



Faculty of Science

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

A regular meeting of the Faculty Council of the Faculty of Science will be held on Wednesday, November 18, 2020, at 1:00 p.m. by Webex.

AGENDA

1. **Regrets**
2. **Adoption of the Minutes of September 16, 2020 (deferred from October 21, 2020)**
3. **Business Arising from the Minutes**
4. **Correspondence: None**
5. **Reports of Standing Committees:**
 - A. **Undergraduate Studies Committee:**
 - a. Department of Biochemistry, proposal for new course, BIOC 1600, Food, Drugs, and Your Body, Paper 5.A.a (pages 7-28)
 - b. Department of Biochemistry, proposal for Special Topics Course, BIOC 4232, Enzymes and Receptors, approved by the committee and presented for information only, Paper 5.A.b (pages 29-43)
 - c. Department of Chemistry, proposal to amend course, CHEM 1010, Introductory Chemistry I, Paper 5.A.c (pages 44-60)
 - d. Department of Chemistry, proposal for new course, CHEM 4310, Surface and Interface Science, Paper 5.A.d (pages 61-78)
 - e. Department of Chemistry, proposal for new course, CHEM 4431, Heterocyclic Chemistry, Paper 5.A.e (pages 79-95)
 - f. Department of Chemistry, proposed calendar change to add new Special Topics course number blocks, Paper 5.A.f (pages 96-117)
 - B. **Graduate Studies Committee:**
 - a. Department of Biology, Request for Approval of a Graduate Course, BIOL 6052, Plant Pathology, Paper 5.B.a (pages 118-121)
 - b. Department of Mathematics and Statistics, Special Topics course, MATH 6215, Deep Learning and Deep Reinforcement Learning, approved by the committee and presented to Faculty Council for information only, Paper 5.B.b (pages 122-125)
 - c. School of Graduate Studies calendar changes proposal revising the 'Pass (with conditions)' category, Paper 5.A.c (pages 126-154)
 - C. **Library Committee: No business.**
6. **Reports of Delegates from Other Councils**

7. **Report of the Dean**
8. **Question Period**
9. **Adjournment**

A handwritten signature in black ink, appearing to read "Travis Fridgen", with a long horizontal stroke extending to the right.

Travis Fridgen, Ph.D.
Acting Dean of Science



Faculty of Science

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**FACULTY OF SCIENCE
FACULTY COUNCIL OF SCIENCE
MINUTES OF MEETING OF SEPTEMBER 16, 2020**

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, September 16, 2020, at 1:00 p.m. using Webex.

FSC 2783

Present

Biochemistry

M. Berry, R. Bertolo, J. Brunton, S. Harding, S. Mayengbam, M. Mulligan

Biology

J. Burke, S. Dufour, J. Roncal

Chemistry

C. Bottaro, C. Deacon, E. Merschrod, S. Pansare, B. Power, A. Sheppard

Computer Science

J. Friesen, O. Meruvia-Pastor

Earth Sciences

A. Langille, G. Layne, A. Malcolm

Mathematics & Statistics

I. Booth, J. Craighead, J. Dawe, D. Harvey, R. Haynes, JC Loredó-Osti, S. Mantyka, D. Pike, T. Stuckless, S. Sullivan, A. Variyath

Ocean Sciences

G. Fletcher

Physics & Physical Oceanography

V. Booth, E. Demirov, J. LeBlanc, M. Morrow, J. Munroe, K. Podusk, I. Saika-Voivod

Dean of Science Office

C. Barrett, J. Blundell, S. Bungay, C. Evans, K. Foss, T. Fridgen, A. Highsted, G. Jackson, G. Kenny, R. Newhook, T. Mackenzie

FSC 2784

Regrets:

E. Edinger, S. MacLachlan, D. McIlroy, M. Miskell, H. Usefi, Y. Wiersma

- FSC 2785 Adoption of Minutes**
Moved: Minutes of the meeting of August 19,2020, meeting be adopted (Sullivan/Dufour).
Carried.
- FSC 2786 Business Arising:** None
- FSC 2787 Correspondence:** None
- FSC 2788 Reports of Standing Committees:**
- A. Undergraduate Studies Committee:** No business
 - B. Graduate Studies Committee:** No business.
 - C. Nominating Committee:** No business.
 - D. Library Committee:** No business.
- FSC 2789 Introduction of A. Highsted, International Program**
Alison Highsted will ensure that international students in the Faculty of Science are aware of supports and development opportunities that are available to them. She will also work with faculty, staff and students to develop or customize initiatives that will advance service delivery and increase international student success within the faculty.
- FSC 2790 Discussion about Winter Semester 2021**
The Provost has requested input from the Faculties regarding course delivery in the Winter 2021 semester. There will be a special meeting of Senate to discuss this issue with Deans' Council. During the discussion, concerns were expressed around bringing international students and rural Newfoundland and Labrador students back to St. John's and to campus; what happens during flu season when a couple of symptoms of a head cold means isolating until symptom-free; effect of a piece-meal return to campus; how will missing a full year of labs affect degrees; the lack of supports for international students; and the increased workload for faculty and staff.
- FSC 2791 Report of the Dean**
Presented by Travis Fridgen, Acting Dean
- 1. EDI in Research Grant Applications**
NSERC Session facilitated by SIRI and NSERC DG Evaluation Group members Kris Poduska and Chris Rowley, Thursday 10 am - 12 pm (Sept 17). Contact siri@mun.ca for a WebEx link. The session will provide an overview of how EDI may appear in grant applications.
 - 2. Cluster Hire Search Targeted for Indigenous Scholars**

Five new full-time, tenure-track ASMs will be hired at the level of Assistant or Associate Professor. These positions are targeted hires for candidates who identify as Indigenous from around the world, but the preference is for First Nation, Metis, and Inuit candidates from Canada, and particularly from Newfoundland and Labrador. The competition is for any area of scholarship and qualifications must be appropriate to the discipline or area of scholarly activity. If you know of anyone who identifies as Indigenous and is qualified please let them know and encourage them to apply.

3. **National Dialogues and Action for Inclusive Higher Education and Communities**

Memorial, UofT, and other Canadian Universities have partnered to bring the first National Dialogue on anti-black racism and black inclusion in Canadian higher education. This workshop will take place Thursday and Friday, October 1 and 2, from 12-4 pm (<https://www.uts.utoronto.ca/nationaldialogues/>).

