physics for Computer Engineering and Electrical Engineering students.

Feedback is requested by 11 September 2017.

Thank you.

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

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

26 June 2017



**Library Holdings and/or Other Resources Required**

No additional costs are implicated.

Signature of Unit Head (if appropriate): \_\_\_\_\_

Date: \_\_\_\_\_

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

\_\_\_\_\_

Date: \_\_\_\_\_

## SUMMARY PAGE FOR SENATE

### Approval Form

#### Program Title: Minor in Physics

#### Calendar Changes

Additions are denoted by underline, deletions by strike-through.

On page 506 of the 2016-17 edition of the Calendar, amend section 9.10.1 as follows.

#### 9.10.1 Minor in Physics

For ~~Electrical-Computer~~ Engineering students and Electrical Engineering students, 24 credit hours in Physics which must include Physics 1050 (or 1020), 1051, 2750, and 3000, ~~and 3550~~ with an additional ~~9~~ 12 credit hours selected from Physics 2820, 3600, 3750, 3751, 3800, 4000, 4220, 4600 or other 3000 or 4000 level courses subject to approval by the Head of the Department of Physics and Physical Oceanography and the ~~Chair~~ Head of the Department of Electrical and Computer Engineering.

#### Secondary Calendar Changes

None.

#### Calendar Entry After Changes

For Computer Engineering students and Electrical Engineering students, 24 credit hours in Physics which must include Physics 1050 (or 1020), 1051, 2750, and 3000, with an additional 12 credit hours selected from Physics 2820, 3600, 3750, 3751, 3800, 4000, 4220, 4600 or other 3000 or 4000 level courses subject to approval by the Head of the Department of Physics and Physical Oceanography and the Head of the Department of Electrical and Computer Engineering

#### Rationale

The existing minor in Physics for students in the Electrical Engineering major is being extended to include students in the Computer Engineering major. Students in these two majors take the identical set of courses in Academic Term 3 and many courses are common thereafter.

Physics 3550 is being deleted from the list because it is credit restricted with Engineering 3821, a compulsory course for students in Electrical and Computer Engineering.

Other minor language changes serve to update the program description.

**Consultations Sought From**

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

**Comments Received**

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

**Library Report Received**

Yes

**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: \_\_\_\_\_

Hi Martin.

Our faculty committee on undergraduate studies met on Wednesday and was supportive of changes to allow Computer Engineering students to do a minor in Physics.

We see it a good opportunity for our students. So the impact on our programs is positive.

Theodore Norvell, Acting Chair of FEAS CUGS

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Theodore S. Norvell, Ph.D., P.Eng. <http://www.engr.mun.ca/~theo>  
Dept. Electrical and Computer Engineering Email: theo at mun dot ca  
Cross appointed to Dept. Computer Science Phone: +1 709 864-8962  
Memorial University of Newfoundland Fax: +1 709 864-4042  
St. John's, NL, Canada, A1B 3X5 Skype: theodore.norvell

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From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations  
[MIUGconsultations@mi.mun.ca]  
Sent: August-18-17 1:36 PM  
To: Martin Plumer  
Subject: RE: Consultation request: minor in Physics for Engineering students

Martin,

Thank you for the opportunity to review and comment on the proposed Calendar Changes to Minor in Physics.

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

All the best,

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

From: Fletcher, Garth [fletcher@mun.ca]  
Sent: June-28-17 12:38 PM  
To: Martin Plumer  
Cc: amercier@mun.ca  
Subject: RE: Consultation request: minor in Physics for Engineering students

Hi Martin, Ocean Sciences Undergraduate Studies Committee reviewed your proposal and have no concerns. However the committee did suggest that you use a bulleted format (for the sake of clarity) to list the requirements instead of one long sentence which to some may be confusing.  
Best regards

Garth

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From: Ambi, Alison [aambi@mun.ca]  
Sent: June-26-17 9:18 AM  
To: Martin Plumer  
Subject: RE: Consultation request: minor in Physics for Engineering students

Hi Martin,  
These proposed changes will have no implication for library resources.  
Sincerely,  
Alison

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Alison Ambi  
709 864 7125  
Interim Head, Collections

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

QEII Library  
Memorial University of Newfoundland  
[www.library.mun.ca](http://www.library.mun.ca)

# **Proposal Calendar Changes to Major and Honours Programs in Environmental Physics**

Consultation Request.

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

Feedback is requested by September 11, 2017.

Thank you.

Martin Plumer, Chair, Undergraduate Studies Committee ([plumer@mun.ca](mailto:plumer@mun.ca))

Jolanta Lagowski, Head ([jolantal@mun.ca](mailto:jolantal@mun.ca)).

June 28, 2017.

# Proposal

## Calendar Changes to Major and Honours Programs in Physics

### Executive Summary

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

### Resource Implications: Instructional Costs

No additional teaching resources.

### Consultations

From: Martin Plumer [mailto:plumer@mun.ca]  
Sent: Wednesday, June 28, 2017 8:30 AM  
To: 'BioChem' <biohead@mun.ca>; 'Biology' <pmarino@mun.ca>;  
"Chemistry"@simone.ucs.mun.ca;  
'Computer Science' <cs-chair@mun.ca>; 'Earth Science' <eascugcon@mun.ca>; 'Engineering'  
<enrconsult@mun.ca>; 'Geography' <ncatto@mun.ca>; 'Grenfell'  
<associatevpoffice@grenfell.mun.ca>; 'GrenfellPhysics' <prouleau@grenfell.mun.ca>; 'Library'  
<aambi@mun.ca>; MIUG Consultations <MIUGconsultations@mi.mun.ca>; 'Math'  
<mathconsult@mun.ca>; 'Ocean Sciences' <fletcher@mun.ca>; 'Physics' <jolantal@mun.ca>;  
'Psychology' <psychology.head@mun.ca>  
Subject: Consultation: Calendar changes Environmental Physics.

Consultation Request.

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

Feedback is requested by September 11, 2017.

Thank you.

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

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

June 28, 2017.

### Library Holdings and/or Other Resources Required

No additional costs are implicated.

## SUMMARY PAGE FOR SENATE

### Approval Form

**Programs Titles: Major in Environmental Physics, Honours in Environmental Physics**

#### Calendar Changes

##### 9.10.4 Major in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)
3. Mathematics 1000 and 1001
4. Mathematics 2000, ~~Mathematics 2050, Mathematics-2260, Mathematics-3202~~
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, ~~2750~~, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), ~~3900, 4340~~
7. ~~Physics 3400 or 3500~~
8. 7. Earth Sciences 1000, 1002, 2502, ~~3170, 3172~~ 3600
9. 8. Geography 2102, 2195, 3120
10. 9. Biology 2120, 2600
10. Plus 30 additional credit hours from elective courses for a total of 120 credit hours.

The Major degree offers students a fair degree of latitude in choosing electives. Students are encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences ~~3600~~, 3611, 3170, 3172 or 4105.

##### 9.10.5 Honours in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)
3. Mathematics 1000 and 1001
4. Mathematics 2000, ~~Mathematics 2050, Mathematics 2260, Mathematics-3202~~
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, ~~2750~~, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), 3900, 4205, 4300, 4340, ~~4820~~, 490A/B.
7. ~~Physics 3400 or 3500~~
8. 7. Earth Sciences 1000, 1002, 2502, ~~3170 and 3172~~ 3600



9. 8. Geography 2102, 2195, 3120

40. 9. Biology 2120, 2600

10. Plus 15 additional credit hours from elective courses for a total of 120 credit hours.

Students are encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences 3611, 3170, 3172 or 4105.

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

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

~~Those courses in which a grade of "B" or better or an average of 75% or higher are required, as specified under **Academic Standing, clause 1** of the **Regulations for the Honours Degree of Bachelor of Science**, are 45 credit hours in Physics courses, and 15 credit hours in other courses (beyond the 1000 level) selected from the specified program courses in Earth Sciences, Geography and Biology.~~

~~Recommended Course Schedule – Honours Environmental Physics Program~~

<del>Year</del>	<del>Semester I</del>	<del>Semester II</del>
<del>I</del>	<ul style="list-style-type: none"> <li><del>• Chemistry 1050</del></li> <li><del>• Earth Sciences 1000</del></li> <li><del>• English 1080</del></li> <li><del>• Mathematics 1000</del></li> <li><del>• Physics 1050</del></li> </ul>	<ul style="list-style-type: none"> <li><del>• Chemistry 1051</del></li> <li><del>• Earth Sciences 1002</del></li> <li><del>• English 1110</del></li> <li><del>• Mathematics 1001</del></li> <li><del>• Physics 1051</del></li> </ul>
<del>II</del>	<ul style="list-style-type: none"> <li><del>• Geography 2102</del></li> <li><del>• Mathematics 2000</del></li> <li><del>• Mathematics 2050</del></li> <li><del>• Physics 2053</del></li> <li><del>• Physics 2820</del></li> </ul>	<ul style="list-style-type: none"> <li><del>• Geography 2195</del></li> <li><del>• Mathematics 2260</del></li> <li><del>• Mathematics 3202</del></li> <li><del>• Physics 2750</del></li> <li><del>• Elective</del></li> </ul>
<del>III</del>	<ul style="list-style-type: none"> <li><del>• Earth Sciences 2502</del></li> <li><del>• Physics 3220</del></li> <li><del>• Physics 3820</del></li> <li><del>• Physics 3400/3500</del></li> <li><del>• Physics 3340</del></li> </ul>	<ul style="list-style-type: none"> <li><del>• Biology 2120</del></li> <li><del>• Earth Sciences 3170</del></li> <li><del>• Geography 3120</del></li> <li><del>• Physics 2055</del></li> <li><del>• Physics 4820</del></li> </ul>
<del>IV</del>	<ul style="list-style-type: none"> <li><del>• Biology 2600</del></li> <li><del>• Earth Sciences 3172</del></li> <li><del>• Physics 3300</del></li> <li><del>• Physics 490A</del></li> </ul>	<ul style="list-style-type: none"> <li><del>• Physics 4205</del></li> <li><del>• Physics 4300</del></li> <li><del>• Physics 4340</del></li> <li><del>• Physics 490B</del></li> </ul>

	• Elective—	• Elective—
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## Secondary Calendar Changes

### 1. Accommodation of Majors in Environmental Physics: Prerequisites for Geography 2102.

#### 12.12 Geography

2102 Physical Geography: The Global Perspective is a study of form, process, and change in natural systems at and near the surface of Earth, viewed as human environment. Emphasis is on global and regional scales in the systematic study of climate, water, landforms and vegetation. All sections of this course follow Quantitative Reasoning Course Guidelines available at [www.mun.ca/hss/qr](http://www.mun.ca/hss/qr).