4. **Science Building/Math and Stats**

There have been questions about the Department of Mathematics and Statistics. I can report that no decisions have been made pertaining to relocation of Math and Stats. One of the proposals that seems to be surfacing is the demolition of all but one side of Science building, which goes from the pedway from Chemistry-Physics to and including the Science Lecture Hall. That proposal is to tear that part of the building down to the steel and one concrete floor, then rebuild it. Geography is slated to move to Biotechnology, some of the HSS departments and Psychology may go into Chemistry-Physics and the remaining tenants of Science would go to the first two floors of the newly built Science building, with the top two floors being shell space, which could be a future home for Math and Stats. These are just proposals and no decisions have been made. One other thing that came to light is that the Science lecture theatre, SN-2109, would be closed for a period of time making it imperative that the Reid Theatre be re-opened. We were successful in convincing the President that permanent access to the Reid Theatre was in the best interest of the University, and that is being explored.

FSC 2792 Question Period

There was discussion around new space for the Department of Mathematics and Statistics. This situation has been brought to the attention of the President. There are solutions being considered as mentioned in the Dean's report.

Concerns were expressed about asbestos remaining in the Henrietta Harvey building, and the incidents of ceiling tiles falling in while work was being completed on the roof. The Head was assured that there was no asbestos found during any of these incidents, and he will provide that correspondence to those who want to see it.

There should be follow-up with the organisers of the on-campus flu shot clinics to ensure this initiative is undertaken again this year and with more availability.

A retiree has been denied access to MS-365. This should be sorted so that it doesn't happen again.

The President's Office has advertised for five Indigenous scholars. These positions are not assigned to any particular Faculty or Department.

FSC 2793

Adjournment

The meeting adjourned at 1:58 p.m.



Office of the Registrar

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October 8, 2020

TO: All Members of Faculty Council, Faculty of Science

FROM: Tracey Edmunds, Secretary, Faculty of Science Committee on Undergraduate Studies

SUBJECT: **Proposals for Calendar Changes**

At a meeting held on October 7, 2020, the Faculty of Science Committee on Undergraduate Studies agreed that the following item should be forwarded to Faculty Council for approval:

1. Department of Biochemistry

- (a) Proposal for a New Course: Biochemistry 1600 – Food, Drugs, and Your Body

At a meeting held on October 7, 2020, the Faculty of Science Committee on Undergraduate Studies approved a proposal for a Special Topics Course from the Department of Biochemistry, and agreed that the following item should be forwarded to Faculty Council for information:

2. Department of Biochemistry

- (a) Proposal for a Special Topics Course: Biochemistry 4232 – Enzymes and Receptors

A handwritten signature in black ink that reads "Tracey Edmunds".

Tracey Edmunds

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☒ New course(s): **BIOC 1600 Food, Drugs and Your Body**
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

ADMINISTRATIVE AUTHORIZATION

By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Senate Summary Page for Courses

COURSE NUMBER AND TITLE

BIOC 1600 - Food, Drugs, and Your Body.

ABBREVIATED COURSE TITLE

Food, Drugs, and Your Body (26 characters including spaces)

RATIONALE

The Department of Biochemistry has two main curriculum streams – Biochemistry and Nutrition – but does not currently have a first year course as a gateway into these programmes. This course will serve as an entry level (1000-level) course to introduce both streams in our department, delivered in a topical and accessible manner. The concept behind the course is to deliver a science-based understanding of human physiology and metabolism using popular themes in society related to drugs and food. A key educational outcome of this course is to provide students with the tools to decipher fact from fiction in current social media environments that are saturated by false and unscientific claims related to human health, usually centering on drugs and food. Key goals of the development of this course are to offer a science elective course to the broader student population (e.g. all faculties and programmes) and an introductory course for potential Biochemistry or Human Nutrition majors to assess programme offerings in the Department of Biochemistry, as per the 2020 AUP panel recommendations.

CALENDAR CHANGES

BIOC1600 - Food, Drugs, and Your Body examines the substances humans put into their bodies and the impact the substances have on cellular physiology and metabolism. With a special emphasis on current trends, the course introduces the concept of foods and drugs, how they are metabolised by the body, the social and political implications of foods and drugs, how they can influence overall health, and the sometimes grey areas between foods and drugs.

CALENDAR ENTRY AFTER CHANGES

BIOC1600 - Food, Drugs, and Your Body examines the substances humans put into their bodies and the impact the substances have on cellular physiology and metabolism. With a special emphasis on current trends, the course introduces the concept of foods and drugs, how they are metabolised by the body, the social and political implications of foods and drugs, how they can influence overall health, and the sometimes grey areas between foods and drugs.

SECONDARY CALENDAR CHANGES

None

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received and Date
Business Administration	Yes; Date: 01/09/2020
Chemistry	Yes; Date: 14/09/2020
School of Music	Yes; Date: 01/09/2020
Computer Science	No
Mathematics and Statistics	No
Ocean Sciences	Yes; Date: 26/08/2020
Psychology	No
Biology	No
Physics	No
Humanities and Social Sciences	No
Geography	No
Human Kinetics and Recreation	Yes; Date: 27/08/2020
Pharmacy	Yes; Date: 26/08/2020
Nursing	Yes; Date: 24/08/2020
Arts and Social Sciences (Grenfell)	No
Science and the Environment (Grenfell)	No
Fine Arts (Grenfell)	No
Marine Institute	No
Medicine	Yes; Date: 26/08/2020
Engineering	Yes; Date: 25/08/2020
Education	No

Consultation feedback is attached.

LIBRARY REPORT

The library report is attached.

RESOURCE IMPLICATIONS

Infrastructure: There are expected to be very minimal resource impacts for the implementation of this course. This course does not have any associated practical classes or laboratory classes. Infrastructure resources would be primarily a large classroom, approximately 100+ spaces, and lecture capture availability. The course will be designed as a hybrid delivery model supporting remote and in-person synchronous as

well as asynchronous implementation. Some drop-in assistance from CITL regarding the set-up and management of the VLE (Brightspace) will be required in the initial stages of the set-up but both instructors have significant experience coordinating online and remote/hybrid courses. There are no anticipated increases to instructional costs relating to the library holdings (awaiting the librarian's report).

Personnel: Both proponents of the course are anticipated to co-teach this course for at least the first 3 years and at least one will be involved with this course for the foreseeable future. No new academic staff are required to support this course directly. The Department of Biochemistry's academic staffing plan has accounted for the development of this and several other courses. Therefore, this additional course offering is supported within the planned long-term staffing plan for the department. Teaching assistants will be required for this course to assist in the coordination of tutorial sessions offered during the course. Teaching assistants will also be required to assist with the marking of various pieces of assessment submitted by the students.

Revenue Generation: This course may also offer the potential for revenue generation. The proponents plan to work with CITL to develop an online version of this course, which could be offered as a different section in other semesters and offered via online learning platforms (e.g. Coursera.org). The proponents plan to develop this course in the spirit of life-long learning approaches to continuing education. The proponents would like to use a future online version of this course as a means to engage more broadly with the provincial population (e.g. non-traditional adult learners).

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

[If any new courses are being proposed, this section should provide samples of each of the following: course outline, method of evaluation, textbook, instructors.]

Attached:

1. Sample Syllabus
2. Sample Evaluation

Sample Syllabus

Instructor Information

Dr. Scott Harding

Office: ER-3011

Phone: 709-864-8539

Email: sharding@mun.ca

Dr. Mark D. Berry

Office: SN-4006

Phone: 709-864-8529

Email: mberry@mun.ca

Note on email contact: We usually respond quickly to student questions via email. Please allow up to 48 hours (excluding weekends and holidays) for a reply. Also, important messages to the class will be communicated using the Brightspace page for the course under the “News” or “Announcements” sections.

Office Hours: Dr. Harding - Wednesdays from 1:00-2:30; Dr. Berry – as Department Head Dr. Berry’s schedule is not conducive to regular scheduled office hours, please email him for an appointment. However, you may also wish to contact us directly to set-up an appointment to discuss the course or related topics.

Note about using the Brightspace email functions: It has been noted in the past that sending an email directly from Brightspace does not go directly to the regular Memorial email inbox. Please use the Memorial email web app or your personal device when emailing the instructors or teaching assistants regarding the course.

Course Information

Course Title: Food, Drugs, and Your Body

Course Code and CRN: BIOC1600

University Calendar Description: BIOC1600 - Food, Drugs, and Your Body examines the substances humans put into their bodies and the impact the substances have on cellular physiology and metabolism. With a special emphasis on current trends, the course introduces the concept of foods and drugs, how they are metabolised by the body, the social and political implications of foods and drugs, how they can influence overall health, and the sometimes grey areas between foods and drugs.

Course Overview: This 1000 level course will services future Science majors and students from other faculties wishing to complete a science elective course as part of their program. The course will introduce the science, particularly the pharmacology and metabolism, related to human consumption of foods and drugs. The course will focus on the introductory concepts in both biochemistry and human nutrition by using topical themes and concepts to enhance the learning outcomes. Students will also be actively engaged in developing the learning outcomes through the suggestions of topics (e.g. one per instructor) to

be covered in each instructor's section. Students will be challenged with a number of assessment tools, including assignments (e.g. written and video), online quizzes, and a final exam.

Timetable and Location:

Classroom Etiquette: The delivery of the material in this course will use a blended method – lectures, group work and discussions, problem-solving and active learning classes and web-based videos. It is sometimes helpful to have access to the internet while in class, therefore smartphones, tablets and laptops are welcome during class.

Professional Environment: The class is a professional and respectful environment; therefore, everyone is expected to be tolerant of the opinions and comments of others even if you disagree. Discussion and questioning are encouraged during the lectures as they generally help improve the learning environment. If you have an issue regarding the level of professionalism and respect in the class feel free to discuss with Drs. Harding or Berry privately.

Learning Goals

1. Become familiar with and understand the important terms and definitions related to human nutrition, drugs, and the processes in the body involved in their metabolism. This includes the cellular and molecular metabolism of nutrients and recreational and therapeutic drugs.
2. Be able to understand and discuss the social and scientific controversies related to foods and drugs in relation to human health and disease.
3. Be able to understand and discuss the industrial processes by which various foods and drugs are developed, and the implications of these processes on our everyday life.
4. Become familiar with the overlap between foods and drugs, particularly related to the human interdependence on both, and their common links in human health and diseases.

Topics List

1. Biomolecules and why they are important
 - a. Proteins
 - b. Nucleic acids
 - c. Carbohydrates
 - d. Lipids
 - e. What is a drug?
2. Medicinal drugs - their sources, actions, and interactions
 - a. Vaccines
 - b. Cardiovascular
 - c. Mental Health
 - d. Metabolic disorders
 - e. Class selection
3. Recreational drugs - their sources, actions, and interactions
 - a. Nicotine
 - b. Alcohol
 - c. Marijuana
 - d. Amphetamines and psychotropics

- e. Student selected topic
- 4. Traditional/indigenous drugs - their sources and their actions
 - a. Ceremonial drugs of the Amazon and Southern plains - Ayahuasca and peyote
 - b. Khat in Africa and Arabia
 - c. Haitian voodoo and zombifying powder
 - d. Medicines of the Canadian boreal forest
- 5. Student Selected Topics
- 6. What is a food?
- 7. Where do you get your protein?
 - a. Omnivores
 - b. Vegetarians
 - c. Carnivore
 - d. Keto
 - e. Vegan
- 8. Fats versus Sugar – Which one is killing us?
 - a. Saturated fats and health
 - b. Sugars, starches and other carbs
- 9. Is it a food or a drug?
 - a. Alcohol and other intoxicating substances
 - b. Marijuana – edibles and the munchies
 - c. Caffeine – self-medicating with nature’s stimulant
 - d. Lunch with a side of antibiotics and growth hormones
- 10. Big Food – Big Ag
 - a. Where did that hamburger come from?
 - b. Carbon footprint of your favorite meal
 - c. Food Politics
- 11. The Canadian Diet
 - a. Indigenous food systems
 - b. Canadian ethnic foods
 - c. Food security in Canada
 - d. Rationality
- 12. Student selected topic

Required and Recommended Text and Resources

Required: Selected readings from popular science and media sources as assigned

Recommended: This reading selection will be topical and current. Substantial changes from year to year are expected. Materials will be updates and provided by the instructors.

Method of Evaluation:

Assignment(s): two assignments at 15% each.

Midterm Exam: two online mid-terms at 15% each.

Class participation: online quizzes, clickers, and surveys at 20% total.

Final Exam: final exam (take home or online) at 20% total.

****Note:** at least 20% of the final course mark will be released before the final date to drop a course with no academic prejudice.