CR: ~~the former GEOG 2100, the former GEOG 2101~~

LH: 3

PR: GEOG 1050, or the former GEOG 1001, or the former GEOG 1011, or students following a major in Environmental Physics

### 2. Accommodation of Majors in Environmental Physics: Prerequisites for Biology 2600.

#### 11.2 Biology

2600 Principles of Ecology is a conceptual course introducing the principles of ecology, including theoretical, functional and empirical approaches.

CR: the former BIOL 3600

LH: 3

PR: Science 1807; BIOL 1001 and 1002, or BIOL 2120 and admission to a major in Environmental Physics

## Calendar Entry After Changes

### 9.10.4 Major in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)
3. Mathematics 1000 and 1001
4. Mathematics 2000, 2050, 2260, 3202
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), 3900
7. Earth Sciences 1000, 1002, 2502, 3600
8. Geography 2102, 2195, 3120
9. Biology 2120, 2600
10. Plus 30 additional credit hours from elective courses for a total of 120 credit hours.

The Major degree offers students a fair degree of latitude in choosing electives. Students are

encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences 3611, 3170, 3172 or 4105.

#### 9.10.5 Honours in Environmental Physics

1. English 1090 (or the former 1080) and English 1110 (or equivalent)
2. Chemistry 1050 and 1051 (or Chemistry 1010, 1011, and 1031)
3. Mathematics 1000 and 1001
4. Mathematics 2000, 2050, 2260, 3202
5. Physics 1050 (or 1020) and 1051
6. Physics 2053, 2055, 2300, 2820, 3220, 3300, 3340, 3820 (or Earth Sciences 3179), 3900, 4205, 4300, 4340, 490A/B.
7. Earth Sciences 1000, 1002, 2502, 3600
8. Geography 2102, 2195, 3120
9. Biology 2120, 2600
10. Plus 15 additional credit hours from elective courses for a total of 120 credit hours.

Students are encouraged to take Physics 2750 as well as electives from Geography and Earth Sciences: of particular merit would be any of Earth Sciences 3611, 3170, 3172 or 4105.

#### 12.12 Geography

2102 Physical Geography: The Global Perspective is a study of form, process, and change in natural systems at and near the surface of Earth, viewed as human environment. Emphasis is on global and regional scales in the systematic study of climate, water, landforms and vegetation. All sections of this course follow Quantitative Reasoning Course Guidelines available at [www.mun.ca/hss/qr](http://www.mun.ca/hss/qr).

LH: 3

PR: GEOG 1050, or the former GEOG 1001, or the former GEOG 1011, or students following a Major in Environmental Physics

#### 11.2 Biology

2600 Principles of Ecology is a conceptual course introducing the principles of ecology, including theoretical, functional and empirical approaches.

CR: the former BIOL 3600

LH: 3

PR: Science 1807; BIOL 1001 and 1002, or BIOL 2120 and admission to a Major in Environmental Physics

## **Rationale**

Both programs were introduced over a decade ago and will benefit from updating and streamlining the course requirements.

## **Major Program.**

1. The relatively new course PHYS 2300 (Introductory Physical Oceanography) has been added as it provides a useful overview of ocean systems and its interactions with other earth systems.
2. PHYS 2750, Modern Physics, has been removed as very little of the material covered in this course (special relativity and quantum physics) is relevant. Nuclear decay is covered in EASC 2502.
2. Students may now choose between PHYS 3820 (Mathematical Physics I) or EASC 3179 (Mathematical Methods for Geophysics) as both courses cover similar material relevant for the program.
3. PHYS 3900 (Physics Laboratory I) has been added. The focus of this course is to provide students with training in performing a set of detailed experiments and writing comprehensive reports. These are considered valuable skills for the Environmental Physics programs.
4. PHYS 4340 (Modelling in Environmental Physics) has been deleted from the major program as it is now considered an advanced course.
5. The requirement of either PHYS 3400 (Thermodynamics) or PHYS 3500 (Electromagnetic Fields I) has been deleted. This is due to the recent curriculum changes in the Department of Physics and Physical Oceanography where the material relevant to the Environmental Physics programs in these third-year courses now appears in the second-year courses PHYS 2053 and PHYS 2055.
6. The requirement of both EASC 3170 (Seismic and Potential Fields Methods in Geophysics ) and 3172 (Electric and Electromagnetic Methods in Geophysics) has been replaced by the requirement of a single course EASC 3600 (Environmental Geology) in an effort to streamline the program and as the latter course covers material relevant to the program.
7. Item number 10 has been added that explicitly states an additional 30 credit hours are required.
8. The notes to the student section has been updated.

## **Honours Program.**

Many of the proposed changes are in common with the Major program.

1. The relatively new course PHYS 2300 (Introductory Physical Oceanography) has been added as it provides a useful overview of ocean systems and its interactions with other earth systems.
2. PHYS 2750, Modern Physics, has been removed as very little of the material covered in this course (special relativity and quantum physics) is relevant. Nuclear decay is covered in EASC 2502.

2. Students may now choose between PHYS 3820 (Mathematical Physics I) or EASC 3179 (Mathematical Methods for Geophysics) as both courses cover similar material relevant for the program.
3. PHYS 3900 (Physics Laboratory I) has been added. The focus of this course is to provide students with training in performing a set of detailed experiments and writing comprehensive reports. These are considered valuable skills for the Environmental Physics programs.
4. PHYS 4820 (Mathematical Physics II) has been deleted from the program as it is now considered an unnecessary advanced course.
5. The requirement of either PHYS 3400 (Thermodynamics) or PHYS 3500 (Electromagnetic Fields I) has been deleted. This is due to the recent curriculum changes in the Department of Physics and Physical Oceanography where the material relevant to the Environmental Physics programs in these third-year courses now appears in the second-year courses PHYS 2053 and PHYS 2055.
6. The requirement of both EASC 3170 (Seismic and Potential Fields Methods in Geophysics ) and 3172 (Electric and Electromagnetic Methods in Geophysics) has been replaced by the requirement of a single course EASC 3600 (Environmental Geology) in an effort to streamline the program and as the latter course covers material relevant to the program.
7. Item number 10 has been added that explicitly states an additional 30 credit hours are required.
8. The notes to the student section has been updated. The Table describing the recommended schedule of courses has been deleted. A similar Table will be added to the department website.

### Secondary Changes

Accommodation of students following Major or Honours programs in Environmental Physics previously required prerequisite waivers to take Geography 2102 and Biology 2600. With the proposed changes, these waivers (always granted in the past) will not be required.

### Consultations Sought From

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

### Comments Received

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

13. Engineering

Yes

**Library Report Received**

Yes

**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: \_\_\_\_\_

From: Dawn King [Dawn.King@mi.mun.ca] on behalf of MIUG Consultations  
[MIUGconsultations@mi.mun.ca]  
Sent: August-18-17 1:40 PM  
To: Martin Plumer  
Subject: RE: Consultation: Calendar changes Environmental Physics.

Martin,

Thank you for the opportunity to review and respond to the proposed changes to the Major and Honours Programs in Environmental Physics.

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

All the best,  
Derek

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

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From: Engineering Consult [enrconsult@mun.ca]  
Sent: July-19-17 3:01 PM  
To: Martin Plumer  
Cc: jolantal@mun.ca; Jayde Edmunds  
Subject: Re: Consultation: Calendar changes Environmental Physics.

Dear Dr. Plumer,

Thank you for the opportunity to comment on the proposed changes to the Major and Honours programs in Environmental Physics.

The Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science considered this proposal at its regular meeting today (July 19).

The Committee finds that these proposals have no impact on the programs of our Faculty. We wish you well in the development of this proposal.

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

From: Catto, Norm [ncatto@mun.ca]  
Sent: June-28-17 9:05 AM  
To: Martin Plumer  
Cc: Joel Finnis  
Subject: RE: Consultation: Calendar changes Environmental Physics.  
Attachments: EnvPhysicsProgramsCalendarChangesv3.pdf

No issues from Geography

Norm Catto  
Head, Department of Geography  
Memorial University  
St. John's NL A1B 3X9  
Canada  
1-709-864-7463  
Fax 1-709-864-3119

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From: Suzanne Dufour [sdufour@mun.ca]  
Sent: June-27-17 11:55 AM  
To: plumer@mun.ca; jolantal@mun.ca; rgoulding@mun.ca;  
jodyb@mun.ca  
Subject: Calendar change - PR for Environmental Physics (BIOL 2600)

Hello Martin, Jolanta and Rick,

I am emailing regarding your request for modifying a calendar entry for BIOL 2600, Principles of Ecology. The undergraduate committee has discussed this and we have agreed to changing the prerequisite to accommodate your students. We have the following suggestion for modifying the entry:

PR: Science 1807; BIOL 1001 and 1002 or BIOL 2120 and admission to a major in Environmental Physics

We note that you did not explicitly specify that 2120 would be a prerequisite for 2600 (as a substitute to 1001 and 1002), but saw that according to your schedule, 2120 would normally be taken prior to 2600. Are you ok with our recommended suggestion? If so, we will proceed with the paperwork to make the change.

Best wishes,  
Suzanne

--

Dr. Suzanne Dufour  
Associate Professor  
Department of Biology  
Memorial University of Newfoundland  
St. John's, NL



A1B 3X9  
Canada

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From: Ambi, Alison [aambi@mun.ca]  
Sent: June-28-17 9:03 AM  
To: Martin Plumer  
Subject: RE: Consultation: Calendar changes Environmental Physics.

Hi Martin,  
These proposed changes will have no impact on library resources.  
Sincerley,  
Alison

---

Alison Ambi  
709 864 7125  
Interim Head, Collections

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

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

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**From:** "Catto, Norm" <ncatto@mun.ca>  
**Subject:** **Environmental Physics changes**  
**Date:** 10 October, 2017 2:16:29 PM NDT  
**To:** "saika@mun.ca" <saika@mun.ca>

Dear Ivan:

Following Shannon's suggestion on Friday, Geography 2100 and 2101 can be deleted as Credit Restrictions for the Geography 2102 course requirement in Environmental Physics.

Best wishes  
Norm

Norm Catto  
Head, Department of Geography  
Memorial University  
St. John's NL A1B 3X9  
Canada



Office of the Registrar .

St. John's, NL Canada A1C 5S7  
Tel: 709 864 8260 Fax: 709 864 2337  
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October 11, 2017

TO: All Members of Faculty Council, Faculty of Science

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

SUBJECT: **Proposals for Calendar Changes**

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At a meeting held on October 6, 2017, the Undergraduate Studies Committee of the Faculty of Science agreed to forward the following items Faculty Council for approval:

- **Department of Physics and Physical Oceanography**
  - Changes to the Minor program for students enrolled in the Bachelor of Engineering's Computer Engineering and Electrical Engineering programs.
  - Changes to the Major and Honours regulations for the Environmental Physics program.
- **Department of Biochemistry**
  - Changes to the Biochemistry Major and Biochemistry and Chemistry Joint Honours programs.
  - Changes to Biochemistry courses and secondary changes to other sections of the Calendar.
- **Department of Chemistry**
  - Changes to the course Chemistry 3211 (pre-requisites)

  
Maria Murray

**Proposal:  
Amendments to Calendar Entries for Biochemistry Programs**

**Executive Summary**

We propose changes to the Calendar entries for Biochemistry programs including 1) Rearrangements and minor edits and additions to improve clarity and fix typographical errors, 2) Changes to programs resulting from upcoming changes to Chemistry course offerings.