Late Assignments and Missed Tests: Assignments are due at 23:59 on the dates specified above unless otherwise stated. If assignments are handed in late the following penalty applies: first 24 hours final mark for the assignment is capped at 75% and/or B; more than 24 hours until the last day of class the final mark for the assignment is capped at 64% and/or C. All assignments will be marked and provided with the same level of feedback regardless of when they are handed in. For tests, there will be no supplemental tests offered if the test is not taken at the assigned time, the value of the missed test will be added to the final exam. The mitigating circumstances for missing the test or requesting extension of a deadline must meet the criteria set out in the following regulations “6.7.5 Exemptions from Parts of the Evaluation” (<https://www.mun.ca/regoff/calendar/sectionNo=REGS-0601>). Exemptions from “Final Exams” follows a different procedure found in section “6.8.2 Exemptions from Final Examinations and Procedures for Applying to Write Deferred Final Examinations” (<https://www.mun.ca/regoff/calendar/sectionNo=REGS-0628#REGS-0642>). Please read these sections of the University Regulations as soon as possible.

Policies and other relevant information

Please familiarize yourself with the relevant Memorial University policies:

Accommodations. Memorial University of Newfoundland is committed to supporting inclusive education based on the principles of equity, accessibility and collaboration. Accommodations are provided within the scope of the University Policies for the Accommodations for Students with Disabilities (www.mun.ca/policy/site/policy.php?id=239). Students who may need an academic accommodation are asked to initiate the request with the Glenn Roy Blundon Centre at the earliest opportunity (www.mun.ca/blundon).

Academic Integrity. Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12 - <https://www.mun.ca/regoff/calendar/sectionNo=REGS-0748>) of the University Regulations.

Recording of Lectures. Lectures are delivered in a Lecture Capture enabled classroom. Please ask permission before personal recording lectures or active learning classes. Any permitted recorded lecture material should not be posted online or shared outside of the course.

Equity and Inclusion. Please assist in creating a learning environment that supports equity and the provision of a safe learning environment regardless of religious, linguistic and economic backgrounds, lifestyle choices, gender, nationality, physical ability or learning differences.

Memorial University's Land Acknowledgement. We respectfully acknowledge the territory in which we gather as the ancestral homelands of the Beothuk, and the island of Newfoundland as the ancestral homelands of the Mi'kmaq and Beothuk. We would also like to recognize the Inuit of Nunatsiavut and NunatuKavut and the Innu of Nitassinan, and their ancestors, as the original people of Labrador. We strive for respectful partnerships with all the peoples of this province as we search for collective healing and true reconciliation and honour this beautiful land together.

Sample Assessment

Creative Writing Assignment:

You have been hired as a science writer for ScienceNow, a weekly online popular science magazine targeted at Canadian teens and young adults. Your first assignment is to write a 500 word article for ONE of the following article collections:

- 1) Medicines or Ceremonial Concoctions of World Cultures throughout History
- 2) The Magical Chemistry and Biochemistry of Hogwarts potions
- 3) The Elementary Biochemistry of Sherlock Holmes

Your article will focus on ONE active ingredient from any documented indigenous cultural or medicinal practice (the indigenous group can be from anywhere in the world and any point in history), ONE specific ingredient associated with a potion that is described in the Harry Potter books, or ONE specific chemistry or biochemistry related chemical/compound from the Sherlock Holmes stories. Specific guidance documents for each option will be provided. In general, your article should name the reagent, from where it is isolated (as applicable), what its intended use is in the context of the series you have chosen, and then describe in terms that the target audience could understand its expected actions in the (real) world and the biochemical basis of these effects. You should provide citations for three scientific sources to which the reader can refer for more details and greater specifics (these are not included in the 500-word limit). You will be assessed on the scientific accuracy of your article, the appropriate use of scientific literature sources, understandability to the target audience, appropriate grammar and punctuation, and level of engagement the article creates. Remember, this is a science news magazine; you need to capture the reader's attention so that they will buy a yearly subscription.

Weighting: 15% of overall course mark.

Video or Photo Journal Assignment:

This assignment will required you to keep a 7-day photo or video journal of all your meals, snacks and beverages consumed. You will then select a nutrient of interest and assess your week's foods and beverages for the presence or absence of this particular nutrient. Select a nutrient you wish to learn more about. This can be a macronutrient (e.g. carbohydrates or protein) or a micronutrient (e.g. calcium, iron, vitamin A). Record a video or audio clip that defines and describes important facts (i.e. current and historical) about your nutrient. This clip should be equivalent to approximately 500 words of written material. Next, using a slide presentation (e.g. Microsoft PowerPoint, Google Slides or Apple Keynote file) with associated audio recording, categorize your foods and beverages according to the content of your nutrient of interest. In this presentation, you should describe your overall food choices in the context of consuming adequate amounts of the nutrient of interest. This presentation should also relate your recorded week's intakes to the intakes of the Canadian population and your own opinion on the healthfulness of week's food choices, in relation to the nutrient of interest.

Weighting: 15% of overall course mark.



Collection Development Division
Queen Elizabeth II Library

17 September 2020

To: Janet Brunton, Department of Biochemistry
From: Erin Alcock, Science Research Liaison Librarian
Subject: New Course Proposal: BIOC 1600 Food, Drugs and Your Body

I have reviewed the proposal for the new course BIOC 1600 – Food, Drugs and Your Body and I have determined that the Memorial University Library system has more than sufficient holdings to support the objectives of this course.

Table One indicates the monograph and journal holdings based upon the course topics. There is some room for improvement where books on some topics are concerned, which I will keep in mind as I develop the collection in this and future years and I welcome any suggestions from the proposed instructors and other faculty. The Books, Articles and More category will be predominantly research articles and there we see no shortage of choice for students learning and doing research in this area. I note the course syllabus also suggests required readings from popular sciences sources, we have many options there.