Biochemistry Program Changes

**Resource Implications: Instructional Costs**

None

**Consultations**

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

**Library Holdings and/or Other Resources Required**

There are no new library or other 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

#### Program Titles:

6.1.4 Biochemistry and Chemistry Joint Honours  
10.1 Biochemistry

#### Calendar Change(s)

##### 6.1.4 Biochemistry and Chemistry Joint Honours

The following courses are required:

1. Chemistry 1050 and 1051 (or Chemistry 1010, 1011 and the former 1031) (or Chemistry 1200 and 1001), Mathematics 1000 and 1001, Physics 1050 (or 1020) and 1051 (or 1021), 6 credit hours in first year English courses. Biology 1001 and 1002 are highly recommended;
2. Mathematics 2000;
3. Chemistry 2100, 2210, 2301, 2302, 2400, 2401, 3110, 3211, 3410;
4. Nine further credit hours in Chemistry courses numbered 3000 or higher, at least 6 credit hours of which must be in courses numbered 4000 or higher;
5. Biochemistry 2100, 2101, 3105, 3106, and either 3107, 3108, or Medicine 310A/B;
6. 12 credit hours chosen from Biochemistry 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201, 4210, ~~or 4211~~, 4210 or 4211, 4230-4249, 4230, 4231-4239, 4240, 4241-4249;
7. Either Chemistry 490A/B or Biochemistry 499A/B; and
8. A sufficient number of elective courses to bring the degree to a total of 120 credit hours.

**Note:** Students should check prerequisites for 4000 level courses before making decisions about their 3000 level courses and seek academic advice if necessary.

##### 10.1 Biochemistry

[www.mun.ca/biochem](http://www.mun.ca/biochem)

The following undergraduate programs are available in the Department:

1. Biochemistry and Cell Biology/Microbiology Joint Honours
2. Biochemistry and Chemistry Joint Honours
3. Biochemistry and Physics Joint Honours
4. Biochemistry and Psychology (Behavioural Neuroscience) Joint Honours

#### Biochemistry Program Changes

5. Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) Joint Honours
6. Major or Honours in Biochemistry
7. Major or Honours in Nutrition
8. Minor in Biochemistry

Students who wish to enrol in any of these programs should plan their program well in advance so that they will have taken the appropriate prerequisites. Entry to a number of required courses is limited and will be determined by academic performance. Required courses should be taken in the year indicated by the course numbers so as to avoid timetable clashes and missing prerequisites which could prolong the time necessary to complete the program. Students are advised to consult with the Department at the earliest opportunity.

Candidates for the general and honours degrees in the programs above should refer to the Faculty of Science **Degree Regulations** for the **General** and **Honours** degrees of Bachelor of Science.

Candidates for a minor in Biochemistry should refer to the **Regulations for the General Degree of Bachelor of Science**, Clause 7.

Students who intend to pursue graduate studies should take the courses leading to the honours degree.

Biochemistry course descriptions are found at the end of the Faculty of Science section under **Course Descriptions, Biochemistry**.

Students are encouraged to choose a minor.

For the purposes of a Major, Honours, or Minor degree in Biochemistry, Medicine 310A/B and Chemistry 2400, 2401 count as Biochemistry courses. For the purposes of a Major or Honours degree in Biochemistry(Nutrition), Medicine 310A/B count as Biochemistry courses.

~~Note: Supplementary examinations will be allowed in certain Biochemistry courses which have written final examinations. Students should refer to the Faculty of Science Degree Regulations for details.~~

Supplementary examinations will be allowed in certain Biochemistry courses which have written final examinations. Students should refer to the Faculty of Science Degree Regulations for details.

#### 10.1.1 Admission to Programs

Students who wish to declare a Major in Biochemistry or Biochemistry (Nutrition) or who wish to apply for Honours standing in any of our programs are strongly recommended to do so by May 31 in any year. Failure to apply by the recommended date may result in your application not being processed before your registration time. In addition, students who do not declare by this date ~~may not be considered~~ might escape consideration for departmental scholarships or other awards.

## Biochemistry Program Changes

**10.1.1.1 Admission to the Major in Biochemistry**

Entry to the Major in Biochemistry program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.
  - a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
  - b. Chemistry 1050, 1051
  - c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109 A/B, 1000)
  - d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002

Notes:

1. *Students are required to complete at least 78 credit hours in Science courses for the General Degree.*
2. *Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.*
3. *It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.*
4. *For the purposes of a Biochemistry degree, Medicine 310A/B count as Biochemistry courses.*

**10.1.1.2 Admission to the Honours Degree in Biochemistry**

Students normally should apply for an Honours program at the completion of their third year of studies. ~~Honours students would normally follow the Biochemistry Majors program before applying to honours, and must meet its admissions requirements as follows: To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry 2400.~~

~~English 1090 or the former 1080, 1110 (or equivalent)~~

~~Chemistry 1050 and 1051 (or 1200 and 1001)~~

~~Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000)~~

~~Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002~~

To be eligible for admission, students must be in Honours standing **as per 7.5.6.1 of the Regulations for the Honours Degree of Bachelor of Science**. To be considered for early admission to an Honours program in Biochemistry at the end of second year, students must have achieved at least 70% in each of Biochemistry 2100 and 2101 and Chemistry 2400, 2401.

**10.1.1.3 Admission to the Major in Nutrition**

### Biochemistry Program Changes

Entry to the Major in Nutrition program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.
  - a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
  - b. Chemistry 1050, 1051 ~~(or Chemistry 1010, 1011 or 1200, 1001)~~ (or Chemistry 1010, 1050 or Chemistry 1200, 1001)
  - c. Mathematics 1090, 1000 (or Mathematics 109A/B, or Mathematics 1000 and one elective)
  - d. Biology 1001, 1002 or Physics 1020, 1021 (or 1050, 1051) ~~(or equivalent)~~

#### 10.1.1.4 Admission to the Honours Degree in Biochemistry (Nutrition)

Students normally should apply for an Honours program at the completion of their third year of studies. ~~Honours students would normally follow the Biochemistry (Nutrition) Majors program before applying to honours, and must meet its admissions requirements as follows:~~

- ~~1. To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%:~~
  - ~~a. English 1090 or the former 1080, 1110 (or equivalent)~~
  - ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011, or 1200, 1001)~~
  - ~~c. ——— Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective)~~
  - ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent)~~

To be eligible for admission to the honours program, students must be in Honours standing as per 7.5.6.1 of the **Regulations for the Honours Degree of Bachelor of Science**. To be considered for early admission to an Honours program in Nutrition at the end of second year, students must have achieved at least 70% in each of their required 2000 level Biochemistry and Chemistry courses.

#### **10.1.2 10.1.2.1 Major in Biochemistry**

~~Entry to the Biochemistry Majors program is based on academic standing.~~

- ~~1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry~~



## Biochemistry Program Changes

~~2400.~~

- ~~a. English 1090 or the former 1080, 1110 (or equivalent)~~
- ~~b. Chemistry 1050 and 1051 (or 1200 and 1001)~~
- ~~c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000)~~
- ~~d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002~~

Required courses to complete the major:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000, 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, Chemistry 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108.
- c. At least 12 credit hours in courses from Biochemistry 2600, 3203, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, ~~4230-4239~~
- d. ~~Medicine 310A/B or 6 credit hours from Biochemistry 4240-4249, Biology 2060, 3050, 3401, 3402, 3530, 4200, 4245, 4404, Chemistry 4201, 4701.~~ Six additional credit hours chosen from: Medicine 310A/B, Biochemistry 2600, Biology 2060, 3050, Chemistry 4201, 4701 or Biochemistry courses at the 3000 or 4000 level.
- e. Chemistry 2301 or Physics 2053; Chemistry 2400, 2401.
- f. One of Chemistry 2100, Environmental Sciences 3210.
- g. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the degree total up to 120 credit hours.

~~Notes: 1. Students are required to complete at least 78 credit hours in Science courses for the General Degree.~~

~~2. Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.~~

~~3. It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.~~

~~4. For the purposes of a Biochemistry degree, Medicine 310A/B count as Biochemistry courses.~~

~~2. Students are encouraged to choose a minor.~~

**10.1.2.1 10.1.2.2 Honours Degree in Biochemistry**

## Biochemistry Program Changes

~~Students normally should apply for an Honours program at the completion of their third year of studies. Honours students would normally follow the Biochemistry Majors program before applying to honours, and must meet its admissions requirements as follows:~~

- ~~1. —To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%. In addition, students must be eligible for entry to Chemistry 2400.—~~
  - ~~a. English 1090 or the former 1080, 1110 (or equivalent)—~~
  - ~~b. Chemistry 1050 and 1051 (or 1200 and 1001)—~~
  - ~~c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000)—~~
  - ~~d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002—~~
- ~~2. —To be eligible for admission, students must be in Honours standing. To be considered for early admission to an Honours program in Biochemistry at the end of second year, students must have achieved at least 70% in each of Biochemistry 2100 and 2101 and Chemistry 2400, 2401.—~~

## 1. Required courses:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, Chemistry 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108, 4102, 499A, 499B, Medicine 310A/B and either Biochemistry 4210 or 4211.
- ~~c. Biochemistry 4210 or 4211.—~~
- c. Twelve credit hours in courses from Biochemistry 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, 4230-4239.
- ~~d.—At least 6 credit hours in courses from Biochemistry 2600, 3203, 4240-4249, Biology 2060, 3050, 3530, 4200, 4245, 4404, Chemistry 4201, 4701—At least 6 credit hours chosen from Biochemistry 2600, Biology 3050, Chemistry 4201, 4701, or Biochemistry courses at the 3000 or 4000 level—~~
- f. Biology 1001 and 1002; Mathematics 1001; and Physics 1050 (or 1020), 1051 (or 1021), for those students who did not complete them in first year. (See Notes 1. and 2. below).
- ~~g. Chemistry 1051 is a required course for the major in Biochemistry and must normally be completed prior to entrance into 2nd year Chemistry and Biochemistry courses.—~~

## Biochemistry Program Changes

~~Students who do not meet the requirements for entry into Chemistry 1050 from high school can take Chemistry 1010 followed by Chemistry 1050 and 1051. It is strongly recommended that these students complete Chemistry 1051 prior to second year.~~

- e. Chemistry 2301 or Physics 2053, Chemistry 2400, 2401, one of ~~Chemistry 3410 or 3411~~ Chemistry 3411 or 4410.
- f. One of Chemistry 2100, Environmental Sciences 3210.
- g. Statistics 2550 or equivalent
- h. A sufficient number of elective courses to bring the total for the degree up to 120 credit hours.

~~Notes: 1. Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.~~

~~2. It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.~~

~~3. For the purposes of a Honours Degree in Biochemistry, Medicine 310A/B count as Biochemistry courses.~~

~~4. Students are encouraged to choose a minor.~~

- 2. Those courses in which a grade "B" or an average of 75% or higher are required, as specified under **7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science**, are those listed in clauses 1 (b), (c), and (d) above and Chemistry 2400 and 2401.

**10.1.2.2** **10.1.2.3** **Minor in Biochemistry**

Students who take a minor in Biochemistry will complete:

- 1. Biochemistry 2101, 3106
- 2. One of Biochemistry 2100, 2600, Biology 2250.
- 3. Nine credit hours in Biochemistry at the ~~third or fourth~~ **3000 or 4000 year** level; or 6 credit hours in Biochemistry at the **3000 or 4000 year level** ~~third or fourth year level~~ and Biology 3050.
- 4. ~~Either Chemistry 2400, 2401 or Chemistry 2440 and 3 additional credit hours from the Biochemistry courses listed in 3. above.~~ Either Chemistry 2400 and 2401 OR Chemistry 2400 and one additional Biochemistry course at the 3000 or 4000 level.

Course prerequisites stipulated in the course descriptions shall apply to a minor in Biochemistry.

~~Note: For the purposes of a Biochemistry minor, Medicine 310A/B count as Biochemistry courses.~~

**10.1.3 Nutrition Program**

## Biochemistry Program Changes

**10.1.3.1 10.1.2.4 Major in Nutrition**

~~Entry to the Nutrition majors program is based on academic standing.~~

~~1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.~~

- ~~a. English 1090 or the former 1080, 1110 (or equivalent)~~
- ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011 or 1200, 1001)~~
- ~~c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective)~~
- ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent)~~

1. Required courses to complete the major:

- a. English 1090 or the former 1080 (or 1000) and 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000; Physics 1020 and 1021 (or Physics 1050 and 1051); Chemistry 1050 and Chemistry 1051 (or Chemistry 1200 and 1001).
- b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3203, 3402, 4300, 4301, Medicine 310A/B
- c. Six credit hours in courses from Biochemistry 3052, 3107, 3108, 3202, 3600, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, 4240, 4241-4249, 4230-4249, Biology 3050.
- ~~d. Biology 1001 and 1002; and Physics 1020 and 1021 (or equivalent), for those students who did not complete them in first year~~
- d. Chemistry 2440 (or Chemistry 2400, 2401) Chemistry 2400
- e. Statistics 2550 or equivalent
- f. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the total for the degree up 120 credit hours.

~~Students are encouraged to choose a minor.~~

~~Notes: 1. Students are required to complete at least 78 credit hours in Science courses for the General Degree.~~

~~2. Students who choose to complete Chemistry 2400/2401 are advised to take the appropriate prerequisites for those courses. 3. For the purposes of a Biochemistry (Nutrition) degree, Medicine 310A/B count as Biochemistry courses.~~

**10.1.3.2 10.1.2.5 Honours Degree in Nutrition**

## Biochemistry Program Changes

~~Students normally should apply for an Honours program at the completion of their third year of studies. Honours students would normally follow the Biochemistry (Nutrition) Majors program before applying to honours, and must meet its admissions requirements as follows:~~

- ~~1. To be considered for admission to the majors program prior to admission to honours, students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%:
 
  - ~~a. English 1090 or the former 1080, 1110 (or equivalent)—~~
  - ~~b. Chemistry 1050, 1051 (or Chemistry 1010, 1011, or 1200, 1001)—~~
  - ~~c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000 or Mathematics 1000 and one elective)—~~
  - ~~d. Biology 1001, 1002 or Physics 1020, 1021 (or equivalent)—~~~~
- ~~2. To be eligible for admission to the honours program, students must be in Honours standing. To be considered for early admission to an Honours program in Nutrition at the end of second year, students must have achieved at least 70% in each of their required 2000 level Biochemistry and Chemistry courses.—~~

## 1. Required courses:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000; Physics 1020 (or 1050) and 1021 (or 1051) (or equivalent); Chemistry 1050, 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3107, 3203, 3402, 3600, 4002, 4300, 4301, 4502, 499A, 499B, Medicine 310A/B.
- c. Twelve additional credit hours chosen from Biochemistry 3052, 3105, 3108, 3202, 4101, 4103, 4104, 4105, 4200, 4201, 4210, 4211, 4230, 4231-4239, 4240, 4241-4249, 4230-4249, Biology 3050, Chemistry 4701.
- ~~d. Biology 1001 and 1002; and Physics 1020 and 1021 (or equivalent), for those students who did not complete them in first year.—~~
- e. ~~Chemistry 2440 (or Chemistry 2400, 2401).~~ Chemistry 2400
- f. Statistics 2550 or equivalent.
- i. A sufficient number of elective courses to bring the total for the degree up to 120 credit hours.

~~2. Students are encouraged to choose a minor.—~~

## Biochemistry Program Changes

3. Those courses in which the grades specified under **7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science** are 60 credit hours chosen from Biochemistry courses, Med 310A/B, and Biology 3050.

Notes: ~~1. Students who choose to complete Chemistry 2400/2401 are advised to take the appropriate prerequisites for those courses.—~~

~~2. For the purposes of a Biochemistry (Nutrition) Honours degree, Medicine 310A/B count as Biochemistry courses.—~~

## Secondary Calendar Changes

Not applicable

## Calendar Entry After Changes

### 6.1.4 Biochemistry and Chemistry Joint Honours

The following courses are required:

1. Chemistry 1050 and 1051 (or Chemistry 1010, 1011 and the former 1031) (or Chemistry 1200 and 1001), Mathematics 1000 and 1001, Physics 1050 (or 1020) and 1051 (or 1021), 6 credit hours in first year English courses. Biology 1001 and 1002 are highly recommended;
2. Mathematics 2000;
3. Chemistry 2100, 2210, 2301, 2302, 2400, 2401, 3110, 3211, 3410;
4. Nine further credit hours in Chemistry courses numbered 3000 or higher, at least 6 credit hours of which must be in courses numbered 4000 or higher;
5. Biochemistry 2100, 2101, 3105, 3106, and either 3107, 3108, or Medicine 310A/B;
6. 12 credit hours chosen from Biochemistry 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201 or 4211 4230, 4231-4239, 4240, 4241-4249;
7. Either Chemistry 490A/B or Biochemistry 499A/B; and
8. A sufficient number of elective courses to bring the degree to a total of 120 credit hours.

**Note:** *Students should check prerequisites for 4000 level courses before making decisions about their 3000 level courses and seek academic advice if necessary.*

## 10.1 Biochemistry

[www.mun.ca/biochem](http://www.mun.ca/biochem)

The following undergraduate programs are available in the Department:

1. Biochemistry and Cell Biology/Microbiology Joint Honours

#### Biochemistry Program Changes

2. Biochemistry and Chemistry Joint Honours
3. Biochemistry and Physics Joint Honours
4. Biochemistry and Psychology (Behavioural Neuroscience) Joint Honours
5. Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) Joint Honours
6. Major or Honours in Biochemistry
7. Major or Honours in Nutrition
8. Minor in Biochemistry

Students who wish to enrol in any of these programs should plan their program well in advance so that they will have taken the appropriate prerequisites. Entry to a number of required courses is limited and will be determined by academic performance. Required courses should be taken in the year indicated by the course numbers, so as to avoid timetable clashes and missing prerequisites which could prolong the time necessary to complete the program. Students are advised to consult with the Department at the earliest opportunity.

Candidates for the general and honours degrees in the programs above should refer to the Faculty of Science **Degree Regulations** for the **General** and **Honours** degrees of Bachelor of Science.

Candidates for a minor in Biochemistry should refer to the **Regulations for the General Degree of Bachelor of Science**, Clause 7.

Students who intend to pursue graduate studies should take the courses leading to the honours degree.

Biochemistry course descriptions are found at the end of the Faculty of Science section under **Course Descriptions, Biochemistry**.

Students are encouraged to choose a minor.

For the purposes of a Major, Honours, or Minor degree in Biochemistry, Medicine 310A/B and Chemistry 2400, 2401 count as Biochemistry courses. For the purposes of a Major or Honours degree in Biochemistry(Nutrition), Medicine 310A/B count as Biochemistry courses.

Supplementary examinations will be allowed in certain Biochemistry courses which have written final examinations. Students should refer to the Faculty of Science Degree Regulations for details.

#### **10.1.1 Admission to Programs**

Students who wish to declare a Major in Biochemistry or Biochemistry (Nutrition) or who wish to apply for Honours standing in any of our programs are strongly recommended to do so by May 31 in any year. Failure to apply by the recommended date may result in your application not being processed

### Biochemistry Program Changes

before your registration time. In addition, students who do not declare by this date might escape consideration for departmental scholarships or other awards.

#### 10.1.1.1 Admission to the Major in Biochemistry

Entry to the Major in Biochemistry program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.
  - a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
  - b. Chemistry 1050, 1051 (or Chemistry 1010, 1050 or Chemistry 1200, 1001)
  - c. Mathematics 1000, 1001 (or Mathematics 1090, 1000, or Mathematics 109A/B, 1000)
  - d. Physics 1050 (or 1020), 1051 (or 1021), or Biology 1001, 1002

#### *Notes:*

1. *Students are required to complete at least 78 credit hours in Science courses for the General Degree.*
2. *Students taking Mathematics 1000 should take Physics 1050 as their first Physics course.*
3. *It is recommended that students who wish to pursue future studies in biophysics or related fields or who are considering postgraduate health professional programs take Physics 1050 as their first Physics course.*

#### 10.1.1.2 Admission to the Honours Degree in Biochemistry

Students normally should apply for an Honours program at the completion of their third year of studies. To be eligible for admission, students must be in Honours standing as per 6.5.6.1 of the Regulations for the Honours Degree of Bachelor of Science. To be considered for early admission to an Honours program in Biochemistry at the end of second year, students must have achieved at least 70% in each of Biochemistry 2100 and 2101 and Chemistry 2400, 2401.

#### 10.1.1.3 Admission to the Major in Nutrition

Entry to the Major in Nutrition program is based on academic standing.