Table One: Library catalogue holdings based upon course outline (as of date of memo)

Topics	Catalogue holdings	Books, articles & more search
Proteins	4800+	14,000,000+ results
Nucleic acids	760	2,500,000+
Carbohydrates	694	1,200,000+
Lipids	1085	2,700,000+
vaccin* AND (source* OR action* OR interaction*)	495	1,300,000+
"cardiovascular drug*" AND (source* OR action* OR interaction*)	14	31,000+
"mental health" AND drug* AND (source* OR action* OR interaction*)	124	527,000+
"metabolic disorder*" AND drug* AND (source* OR action* OR interaction*)	20	110,000+
Nicotine AND (source* OR action* OR interaction*)	56	230,000+
Alcohol AND (source* OR action* OR interaction*)	656	2,400,000+
(marijuana OR cannabis) AND (source* OR action* OR interaction*)	99	550,000+
amphetimin* OR psychotropic*) AND (source* OR action* OR interaction*)	74	130,000+
(Ayahuasca OR peyote) AND (source* OR action*)	17	7,300+
khat AND (source* OR action*)	6	6,000+
(haitian AND voodoo) AND (drug* OR medicin*)	2	1,800+
zombifying AND powder		12
(medicin* OR drug) AND canad* AND boreal	6	12,000+
Protein* AND omnivore*		18,000+
Protein* AND vegetar*	33	72,000+

Protein* AND carniv*	3	35,000+
Protein* AND keto*	82	260,000+
Protein* AND vegan*	8	43,000+
Saturated AND fat* AND health*	55	330,000+
(Sugar* OR starch*) AND health*	477	1,600,000+
(marijuana OR cannab*) AND (edible* OR food)	37	210,000+
caffeine AND (food OR drug)	103	206,000+
Food* AND (antibiotic OR "growth hormone*")	132	560,000+
"Big Food" OR "Big Agricult*"	18	14,000+
(food* OR agricult*) AND "carbon footprint"	51	84,000+
Food* AND politic*	2162	2,600,000+
canad* AND indigenous AND food*	110	107,000+
canad* AND ethnic* AND food*	49	170,000+
Canad* AND "food security*"	377	400+

BiocDHundergrad

Reply all |

Mon 8/24/2020 11:35 AM

To: Faculty of Humanities and Social Sciences; Shannahan, Rachelle; Collett, Meghan; engrconsult@mun.ca; Rohr, Linda; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D; DeanNurse; pharminfo@mun.ca; Dean of Science; adeanugradswk; Library Correspondence; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca

Cc: jbrunton@mun.ca

Special Topics Course Pr...
157 KB

Biochemistry 1600.pdf
547 KB

2 attachments (705 KB) Download all

Hello,

Please find attached two proposals for new courses proposed by the Department of Biochemistry. One is a Special Topics course in Biochemistry (Bioc 4232 - Enzymes and Receptors). The second course (Bioc 1600 Food, Drugs and Your Body) is an accessible science course for science and non-science students alike and will apply skeptical thinking and the scientific method to current pop-sci and social media trends in food and drugs.

We would appreciate receiving feedback on the proposals by Sept 14th.

Comments should be sent to biocDHundergrad@mun.ca

Thanks very much,
Janet

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland
St. John's, NL, A1B 3X9, Canada

phone 709 864-8533 fax: 709 864-2422

FW: Consultation Request: Two Biochemistry Course Proposals

BiocDHundergrad

Tue 9/15/2020 3:13 PM

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland
St. John's, NL, A1B 3X9, Canada

phone 709 864-8533 fax: 709 864-2422

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

BiocDHundergrad

Reply all |

Tue 9/15/2020 2:36 PM

To: Department of Chemistry Consult <chemconsult@mun.ca>

Cc: mkatz@mun.ca; jbrunton@mun.ca

You forwarded this message on 9/15/2020 3:13 PM

Hi Dr. Katz,

Thanks for your feedback.

With respect to your first comment, you are correct - Bioc 1600 is a general interest course for non-Biochem majors. It cannot be used to fulfill the requirements for any of our programs (minor, major or honours).

With regards to your interest in Bioc 4232 Enzymes and Receptors for your Biological Chemistry majors, I will discuss it with our Undergrad Studies and Committee and the faculty members who designed the course, to get their input.

I will get back to you soon.

Janet

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Department of Chemistry Consult <chemconsult@mun.ca>

Yesterday, 5:07 PM

Hi Janet,

Chemistry has taken a look at these proposals and we are happy with them. We have a few small questions/comments that are likely more for us (chemistry) than you.

a) Bioc 1600 is not for bioc majors right? In other words, you can't take this to count as your 1st year bioc course. It's a general interest course for non bioc majors.

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let me know if I haven't been clear on anything or if you have more questions.

Best,

Dr. Katz (mkatz@mun.ca; since I don't check this e-mail as often)

Shannahan, Rachelle

Tue 9/1, 6:07 PM

Dr. Brunton,

Thank you for the opportunity to review these proposals. We in the Faculty of Business Administration see no issue and are fully supportive. We note our unit is missing from your consultation checklist so you could pop the Faculty of Business Administration in.

Best regards,

Rachelle Shannahan

Rachelle J. Shannahan, PhD
Associate Dean, Academic Programs
Faculty of Business Administration
Memorial University of Newfoundland

rshannahan@mun.ca

Sutherland, Ian D

Tue 9/1, 11:23 AM

Good morning,

The School of Music has no issue with the proposed courses.

Sincerely,

Ian Sutherland, PhD (Exon)
DEAN
School of Music
Memorial University
www.mun.ca/music

Rohr, Linda

Thu 8/27, 9:20 PM

Hello,

I have reviewed the course proposals and have no concerns. BIOC 1600 will be a suitable elective for HKR students.

Take care,

Linda

Linda E. Rohr PhD
Dean, School of Human Kinetics & Recreation
Memorial University
t: 709.864.8129 f: 709.864.7531 e: lerohr@mun.ca
PE 2027

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

Bishop, Lisa

Wed 8/26, 2:35 PM

Thank you for the opportunity to review your proposals. We have no concerns from pharmacy's perspective.

Lisa

Dr. Lisa D. Bishop, BScPharm, ACPR, Pharm D, FCSHP | Associate Professor and Acting Associate Dean of Undergraduate Studies

School of Pharmacy
Clinical Assistant Professor, Discipline of Family Medicine, Faculty of Medicine
Memorial University of Newfoundland
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Heather

Heather Bugler
Assistant to the Dean
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Memorial University of Newfoundland
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cvardy@mun.ca

Wed 8/26, 9:24 AM

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158 KB

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Good morning

The Faculty of Medicine is supportive of these new course proposals.

Regards,

Dr. Cathy Vardy
Vice Dean
Faculty of Medicine

Annie Mercier <amercier@mun.ca>

Wed 8/26, 8:58 AM

Dear Janet:

Our committee has reviewed the proposals and we are unanimously supportive; these look like excellent courses. We are glad to see another first-year blended course being added to the calendar!

Good luck with these offerings.