1. To be considered for admission to the program students must have at least 30 credit hours in courses and have successfully completed the following courses (or their equivalents) with a minimum overall average of 60%.
  - a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent)
  - b. Chemistry 1050, 1051 (or Chemistry 1010, 1050 or Chemistry 1200, 1001)



## Biochemistry Program Changes

c. Mathematics 1090, 1000 (or Mathematics 109A/B, 1000, or Mathematics 1000 and one elective)

d. Biology 1001, 1002 or Physics 1020, 1021 (or 1050,1051)

**10.1.1.4 Admission to the Honours Degree in Biochemistry (Nutrition)**

Students normally should apply for an Honours program at the completion of their third year of studies. -To be eligible for admission to the honours program, students must be in Honours standing as per 6.5.6.1 of the Regulations for the Honours Degree of Bachelor of Science. To be considered for early admission to an Honours program in Nutrition at the end of second year, students must have achieved at least 70% in each of their required 2000 level Biochemistry and Chemistry courses.

**10.1.2.1 Major in Biochemistry**

Required courses to complete the major:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000, 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108.
- c. At least 12 credit hours in courses from Biochemistry 2600, 3203, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239.
- d. Six additional credit hours chosen from: Medicine 310A/B, Biochemistry 2600, Biology 2060, Biology 3050, Chemistry 4201, 4701 or Biochemistry courses at the 3000 or 4000 level.
- e. Chemistry 2301 or Physics 2053; Chemistry 2400, 2401.
- f. One of Chemistry 2100, Environmental Sciences 3210.
- g. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the degree total up to 120 credit hours.

**10.1.2.2 Honours Degree in Biochemistry**

1. Required courses:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1001; Physics 1050 (or 1020), 1051 (or 1021); Chemistry 1050, 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2100, 2101, 3105, 3106, 3107, 3108, 4102, 499A, 499B, Medicine 310A/B, and either Biochemistry 4210 or 4211.

## Biochemistry Program Changes

- c. Twelve credit hours in courses from Biochemistry 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239.
  - d. Six additional credit hours chosen from Biochemistry 2600, Biology 3050, Chemistry 4201, 4701, or Biochemistry courses at the 3000 or 4000 level.
  - e. Chemistry 2301 or Physics 2053, Chemistry 2400, 2401, one of Chemistry 3411 or 4410.
  - f. One of Chemistry 2100, Environmental Sciences 3210.
  - g. Statistics 2550 or equivalent
  - h. A sufficient number of elective courses to bring the total for the degree up to 120 credit hours.
2. Those courses in which a grade "B" or an average of 75% or higher are required, as specified under **7.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science**, are those listed in clauses 1 (b), (c), and (d) above and Chemistry 2400 and 2401.

**10.1.2.3 Minor in Biochemistry**

Students who take a minor in Biochemistry will complete:

1. Biochemistry 2101, 3106
2. One of Biochemistry 2100, 2600, Biology 2250.
3. Nine credit hours in Biochemistry at the 3000 or 4000 level; or 6 credit hours in Biochemistry at the 3000 or 4000 level and Biology 3050.
4. Either Chemistry 2400 and 2401, or Chemistry 2400 and one additional Biochemistry course at the 3000 or 4000 level.

Course prerequisites stipulated in the course descriptions shall apply to a minor in Biochemistry.

**10.1.2.4 Major in Nutrition**

1. Required courses to complete the major:

- a. English 1090 or the former 1080 (or 1000) and 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000; Physics 1020 and 1021 (or Physics 1050 and 1051); Chemistry 1050, 1051 (or Chemistry 1200 and 1001).
- b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3203, 3402, 4300, 4301, Medicine 310A/B
- c. Six credit hours in courses from Biochemistry 3052, 3107, 3108, 3202, 3600, 4002, 4101, 4103, 4104, 4105, 4200, 4201, 4230, 4231-4239, 4240, 4241-4249, Biology 3050.

## Biochemistry Program Changes

## d. Chemistry 2400

## e. Statistics 2550 or equivalent

f. A sufficient number of elective courses to bring the total Science courses up to at least 78 credit hours and the degree up to a total of 120 credit hours.

**10.1.2.5 Honours Degree in Nutrition**

## 1. Required courses:

- a. English 1090 or the former 1080 (or 1000), 1110 (or equivalent); Biology 1001 and 1002; Mathematics 1000; Physics 1020 (or 1050) and 1021 (or 1051); Chemistry 1050, 1051 (or Chemistry 1200,1001).
- b. Biochemistry 2005, 2100, 2101, 2600, 3106, 3107, 3203, 3402, 3600, 4002, 4300, 4301, 4502, 499A, 499B, Medicine 310A/B.
- c. Twelve additional credit hours chosen from Biochemistry 3052, 3105, 3108, 3202, 4101, 4103, 4104, 4105, 4200, 4201, 4210, 4211, 4230, 4231-4239, 4240, 4241-4249, Biology 3050, Chemistry 4701.
- d. Chemistry 2400
- e. Statistics 2550 or equivalent
- f. A sufficient number of elective courses to bring the degree up to a total of 120 credit hours.

2. Those courses in which the grades specified under **6.5.6.1** of the **Regulations for the Honours Degree of Bachelor of Science** are 60 credit hours chosen from Biochemistry courses, Med 310A/B, and Biology 3050.

**Rationale**

We propose changes to the Calendar entries for Biochemistry programs to improve clarity, update program regulations in light of changes to our course offerings, and to fix typographical errors. In addition, changes to program regulations are proposed to take account of upcoming changes to Chemistry course offerings.

1. Fixed an error in 6.1.4.6
2. Two former special topics courses, Bioc 4230 and 4240, are now regular courses and so have been split out from the Bioc 4230-4249 in our program requirements.
3. Admission requirements and program requirements had appeared together in the same sections (the former 10.1.2 and 10.1.3) of the Calendar. For clarity, the admission requirements have been placed in their own sections, now 10.1.1.1-10.1.1.4, while the requirements for the degree programs now appear in 10.1.2.1 to 10.1.2.5. This rearrangement

## Biochemistry Program Changes

also allowed us to delete several notes that appeared multiple times.

4. Program requirements (10.1.2) have been rearranged to present all the first year course requirements in the same clause. A minor rearrangement in the Biochemistry Majors (10.1.2.1.1.d) and Honours (10.1.2.2.1.d) course requirements has been made to allow students a bit more flexibility in their choice of courses.
5. We revisited all the instances of “(or equivalent)” and removed them where they are not needed. In the same vein, we added in specific reference to the Grenfell Campus first year course equivalents. Similarly, we have added specific mention of the equivalent first year physics courses to the Biochemistry(Nutrition) programs.
6. Chemistry has indicated they will cease to offer Chem 1010 and Chem 2440. We have opted to make the consequent changes to our programmes as part of this general revision. The only substantive change to our programs is to replace the Chem 2440 requirement in the Biochemistry(Nutrition) programs with Chem 2400. Chemistry has also renumbered Chem 3410 – it is now Chemistry 4410 but has the same pre-requisites – we have made the replacement within the programs in 10.1.
7. We have added a clause to the end of 10.1.2.2 and 10.1.2.5 to clarify which courses are to be used in the calculation of honours standing.

**Consultations Sought From****Comments Received**

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

Biology	yes
Chemistry	yes
Computer Science	no
Earth Sciences	no
Education	no
Engineering	yes
Geography	yes
Grenfell	no
Humanities and Social Sciences	no
Marine Institute	yes
Mathematics and Statistics	no
Medicine	yes
Ocean Sciences	yes
Pharmacy	yes
Physics and Physical Oceanography	yes
Psychology	no

**Library Report Received**

No

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

Biochemistry Program Changes

Name \_\_\_\_\_

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**APPROVAL GRANTED BY SENATE COMMITTEE ON UNDERGRADUATE STUDIES**

Chair: \_\_\_\_\_

Secretary: \_\_\_\_\_

Date: \_\_\_\_\_

**Consultation**

(note that the consultation version of the proposed changes used the numbering from the previous year's calendar, so while all the conversation was about 9.x.x etc., the proposal has been updated with the new section numbering, 10.x.x.etc.)

From: Valerie Booth <vbooth@mun.ca>

Subject: consultation and library report request for changes to Biochemistry programs and courses

Date: June 8, 2017 at 12:10:32 PM NDT

To: Jody-Lynn Burke <jodyb@mun.ca>, "chemconsult@mun.ca" <chemconsult@mun.ca>, Sharene Bungay <sharene@mun.ca>, "Dr. Penny Morrill" <pmorrill@mun.ca>, engrconsult@mun.ca, associatevpoffice@grenfell.mun.ca, ncatto@mun.ca, staceym@mun.ca, miugconsultations@mi.mun.ca, Shannon Sullivan <shannon@mun.ca>, Dean@med.mun.ca, amercier@mun.ca, pharminfo@mun.ca, cthorpe@mun.ca, univlib@mun.ca, Martin Plummer <plumer@mun.ca>

Cc: Biochemistry Head <biohead@mun.ca>, Valerie Booth <vbooth@mun.ca>

Hi All,

This is a request for feedback on proposed changes to Biochemistry programs and courses. At first glance, it will appear that there are a lot of changes in the programs. However, this is mostly just a big rearrangement to make our calendar pages clearer, plus a few housekeeping changes.

Best,

Valerie

Biochemistry Program Changes

.....

Valerie Booth

Professor

Deputy Head (undergraduate) Department of Biochemistry and

Department of Physics and Physical Oceanography

Memorial University of Newfoundland

St. John's, NL, A1B 3X9, Canada

phone 709 864-4523 fax: 709 864-2422

homepage: <http://www.faculty.mun.ca/vbooth/>

---

From: "Catto, Norm" <ncatto@mun.ca>

Subject: RE: consultation and library report request for changes to Biochemistry programs and courses

Date: June 8, 2017 at 1:08:24 PM NDT

To: Valerie Booth <vbooth@mun.ca>

No issues from Geography

Norm Catto

Head, Department of Geography

Memorial University

St. John's NL A1B 3X9

Canada

1-709-864-7463

Fax 1-709-864-3119

---

From: Engineering Consult <engrconsult@mun.ca>

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 12, 2017 at 9:17:22 AM NDT

To: Valerie Booth <vbooth@mun.ca>

Cc: Dennis Peters <dpeters@mun.ca>, Theodore Norvell <theo@mun.ca>, Jayde Edmunds <edmundsj@mun.ca>, biohead@mun.ca

Dear Dr. Booth,

Thank you for the opportunity to comment on the proposed changes to Biochemistry programs and courses.

Biochemistry Program Changes

The Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science will consider these proposals at its next scheduled meeting on June 21.

At this time I am replying with my opinion that the proposed changes will have no impact on the programs of the Faculty of Engineering and Applied Science. However I do have one question.

The admissions requirements for the Biochemistry major and the nutrition major omit CHEM 1051 for those students who take CHEM 1010 before CHEM 1050. Is this intentional? It doesn't seem to be a problem, as CHEM 1051 remains a requirement for the majors for all students.

If our CUGS has any further comments on this proposal then I will forward them to you after that meeting.

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

---

From: Valerie Booth <vbooth@mun.ca>  
Subject: Re: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 14, 2017 at 10:30:28 AM NDT  
To: Engineering Consult <enrconsult@mun.ca>  
Cc: Dennis Peters <dpeters@mun.ca>, Theodore Norvell <theo@mun.ca>, Jayde Edmunds <edmundsj@mun.ca>, biohead@mun.ca

Thanks for the feedback Glyn.

Yes - the option to use 1010 and 1050 instead of 1050 and 1051 is indeed intentional - we'd like all our students to be able to declare their major at the end of first year and catch up on the chemistry later on in their program if needed.

Best,

Valerie

---

From: "T.S.Norvell" <theo@mun.ca>

Biochemistry Program Changes

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 23, 2017 at 2:08:18 PM NDT

To: Valerie Booth <vbooth@mun.ca>

Cc: Engineering Consult <engrconsult@mun.ca>, Dennis Peters <dpeters@mun.ca>, Jayde Edmunds <edmundsj@mun.ca>, biohead@mun.ca

Hi Dr. Booth: The Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science looked at your proposal at our meeting this week and no impact on our programs was noted and no additional comments were made.

Theodore Norvell, Acting Chair, FEAS CUGS

---

From: "Phillips, Leslie" <lphillip@mun.ca>

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 12, 2017 at 4:24:30 PM NDT

To: "vbooth@mun.ca" <vbooth@mun.ca>, Biochemistry Head <biohead@mun.ca>

Cc: "Glew, Csop" <cglew@mun.ca>, "Healey, Elaine" <ehealey@mun.ca>

Hi Folks,

Thank you for the opportunity to provide feedback on your proposed calendar changes. AS you are aware, Pharmacy 2004 (Intro to Biochemistry) is credit restricted with BIOC2101, so I'm wondering if there's an opportunity here to do a secondary calendar change to align the courses as much as possible.

Your proposed changes to BIOC2101: *(Note: I am suggesting you add brackets around "or 1050" for consistency in the PR section – I added them in red font. I am also suggesting you remove the word "will" in your calendar description or add it to ours – I don't think it's needed.)*

**2101 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics ~~will~~ include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Pharmacy 2004, or the former Pharmacy 3110

LH: one three-hour laboratory period on alternate weeks

PR: Chemistry 2400 ~~and 2401, or Chemistry 2440~~; and Physics 1020 (or 1050), and 1021 (or



Biochemistry Program Changes

1051); and Science 1807. ~~Chemistry 2401 and Physics 1021 or 1051~~ can be done concurrently.

Our course description for PHAR 2004 (with suggested secondary changes – additions in **bolded, underlined font** and deletions using ~~strikethrough~~)

**2004 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Biochemistry 2101

OR: tutorials as required

PR: ~~Chemistry 2400 and 2401, or Chemistry 2440;~~ **and Physics 1020 (or 1050), and 1021 (or 1051); and Science 1807**

We do not require a lab component for PHAR2004; so that part does not need to be added to our version of the course. We are okay with removing CHEM2401 and 2440 as prerequisites for our course as well - as we have changed our required admission prerequisite organic chemistry course from 2440 to 2400 and 2401. Our students will take CHEM2400 in the fall semester in the first year of our program and will then take CHEM2401 and PHAR 2004 in the following winter semester. So they will have completed CHEM2400 before taking PHAR2004. Physics 1020 (or 1050) and 1021 (or 1051) are prerequisite courses for admission into our program so they must be done prior to admission (whereas CHEM 2400/2401 are done once admitted to the Pharmacy program) so these physics courses cannot be done concurrently with PHAR2004. So the statement "Physics 1021 or 1051 can be done concurrently" should not be added to the description for our course.

Hope this makes sense...

Leslie

DR. LESLIE PHILLIPS  
ASSOCIATE DEAN UNDERGRADUATE STUDIES  
PROFESSOR | MUN SCHOOL of PHARMACY  
Joint Appointment | MUN FACULTY of MEDICINE/Psychiatry  
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Biochemistry Program Changes  
Health Sciences Centre  
300 Prince Philip Dr | St. John's, NL | A1B 3V6  
Ph: 709-777-8299  
Fax: 709-777-7044

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**From:** Heather Bugler <hbugler@mun.ca> **Date:** Thursday, June 8, 2017 at 12:19 PM **To:** Csop Glew <cglew@mun.ca>, Chair <lphillip@mun.ca> **Subject:** FW: consultation and library report request for changes to Biochemistry programs and courses

## Heather

Heather Bugler  
Assistant to the Dean  
School of Pharmacy  
Memorial University of Newfoundland  
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**\*\*\* Our new Medication Therapy Services Clinic... now open!\*\*\***

Biochemistry Program Changes



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From: Valerie Booth <vbooth@mun.ca>  
Subject: Re: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 13, 2017 at 8:58:18 AM NDT  
To: "Phillips, Leslie" <lphillip@mun.ca>  
Cc: Biochemistry Head <biohead@mun.ca>, "Glew, Csop" <cglew@mun.ca>, "Healey, Elaine" <ehealey@mun.ca>

Hi Leslie,

Your suggestions generally looks fine to me. But, I think I would skip the Science 1807 pre-req for Phar 2004 since it doesn't have a lab component.

Thanks for your suggestions.

Valerie

---

From: Department of Chemistry Consult <chemconsult@mun.ca>  
Subject: Re: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 13, 2017 at 9:44:02 AM NDT  
To: Valerie Booth <vbooth@mun.ca>

Hi Valerie,

I have sent the proposals on to everyone in the department for comments.

Biochemistry Program Changes

The only one I have now is a minor error (I think), under BIOL 2250, the CR should be BIOC 2100, not BIOL 2250.

Take care,  
Travis

---

From: MIUG Consultations <MIUGconsultations@mi.mun.ca>  
Subject: RE: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 13, 2017 at 10:10:20 AM NDT  
To: Valerie Booth <vbooth@mun.ca>

Valerie,

Thank you for the opportunity to review and comment on the proposed changes to Biochemistry 2005, 2100, 2101, 3402, 4211.

These changes will have no impact on the programs at the Marine Institute.

We are happy to support these changes as presented.

All the best,  
Derek

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

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From: MIUG Consultations <MIUGconsultations@mi.mun.ca>  
Subject: RE: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 13, 2017 at 10:11:51 AM NDT  
To: Valerie Booth <vbooth@mun.ca>

Biochemistry Program Changes

Valerie,

Thank you for the opportunity to review and comment on the proposed Calendar changes for the Biochemistry program.

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

Some comments on the changes:

- Page 3: section 9.1.1 The proposed phrase “might escape consideration” has connotations of dodging a bullet as in: “Whew – that was close – I was almost considered for a scholarship.” The existing wording “may not be considered” seems to be clear enough. The rationale does not speak directly to this change so not sure why this change is being proposed.
- Page 3: section 9.1.1.1 1(b) Chemistry 1050 appears to be listed twice? Should it be “Chemistry 1050, 1051 (or Chemistry 1010, **1011**...”? Or perhaps I am not understanding the logic of the listing (as equal a possibility).
- Page 4: Section 9.1.1.3 (b) Chemistry 1050 appears to be listed twice? Same comment as previous
- Page 5: Section 9.1.2.1 Delete numbering of point 2 since this is now the only point in the section.
- Page 8: Section 9.1.2.5 New letter order needs to be adjusted (e.g. should be “d. Chemistry 2400” and so on.
- Page 9: Section 9.1.2.5 Number 3 needs to be number 2

Trust this is helpful. All the best.

Derek

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

---

From: Jody-Lynn Burke <jrotchford@mun.ca>  
Subject: RE: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 14, 2017 at 12:14:11 PM NDT

Biochemistry Program Changes  
To: Valerie Booth <vbooth@mun.ca>

Hi Valerie,

My comments are attached.

If you have any questions, please let me know.

**Jody Burke, BSc.(Hons), M.Ed, PGC(QM) – Academic Program Officer**

Department of Biology, Memorial University

Office: (709) 864 8021

E-mail: [jodyb@mun.ca](mailto:jodyb@mun.ca)

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From: Valerie Booth <vbooth@mun.ca>

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 16, 2017 at 12:22:32 PM NDT

To: Jody-Lynn Burke <jrotchford@mun.ca>

Cc: "Donna M. Hunt" <dhunt@mun.ca>

Hi Jody,

Thanks for the feedback.

We didn't mean to remove the Biol 1002 pre-req from Biology 2250 - that was an accident. So, we'll add that back in.

On the notes about the reserves... Donna Hunt and I have discussed and we think we do need the reserves. A substantial number of non biology students including biochemistry students will have Biology 1002 and there's nothing stopping them from registering for Biology 2250 in the fall of their 2nd year - which could squeeze out some Biology students. Similar for the Biochemistry 2100 in the winter semesters. So we're thinking to have the reserves in there but to keep a few spaces back for out of sequence or otherwise special students that we'd sign in by hand. We can even make this more clear in the calendar by adding to the UL note that "Out of sequence Biochemistry students may be signed in to Biology 2250 with permission of the instructor". If you like, we can do the mirrored statement in the Biochemistry 2100 description. Let me know what you think or if you'd like to just sit down with Donna and I to discuss - we're both around today.

Valerie

Biochemistry Program Changes

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On Jun 14, 2017, at 12:14 PM, Jody-Lynn Burke <[jrotchford@mun.ca](mailto:jrotchford@mun.ca)> wrote:  
Hi Valerie,

My comments are attached.

If you have any questions, please let me know.

**Jody Burke, BSc.(Hons), M.Ed, PGC(QM) – Academic Program Officer**

Department of Biology, Memorial University

Office: (709) 864 8021

E-mail: [jodyb@mun.ca](mailto:jodyb@mun.ca)

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From: Annie Mercier <[amercier@mun.ca](mailto:amercier@mun.ca)>

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 19, 2017 at 3:05:36 PM NDT

To: Valerie Booth <[vbooth@mun.ca](mailto:vbooth@mun.ca)>

Cc: Garth Fletcher <[fletcher@mun.ca](mailto:fletcher@mun.ca)>

Hi Valerie:

I have circulated the proposal to our undergraduate studies committee and we have no major concerns. Some minor comments are listed below.

For the programs: (1) Since you are making general revisions to your calendar section, I might as well share this: I was advised during proof reading of our own calendar changes earlier this year that the newly approved format was the use of semicolons between bulleted statements (with a period for the last one only); accordingly intermediate statements should all start with a lower case (except subject names). (2) There is a typo in the annotated version under 9.1.2.3 Minor in Biochemistry, clause 3 ("at the 3000 or 4000 year level...") -- remove the word year. (3) In point 4 just below, the OR is capitalized (in annotated version) but this is not the case elsewhere or in the clean version.

For the courses: In light of our upcoming proposal for an Honours in Ocean Sciences, which you have now seen, we were wondering about the reserve for Biochemistry 2100/Biology 2550 and how this might affect those among our students required to take one of these courses?