All the best,

Annie

Annie Mercier, PhD
Professor and Deputy Head
Department of Ocean Sciences
Memorial University
709-864-2011
amercier@mun.ca

Engineering Consult <engrconsult@mun.ca>

Tue 8/25, 4:04 PM

Dear Dr. Brunton,

Thank you for the opportunity to comment on the proposal for two new courses, BIOC 1600 and BIOC 4232. The Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science is not scheduled to meet again until September 16.

I see no impact on Engineering programs from this proposal and I am happy to support it. I believe that only BIOC 1600 needs to go to the Senate Committee on Undergraduate Studies, as BIOC 4232 has a number within the existing block of special topics courses in the Calendar.

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

Gaudine, Alice

Mon 8/24/2020 1:50 PM

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Hello,

The Faculty of Nursing supports the proposal for the Special Topics course Bioc 4232 and the accessible science course Bioc 1600. Congratulations of developing Bioc 1600, a course that should be of interest and value to all undergraduate students and has the potential to be revenue generating.

Alice Gaudine
Dean and Professor
Faculty of Nursing

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☒ New course(s): **Special Topics Course BIOC 4232 Enzymes and Receptors**
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

ADMINISTRATIVE AUTHORIZATION

By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Senate Summary Page for Courses

COURSE NUMBER AND TITLE

Special Topics Course: **Biochemistry 4232 Enzyme and Receptors**

REVISED COURSE NUMBER AND TITLE

N/A

ABBREVIATED COURSE TITLE

Enzymes and Receptors

RATIONALE

The proposed course aims to teach advanced concepts of cellular enzymes and receptors, which are not included in the current curriculum at MUN Biochemistry. This course should be of high interest to Biochemistry students, especially those who plan to pursue or are pursuing biomedical or pharmaceutical research. The course will draw parallels between the quantitative constants used to describe enzymes and receptors, highlighting that in most fields, quantification of protein behaviour uses similar approaches. Through this course, students will gain in-depth knowledge of the molecular basis of enzyme-catalyzed reactions and receptor-driven signalling, as well as a strong foundation of quantitative interpretation of experimental data and of mathematical tools applicable to biomolecular interactions. Student learning will be achieved by a series of instructor lectures, student presentations and discussions, and practical assignments designed to provide independent research experience.

CALENDAR CHANGES

None required for a Special Topics course

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received and Date
Business Administration	Yes; Date: 01/09/2020
Chemistry	Yes; Date: 14/09/2020
School of Music	Yes; Date: 01/09/2020
Computer Science	No
Mathematics and Statistics	No
Ocean Sciences	Yes; Date: 26/08/2020
Psychology	No
Biology	Yes; Date: 14/09/2020
Physics	No
Humanities and Social Sciences	No
Geography	No
Human Kinetics and Recreation	Yes; Date: 27/08/2020
Pharmacy	Yes; Date: 26/08/2020
Nursing	Yes; Date: 24/08/2020
Arts and Social Sciences (Grenfell)	No
Science and the Environment (Grenfell)	No
Fine Arts (Grenfell)	No
Marine Institute	No
Medicine	Yes; Date: 26/08/2020
Engineering	Yes; Date: 25/08/2020
Education	No

Consultation feedback is attached.

LIBRARY REPORT

The library report was requested on Aug 24, 2020 and is pending

RESOURCE IMPLICATIONS

There are no additional resources required to offer this course.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

SAMPLE COURSE OUTLINE

Instructors:

Dr. Mark Berry and Dr. Jaeok Park

Anticipated enrollment:

10-15 undergraduates

Course description:

This course will examine the structure and function of cellular enzymes and receptors. The molecular basis of enzyme-catalyzed reactions and receptor-driven signalling, as well as the equations and constants used to describe these processes, will be discussed in detail. The concept of enzymes and receptors as pharmaceutical targets will be highlighted with specific examples.

Pre-requisite:

BIOC 3105, or permission of the instructors

Required textbooks:

None. Readings will be assigned from the primary literature.

Course outline:

I. Section Enzymes

1. Basic principles of chemical reactions
 - a. Kinetics and thermodynamics of chemical reactions
 - b. The law of mass action
 - c. Order of a reaction
2. Basic concepts of enzyme action
 - a. Free energy and enzyme-catalyzed reactions
 - b. Transition state theory
 - c. Formation of an enzyme-substrate complex
3. Introduction to enzyme kinetics
 - a. The steady state

- b. The Michaelis-Menten equation and linearization methods
 - c. Application of the Michaelis-Menten parameters
- 4. Enzyme kinetic mechanisms
 - a. Multiple substrates and products
 - b. Order of substrate binding and product release
 - c. Mechanisms of catalysis
- 5. Enzyme inhibition
 - a. Reversible inhibition
 - b. Substrate inhibition and product inhibition
 - c. Tight-binding inhibitors and irreversible inhibitors
- 6. Enzymes as drug targets
 - a. Enzyme inhibition as a basis of drug action
 - b. Approaches of drug discovery
 - c. Structure-based drug design
- 7. Other aspects of enzyme function
 - a. Co-factors and co-enzymes
 - b. Allosteric enzyme regulation
 - c. Enzyme transporters and molecular motors
- 8. Practical aspects of enzyme kinetics
 - a. Enzyme assay methods
 - b. Calorimetry for enzyme reactions
 - c. Considerations for experimental design

II. Section Receptors

- 1. Classical receptor theorem
 - a. Ligand/receptor efficacy
 - b. Quantification – concentration (dose) – response curves, Hill analysis, Schild Analysis
- 2. Review of signal transduction
 - a. GPCR
 - i. Type A (eg. β -adrenoceptors, dopamine receptors, μ -opioid receptors)
 - ii. Type B (eg. angiotensin II, vasopressin, substance P)
 - iii. Type C (eg. GABA-B; mGluR; TAS1)
 - iv. Heterotrimeric G protein sub-types
 - v. Receptor dimerization
 - b. Ionotropic receptors
 - i. GABA-A receptor
 - ii. Nicotinic acetylcholine receptor

- c. Tyrosine kinase receptors
- 3. Receptor theorem in 20th century
 - a. Quantification – potency ratios
- 4. Biased signalling
 - a. System bias
 - b. Measurement bias
 - c. Ligand-dependent bias
 - i. G-protein versus β -arrestin
 - 1. Phosphorylation bar-codes
 - ii. Non- β -arrestin coupling (PDZ and non-PDZ domain proteins)
 - iii. Ligand-induced G-protein recruitment bias
 - iv. Receptor dimerization

Methods of evaluation:

Class presentations – 30% (15% enzymes, 15% receptors – see below for details)
Assignment 1 (Data quantification) – 15% (2 - 4 data sets at equal weighting)
Assignment 2 (Undergraduate lab design) – 15%
Assignment 3 (Summer research proposal) – 40% (5% outline + annotated bibliography; 10% draft 1; 25% final submission)

Class Presentations:

The class will be divided into groups of 3-4 at the start of the semester with each group member responsible for providing one oral presentation related to the enzyme material and one with respect to the receptor material.