All the best,

Annie

Biochemistry Program Changes

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

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From: Valerie Booth <[vbooth@mun.ca](mailto:vbooth@mun.ca)>  
Subject: Re: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 20, 2017 at 10:12:29 AM NDT  
To: Annie Mercier <[amercier@mun.ca](mailto:amercier@mun.ca)>  
Cc: Garth Fletcher <[fletcher@mun.ca](mailto:fletcher@mun.ca)>

Thanks for all the feedback and tips Annie.

As far as the reserves go, our plan is to hold back several places in the Winter semester for other students who need the course (e.g. behavioural neuroscience) which might be enough to accommodate the Ocean Sciences Honours - at least for the first while. These students we would just sign in "by hand" with a course change form. I'm not sure exactly how Biology is going to handle the Fall semester yet - we're still going back and forth on it. Which semester do you anticipate the Honours OS students taking 2100/2550? Depending on which semester they're normally going to be in, we can add them into our reserves and/or request Biology do the same.

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From: Annie Mercier <[amercier@mun.ca](mailto:amercier@mun.ca)>  
Subject: Re: consultation and library report request for changes to Biochemistry programs and courses  
Date: June 20, 2017 at 11:39:14 AM NDT  
To: Valerie Booth <[vbooth@mun.ca](mailto:vbooth@mun.ca)>  
Cc: Garth Fletcher <[fletcher@mun.ca](mailto:fletcher@mun.ca)>

Hi Valerie:



Biochemistry Program Changes

We initially had the students scheduled to take BIOL 2250 - so it was in the fall by default. As you know, we have just added BIOC 2100 as an option. So I don't see why we could not spread our students between the two semesters (as they would have been when given a choice between the two separate courses). Is that possible?

The bottom line is that, with a multidisciplinary program like ours, flexibility is probably essential (rather than trying to streamline everyone into one suggested time table). Although I guess only time will tell.

Cheers,

Annie

---

From: Valerie Booth <vbooth@mun.ca>

Subject: Re: consultation and library report request for changes to Biochemistry programs and courses

Date: June 20, 2017 at 4:17:38 PM NDT

To: Annie Mercier <amercier@mun.ca>

Cc: Garth Fletcher <fletcher@mun.ca>

OK - I'll figure it out with Biology and let you know.

---

From: Valerie Booth <vbooth@mun.ca>

Subject: Fwd: consultation and library report request for changes to Biochemistry programs and courses

Date: June 21, 2017 at 8:53:47 AM NDT

To: Jody-Lynn Burke <jrotchford@mun.ca>

Hi Jody,

It's me again, with some more thoughts on the proposed Biochemistry 2100/Biol 2250 calendar entries.

We know that there are some programs other than Biology and Biochemistry for which this course is required (Honours Ocean Science, and Behavioural Neuroscience) and so the note in the proposed calendar entry could reasonably cause some concern for these depts and students (see the email trail below from Ocean Sciences. I know you're not worried about having a pile of Biochemistry students register in the fall, although you might be if all ~75 per year start doing so, and so don't think the note is even necessary. However, we'd prefer to keep some kind of note in there to encourage biology students to use the fall offering and biochemistry students to do the winter one.

Biochemistry Program Changes

So, what do you think about changing the current note from

"UL: Normally the Fall offering is reserved for Biology Majors and the Winter offering is reserved for Biochemistry and Biochemistry(Nutrition) Majors."

to

"UL: Biology students should normally take Biol 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Bioc 2100 in Winter semester"

?

Best,

Valerie

---

From: Valerie Booth <vbooth@mun.ca>

Subject: Fwd: consultation and library report request for changes to Biochemistry programs and courses

Date: June 21, 2017 at 8:53:47 AM NDT

To: Jody-Lynn Burke <jrotchford@mun.ca>

Hi Jody,

It's me again, with some more thoughts on the proposed Biochemistry 2100/Biol 2250 calendar entries.

We know that there are some programs other than Biology and Biochemistry for which this course is required (Honours Ocean Science, and Behavioural Neuroscience) and so the note in the proposed calendar entry could reasonably cause some concern for these depts and students (see the email trail below from Ocean Sciences. I know you're not worried about having a pile of Biochemistry students register in the fall, although you might be if all ~75 per year start doing so, and so don't think the note is even necessary. However, we'd prefer to keep some kind of note in there to encourage biology students to use the fall offering and biochemistry students to do the winter one.

So, what do you think about changing the current note from

"UL: Normally the Fall offering is reserved for Biology Majors and the Winter offering is reserved for Biochemistry and Biochemistry(Nutrition) Majors."

Biochemistry Program Changes  
to

“UL: Biology students should normally take Biol 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Bioc 2100 in Winter semester”

?

Best,

Valerie

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From: <cvaridy@mun.ca>

Subject: FW: consultation and library report request for changes to Biochemistry programs and courses

Date: June 21, 2017 at 10:30:26 AM NDT

To: <vbooth@mun.ca>

Dear Ms. Booth

We have reviewed your proposed changes to the Calendar entries for Biochemistry programs and courses and the Faculty of Medicine supports the changes.

Regards

*Cathy Vardy, MD, FRCP(C)*

*Vice Dean*

*Faculty of Medicine*

*Health Sciences Centre, Room M2M319*

*Memorial University of Newfoundland*

*St. John's, NL , Canada, A1B 3V6*

*Tel: 709-864-6417 or Fax: 709-864-6336*

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**From:** Steele, Dr. Margaret: Dean of Medicine

**Sent:** June-19-17 9:55 AM

**To:** Vardy, Cathy

Biochemistry Program Changes

**Subject:** FW: consultation and library report request for changes to Biochemistry programs and courses

Margaret

**PROFESSOR MARGARET STEELE / DEAN OF MEDICINE**

MD, FRCPC, M.ED, DF CPA, CCPE

Faculty of Medicine, Office of the Dean

M2M311, Health Sciences Centre

Memorial University | St. John's | Newfoundland | A1B 3V6

t: 709.864.6324 f: 709.864.6336 e: [deanofmedicine@med.mun.ca](mailto:deanofmedicine@med.mun.ca)

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From: "Martin Plumer" <plumer@mun.ca>

Subject: RE: consultation and library report request for changes to Biochemistry programs and courses

Date: June 15, 2017 at 1:05:45 PM NDT

To: "Valerie Booth" <vbooth@mun.ca>, "Jody-Lynn Burke" <jodyb@mun.ca>, <chemconsult@mun.ca>, "Sharene Bungay" <sharene@mun.ca>, "Dr. Penny Morrill" <pmorrill@mun.ca>, <engrconsult@mun.ca>, <associatevpoffice@grenfell.mun.ca>, <ncatto@mun.ca>, <staceym@mun.ca>, <miugconsultations@mi.mun.ca>, "Shannon Sullivan" <shannon@mun.ca>, <Dean@med.mun.ca>, <amercier@mun.ca>, <pharminfo@mun.ca>, <cthorpe@mun.ca>, <univlib@mun.ca>

Cc: "Biochemistry Head" <biohead@mun.ca>, "Lagowski, Jolanta" <jolantal@mun.ca>

Hi Valerie,

Physics has no issues with these proposed changes.

Cheers,  
Martin

# **Proposal Calendar Changes to Existing Biochemistry Courses**

## **Executive Summary**

We propose (i) to crosslist Biochemistry 2100 (Genetics) with Biology 2250 and update the course pre-requisites; (ii) update the prerequisites for Biochemistry 2005, 2101, and 3402; and, (iii) update the course description for Biochemistry 4211.

**Resource Implications: Instructional Costs**

none

**Library Holdings and/or Other Resources Required**

There are no new library or other 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****Calendar Change(s)****Under 10.1 Biochemistry (St. John's)**

**2005 Food, Food Safety, and Health** introduces the concepts of the composition of foods, and how the processing of food affects sensory appeal, shelf life and nutrient composition. Common food and water-borne illnesses (risks and prevention) are covered in the course content. Students will also be introduced to food biotechnologies, including genetically modified organisms, ~~nutraceuticals~~ nutraceuticals and the development of functional foods.

~~CO: Chemistry 2400 or 2440-~~

**2100 Introduction to Molecular Biology and Genetics (same as Biology 2250)** will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; ~~the elucidation of the genetic code;~~ and the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

~~CO: BIOC 2101, Chemistry 2401, Physics 1021 or 1051. Students may replace the co-requisite Chemistry 2401 with Chemistry 2440 as a prerequisite. Chemistry 2440 may not be taken as a co-requisite of 2100-~~ Chemistry 2400

CR: Biology 2250

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

~~PR: BIOC 2101, Chemistry 2401, Physics 1021 or 1051, and Science 1807. Students may replace the co-requisite Chemistry 2401 with Chemistry 2440 as a prerequisite. Chemistry 2440 may not be taken as a co-requisite of 2100-~~

UL: Biology students should normally take Biology 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Biochemistry 2100 in Winter semester

**2101 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics will include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Pharmacy 2004, or the former Pharmacy 3110

LH: one three-hour laboratory period on alternate weeks

PR: ~~Chemistry 2400 and 2401, or Chemistry 2440;~~ and Physics 1020 or 1050, and 1021 (or 1051); and Science 1807. ~~Chemistry 2401 and~~ Physics 1021 or 1051 can be done concurrently.

**3402 Food Chemistry** examines the following topics: water structure and the role of water in chemical reactions and mechanical properties of foods; chemistry and physical properties of carbohydrates, proteins and lipids; food dispersions; pigments and natural colorants; food flavour; enzyme properties and applications; vitamins and minerals; chemistry of enzymic and non- enzymic browning; characteristics of: muscle tissue, milk, eggs, bread and edible plant tissue; food additives; and, chemical changes in foods during processing.

LH: one period per week

PR: BIOC 2005; BIOC 2101; ~~Chemistry 2440~~ or Chemistry 2400-2401, and Science 1807

**4211 Biochemical Research Techniques II** ~~is designed to familiarize students with methods used for the study of cellular and subcellular metabolism. This course may include a research project.~~ introduces students to the primary literature of metabolism. It teaches them to critique, both orally and in writing, current research papers. By means of guest lecturers and field trips it introduces students to biochemical activities outside of the home department.

AR: attendance is required

LC: ~~times as arranged~~

LH: ~~times as arranged~~

PR: BIOC 3106

## Secondary Calendar Changes

### Under section 10.2 Biology

**2250 Principles of Genetics** ~~is an introduction to Mendelian and molecular genetics. Phenotype and genotype, behaviour of alleles in genetic crosses, chromosome theory of inheritance, genetic linkage, molecular biology of DNA, RNA and protein, molecular basis of mutation, recombinant DNA, applications of genetic biotechnology.~~

CO: ~~Chemistry 2440 or 2400~~ CR: Biochemistry 2100 the former BIOL 3250

LH: ~~3~~

PR: ~~Science 1807; BIOL 1001 and 1002; Chemistry 1010 and 1011 (or 1050/1051)~~

PR: ~~Chemistry 2440 or 2400~~

(same as Biochemistry 2100) will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

CO: Chemistry 2400

CR: Biochemistry 2100

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

PR: Science 1807

UL: Biology students should normally take Biology 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Biology 2100 in Winter semester.