For the enzymes section, each student will give a 10-minute PowerPoint-style presentation/5-minute Q&A session on a current clinical drug target enzyme. The specific topics to be covered include: the function of the given enzyme and its significance in biology/human physiology; the kinetic and chemical mechanisms of the enzyme-catalyzed reaction; the mechanism of action of the clinical drug(s) targeting this enzyme; and the relevant *in vitro* and/or cell-based enzyme assay methods. Grading will be based on the students' performance as a presenter (10%) as well as a participating audience member (5%). The target enzymes will be randomly assigned early in the course; students are encouraged to review the lecture material in the context of their assigned enzymes. Students are welcome to incorporate their findings from this exercise into Assignment 2 or Assignment 3.

For the receptor presentations each group will prepare 3 infographics that will provide specific examples of receptor signalling selected from the various classes of receptor to be covered (Class A, B, and C GPCR, ionotropic receptors, and tyrosine kinase receptors). Classes of receptors from which a specific example is to be chosen will be assigned to each group to ensure uniform coverage of each receptor class. Each

member of the group will give a 10 minute oral presentation with 5 minute questions, on one of the infographics. Infographics will be submitted in writing in advance of the class in which the material will be presented, and will contain details of signal transduction, distribution, and physiological/pathological relevance of the selected receptor. Corrected infographics based on feedback from both written and oral submissions will be available to all class members as part of the course material. Each group will be graded on each infographic (3 x 4% each [only the top 3 grades will count towards the final grade], and each individual graded based on their oral presentation and knowledge of the receptor (1 x 3%).

Assignments:

Assignment 1 – Students will be provided with raw enzyme kinetic (1-2) and receptor binding (1-2) datasets from which they will use the quantification methods covered in class to quantify and characterize the enzyme/receptor.

Assignment 2 - Students will provide a 2-3 page proposal for a 3-hour undergraduate laboratory exercise, based on the quantification methods covered in class. The proposal will be in the form of a laboratory manual and provide the theoretical background behind the experiment, and a step-by-step protocol for the laboratory session. The proposal will finish with details on the type(s) of data analysis to be conducted. A primary literature citation on which the proposal is based is required.

Assignment 3 – Students will provide a 3-4 page 16-week summer research proposal for the characterization of a named enzyme or receptor. The proposal can be either health- or basic science-based and should consist of the following sections: 1) Literature review; 2) Hypothesis and Aim(s); 3) Experimental Approach; 4) Expected results. A full reference list (not part of the page limit) must also be included.

NB: If *Assignment 2* is enzyme-based then *Assignment 3* must be receptor-based and vice versa.

BiocDHundergrad

Reply all |

Mon 8/24/2020 11:35 AM

To: Faculty of Humanities and Social Sciences; Shannahan, Rachelle; Collett, Meghan; engrconsult@mun.ca; Rohr, Linda; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D; DeanNurse; pharminfo@mun.ca; Dean of Science; adeanugradswk; Library Correspondence; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca

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


phone 709 864-8533 fax: 709 864-2422

[Reply all](#) |  [Delete](#) [Junk](#) | 

Fwd: FW: Consultation Request: Two Biochemistry Course Proposals

**Suzanne Dufour** <sdufour@mun.ca>

Fri 9/18, 12:19 PM

BiocDHundergrad; Jody Burke <jodyb@mun.ca>  [Reply all](#) | 

Inbox

Special Topics Course Pr... 

157 KB

Biochemistry 1600.pdf 

547 KB

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Hi Janet,

The Biology Undergraduate Studies Committee has reviewed the two Biochemistry course proposals. We are supportive of those new courses.

Best wishes,

Suzanne

Suzanne Dufour
Associate Professor and Deputy Head (Undergraduate)
Department of Biology
Memorial University of Newfoundland
St. John's, NL
A1B 3X9
Canada

Tel: (709)864-8025
Fax: (709)864-3018

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

Subject:FW: Consultation Request: Two Biochemistry Course Proposals

FW: Consultation Request: Two Biochemistry Course Proposals

BiocDHundergrad

Tue 9/15/2020 3:13 PM

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Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
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phone 709 864-8533 fax: 709 864-2422

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BiocDHundergrad

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Cc: mkatz@mun.ca; jbrunton@mun.ca

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Rachelle Shannahan

Rachelle J. Shannahan, PhD
Associate Dean, Academic Programs
Faculty of Business Administration
Memorial University of Newfoundland

rshannahan@mun.ca

Sutherland, Ian D

Tue 9/1, 11:23 AM

Good morning,

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Sincerely,

Ian Sutherland, PhD (Exon)

DEAN

School of Music

Memorial University

www.mun.ca/music

Rohr, Linda

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PE 2027

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Lisa

Dr. Lisa D. Bishop, BScPharm, ACPR, Pharm D, FCSHP | Associate Professor and Acting Associate Dean of Undergraduate Studies

School of Pharmacy
Clinical Assistant Professor, Discipline of Family Medicine, Faculty of Medicine
Memorial University of Newfoundland
Health Sciences Centre
300 Prince Philip Drive
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Heather

Heather Bugler
Assistant to the Dean
School of Pharmacy
Memorial University of Newfoundland
Room 3441, Health Sciences Centre
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cvardy@mun.ca

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Vice Dean
Faculty of Medicine

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Annie Mercier, PhD
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Engineering Consult <engrconsult@mun.ca>

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

Gaudine, Alice

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Alice Gaudine
Dean and Professor
Faculty of Nursing



Office of the Registrar

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

November 12, 2020

TO: All Members of Faculty Council, Faculty of Science

FROM: Tracey Edmunds, Secretary, Faculty of Science Committee on Undergraduate Studies

SUBJECT: **Proposals for Calendar Changes**

At a meeting held on November 4, 2020, the Faculty of Science Committee on Undergraduate Studies agreed that the following item should be forwarded to Faculty Council for approval:

1. Department of Chemistry

- (a) Proposal to Amend Course : Chemistry 1010 – Introductory Chemistry I
- (b) Proposal for a New Course: Chemistry 4310 – Surface and Interface Science
- (c) Proposal for a New Course: Chemistry 4431 – Heterocyclic Chemistry
- (d) Proposal for New Special Topics Blocks

Tracey Edmunds

Tracey Edmunds

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☐ New course(s):
- X Amended or deleted course(s): Amended - CHEM 1010
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

ADMINISTRATIVE AUTHORIZATION

By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Senate Summary Page for Courses

COURSE NUMBER AND TITLE

Chemistry 1010 Introductory Chemistry I

RATIONALE

The intent of Chemistry 1010 is to be a preparatory course for students with limited prior exposure to chemistry, and who do not yet meet the pre-requisites for Chemistry 1050. The current regulations do not preclude a student from effectively going backwards to take Chem 1010 for credit after completing Chem 1050. We wish to prevent this from occurring.