## Under **School of Pharmacy 12 Course Descriptions**

**2004 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Biochemistry 2101

OR: tutorials as required

PR: Chemistry 2400 and 2401 or Chemistry 2440, and Physics 1020 (or 1050), and 1021 (or 1051)

## **Calendar Entry After Changes**

**2005 Food, Food Safety, and Health** introduces the concepts of the composition of foods, and how the processing of food affects sensory appeal, shelf life and nutrient composition. Common food and water-borne illnesses (risks and prevention) are covered in the course content. Students will also be introduced to food biotechnologies, including genetically modified organisms, nutraceuticals and the development of functional foods.

**2100 Introduction to Molecular Biology and Genetics (same as Biology 2250)** will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

CO: Chemistry 2400

CR: Biology 2250

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

PR: Science 1807

UL: Biology students should normally take Biology 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Biochemistry 2100 in Winter semester.

**2101 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Pharmacy 2004, or the former Pharmacy 3110

LH: one three-hour laboratory period on alternate weeks

PR: Chemistry 2400; and Physics 1020 or 1050, and 1021 (or 1051); and Science 1807.

Physics 1021 or 1051 can be done concurrently.

**3402 Food Chemistry** examines the following topics: water structure and the role of water in chemical reactions and mechanical properties of foods; chemistry and physical properties of carbohydrates,

proteins and lipids; food dispersions; pigments and natural colorants; food flavour; enzyme properties and applications; vitamins and minerals; chemistry of enzymic and non- enzymic browning; characteristics of: muscle tissue, milk, eggs, bread and edible plant tissue; food additives; and, chemical changes in foods during processing.

LH: one period per week

PR: BIOC 2005; BIOC 2101; Chemistry 2400, and Science 1807

**4211 Biochemical Research Techniques II** introduces students to the primary literature of metabolism. It teaches them to critique, both orally and in writing, current research papers. By means of guest lecturers and field trips it introduces students to biochemical activities outside of the home department.

AR: attendance is required

PR: BIOC 3106

## Secondary Calendar Changes

Under **10.2**

**Biology 2250 (same as Biochemistry 2100)** will cover the heritability of simple traits from phenotype to genotype; the discovery of DNA as the molecule of heredity; the structure and function of DNA; the manipulation of DNA for recombinant DNA technology and biotechnology; and briefly, pharmacogenetics.

CO: Chemistry 2400

CR: Biochemistry 2100

LH: up to four hours on alternate weeks which will normally consist of one three hour laboratory period plus one additional hour on the following day

PR: Science 1807

UL: Biology students should normally take Biology 2250 in the Fall semester, and Biochemistry and Biochemistry (Nutrition) students should normally take Biochemistry 2100 in Winter semester.

Under **School of Pharmacy** 12 Course Descriptions

**2004 Introduction to Biochemistry** is an introduction to the major organic substances of living organisms, proteins, carbohydrates and lipids: their structure, analysis and biochemical function. Other topics include: enzymes; the biochemistry of membranes, including the plasma membrane and specialized intracellular membranes; and the biochemistry of selected differentiated cells.

CR: Biochemistry 2101

OR: tutorials as required

PR: Chemistry 2400 and Physics 1020 (or 1050), and 1021 (or 1051)

## Rationale

1. **Bioc 2005:** removing chemistry co-requisites since they are not needed.
2. **Bioc 2100:** crosslist with Biology 2250. The Departments of Biochemistry and Biology have agreed to offer a single introductory genetics course between the two departments. The intention is to have the course administered by Biochemistry. Reserves will be used to give priority to Biology students in the fall semester (which is where it is normally in their schedule) and to Biochemistry students in the winter semester (where it normally appears in their schedule). The pre- and co-requisites have been changed on the recommendation of the Biochemistry 2100 instructor and the course description has been slightly updated.
3. Chemistry has advised us they will no longer be offering Chemistry 2440 and thus we have made adjustments to the pre-requisites to Biochemistry 2101 and Biochemistry 3402.
4. We have updated the calendar entry for Biochemistry 4211 to better match what is actually being taught.

**Consultations Sought From**

**Comments Received**

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

Biology	yes
Chemistry	yes
Computer Science	no
Earth Sciences	no
Education	no
Engineering	yes
Geography	yes
Grenfell	no
Humanities and Social Sciences	no
Marine Institute	yes
Mathematics and Statistics	no
Medicine	yes
Ocean Sciences	yes
Pharmacy	yes
Physics and Physical Oceanography	yes
Psychology	no

**Library Report Received**

No

***(consultation comments are given in the accompanying changes to existing programs proposal)***

**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: \_\_\_\_\_



Office of the Registrar .

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

October 11, 2017

TO: All Members of Faculty Council, Faculty of Science

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

SUBJECT: **Proposals for Calendar Changes**

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At a meeting held on October 6, 2017, the Undergraduate Studies Committee of the Faculty of Science agreed to forward the following items Faculty Council for approval:

- **Department of Physics and Physical Oceanography**
  - Changes to the Minor program for students enrolled in the Bachelor of Engineering's Computer Engineering and Electrical Engineering programs.
  - Changes to the Major and Honours regulations for the Environmental Physics program.
- **Department of Biochemistry**
  - Changes to the Biochemistry Major and Biochemistry and Chemistry Joint Honours programs.
  - Changes to Biochemistry courses and secondary changes to other sections of the Calendar.
- **Department of Chemistry**
  - Changes to the course Chemistry 3211 (pre-requisites)

  
Maria Murray

**Proposal  
Prerequisite Change to CHEM 3211**

**Executive Summary**

The proposed change to CHEM 3211 is to add CHEM 2301 or CHEM 2302 and 2401 as prerequisites for the course.

**Resource Implications: Instructional Costs**

There will be no implications to resources or instructional costs.

**Library Holdings and/or Other Resources Required**

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

Signature of Unit Head (if appropriate): \_\_\_\_\_

Date: \_\_\_\_\_

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

Date: \_\_\_\_\_

**SUMMARY PAGE FOR SENATE****Approval Form****Course Number and Title**

CHEM 3211 Inorganic Chemistry

**Calendar Change(s)**

**3211 Inorganic Chemistry** is a detailed examination of the structure, bonding, and chemistry of the d block elements.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

LH: 3

PR: Science 1807; CHEM 2210; CHEM 2301 or 2302; CHEM 2401; or permission of the instructor

**Secondary Calendar Changes**

None.

**Calendar Entry After Changes**

**3211 Inorganic Chemistry** is a detailed examination of the structure, bonding, and chemistry of the d block elements.

AR: attendance is required in the laboratory component of this course. Failure to attend may result in a failing grade or deregistration from the course.

LH: 3

PR: Science 1807; CHEM 2210; CHEM 2301 or 2302; CHEM 2401; or permission of the instructor

**Rationale**

In previous years, CHEM 2210 was taught during the same semester as CHEM 3211. The consequence of this was that students would complete CHEM 2301 or 2302 and CHEM 2401 prior to taking CHEM 3211 the following year. In other words, students typically finish their 2<sup>nd</sup> year chemistry requirements before beginning their 3<sup>rd</sup> year. With 2210 being taught during the fall semester and 3211 being taught during the winter semester in the 2016-2017 calendar, 3 students took CHEM 3211 the following semester instead of a year later when they had completed 2401. These students had a much harder time in the course since they didn't have the requisite content such as that obtained in the physical chemistry courses, NMR spectroscopy, and knowledge of simple aromatic compounds and their properties (e.g., pyridine which is a common ligand in inorganic chemistry). With the proposed change to make CHEM 2401 a pre requisite for the course, students will have the necessary background in chemistry prior to taking CHEM 3211. This will not increase the length of the undergraduate program.

**Consultations Sought From**

**Comments Received**

Education	No
Engineering	No
Grenfell Campus	No
Marine Institute	Yes
Biology	no
Biochemistry	no
Pharmacy	no
Physics	Yes
Geography	Yes
Mathematics and Statistics	No
Earth Sciences	No

**Library Report Received**

Yes

**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: \_\_\_\_\_

**Original Consultation email:**

Original Message-----

From: Chris Flinn [<mailto:cgflinn@mun.ca>]

Sent: May-12-17 4:08 PM

To: [afoster@mun.ca](mailto:afoster@mun.ca); [vbooth@mun.ca](mailto:vbooth@mun.ca); [iljones@mun.ca](mailto:iljones@mun.ca); [sharene@mun.ca](mailto:sharene@mun.ca); [shannon@mun.ca](mailto:shannon@mun.ca); [amercier@mun.ca](mailto:amercier@mun.ca); [plumer@mun.ca](mailto:plumer@mun.ca); [cthorpe@mun.ca](mailto:cthorpe@mun.ca); [gkundhi@mun.ca](mailto:gkundhi@mun.ca); [ncatto@mun.ca](mailto:ncatto@mun.ca); [rpm321@mun.ca](mailto:rpm321@mun.ca)

Subject: Request for feedback on a proposal from chemistry and request for library report

Hello Everyone,

Please send me your thoughts on the attached proposal from chemistry. I apologize to anyone to whom I have duplicated this email request. Dr.



Fridgen wished that all members of FoSCUGS receive this proposal if different from those who deal with consultation requests from other departments and faculties. I look forward to your constructive feedback.

sincerely,

Chris Flinn  
Deputy Head, Undergraduate Studies  
MUN Chemistry Department

Library Report:

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

**TO:** Chris Flinn, Department of Chemistry  
**FROM:** Meghan Gamsby, Head of Public Services, QEII  
**RE:** Proposed Prerequisite Change to CHEM 3211  
**DATE:** September 14, 2017

I have reviewed the proposal for the prerequisite changes to CHEM 3211. A collection evaluation was completed and I have determined that the changes will have no impact on library resources.

Please remember that our Library Instruction program is available to help instructors teach their students about information literacy, including finding literature using specialized chemistry databases and scholarly communication practices in chemistry

**Responses:**

**Marine Institute:**

Chris,

Apologies for the tardy reply on this item. Thank you for the opportunity to review and comment on the proposed prerequisite change to CHEM 3211.

This change will have no impact on the programs at the Marine Institute.

We are happy to support this change as presented.

All the best.

Derek Howse

Derek Howse  
Chair, Undergraduate Studies Committee  
Marine Institute, Memorial University  
TEL: 709-778-0586  
FAX: 709-778-0394

**Physics:**

Hi Chris,

Physics has no issues with this proposed Calendar change.

Cheers,  
Martin

**Geography**

No issues from Geography

Norm Catto  
Head, Department of Geography  
Memorial University  
St. John's NL A1B 3X9  
Canada