CALENDAR CHANGES

1010 Introductory Chemistry I examines descriptive chemistry; measurements; atoms; molecules; the mole; mole calculations and reaction stoichiometry; the balancing of redox reactions; gases; thermochemistry; introduction to chemical kinetics and equilibrium; acids and bases. This course is intended to be a preparatory course to build the necessary foundations for Chemistry 1050 and 1051. This course meets the pre-requisites for CHEM 1050.

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.

CR: CHEM 1810; must not have successfully completed or be currently registered in CHEM 1050 or CHEM 1200

LC: 4

LH: 3 hours biweekly alternating with tutorials

OR: 1.5 hour tutorial alternating with labs

PR: Science 1807 and Science 1808. It is recommended that students have successfully completed high school Academic Mathematics 3201, or a pass in any university level mathematics course

UL: only 6 science credit hours will be awarded for a major or honours in Chemistry from the following course groups: CHEM 1010/1050/1051, or CHEM 1810/1200/1001 (Grenfell Campus), or CHEM 1010/the former 1011/the former 1031

CALENDAR ENTRY AFTER CHANGES

1010 Introductory Chemistry I examines descriptive chemistry; measurements; atoms; molecules; the mole; mole calculations and reaction stoichiometry; the balancing of redox reactions; gases; thermochemistry; introduction to chemical kinetics and

equilibrium; acids and bases. This course is intended to be a preparatory course to build the necessary foundations for Chemistry 1050 and 1051. This course meets the pre-requisites for CHEM 1050.

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.

CR: CHEM 1810; must not have successfully completed or be currently registered in CHEM 1050 or CHEM 1200

LC: 4

LH: 3 hours biweekly alternating with tutorials

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Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	No
Business Administration	No
Education	Yes
Engineering and Applied Science	Yes
Human Kinetics and Recreation	Yes
Marine Institute	Yes
Medicine	Yes
Music	Yes
Nursing	Yes
Pharmacy	No
Science	
Biochemistry	No
Biology	Yes
Computer Science	No
Earth Sciences	No
Mathematics and Statistics	No
Ocean Sciences	No
Office of the Dean	No
Physics and Physical Oceanography	No
Psychology	No
Social Work	No
Library	No
Grenfell - Arts and Social Science	No
Grenfell - Science and the Environment	No
Grenfell - Fine Arts	No

RESOURCE IMPLICATIONS

Nil

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Reynolds, Denise <gdreynolds@mun.ca>
To chemconsult@mun.ca <chemconsult@mun.ca>
Date 2020-09-12 11:09



Hi Mike,

Thank you for the opportunity to comment on these calendar change proposals. The Faculty of Education has no concerns with the proposed changes.

Regards,

Denise

Denise Reynolds | Manager, Academic Programs

Faculty of Education, Office of Academic Programs ED-2020

Memorial University of Newfoundland

St. John's, NL A1B 3X8

This communication is intended for the use of the recipient to whom it is addressed, and may contain confidential, personal, and/or privileged information. Please contact the sender by reply email immediately if you are not the intended recipient of this communication, and do not copy, distribute, or take action relying on it. Any communication received in error should be deleted or destroyed.

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Faculty of Education, Academic Programs Office
Sent: Tuesday, September 8, 2020 12:56 PM
To: Reynolds, Denise
Subject: FW: Calendar Changes - Chemistry (St. John's Campus)

Hi Denise,

These are for you. Meghan would review these to ensure they did not have any bearing on the Faculty of Education.

Thanks,

Katie

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

From: Department of Chemistry Consult [<mailto:chemconsult@mun.ca>]
Sent: September 4, 2020 5:08 PM
To: Faculty of Education, Academic Programs Office <muneduc@mun.ca>
Subject: Fwd: Calendar Changes - Chemistry (St. John's Campus)

Faculty of Education,

My apologies for sending this out to mcollett@mun.ca rather than muneduc@mun.ca. I will do my best to not make this mistake again.

please find attached 4 proposed calendar changes.

Best,

Mike

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

Subject: Calendar Changes - Chemistry (St. John's Campus)

Date: 2020-09-04 17:00

From: Department of Chemistry Consult <chemconsult@mun.ca>

To: Hss@mun.ca, rshannahan@mun.ca, mcollett@mun.ca, engrconsult@mun.ca, kjacobse@grenfell.mun.ca, ssedean@grenfell.mun.ca, thennessey@grenfell.mun.ca, lerohr@mun.ca, miugconsultations@mi.mun.ca, deanofmedicine@med.mun.ca, isutherland@mun.ca, deanNurse@mun.ca, pharminfo@mun.ca, deansci@mun.ca, adeanugradswk@mun.ca, univlib@mun.ca

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

Chem 1010 - there was a scenario where students who passed Chem 1050 could take/retake Chem 1010. This is not in the spirit of Chem 1010 and so the change would fix this.

Chem 4310/4431 - These are two courses that are offered at the 6000 level. Undergraduate students were able to take these courses as a special topics course in the past with approval from the instructor.

This change would make the course an official undergraduate course and thus would not require approval from the instructor.

Special topics courses - Currently, special topics in chemistry at the undergraduate level had one course number per division/discipline. If two faculty offered two different special topics courses in the same division/discipline, then a student would not be able to take both. The proposal seeks to create a block of special topics courses in each division/discipline in order to ensure students are able to get the most out of their undergraduate (and graduate) programs moving forward.

Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Engineering Consult <engrconsult@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Cc Jayde Edmunds <edmundsj@mun.ca>, Dennis Peters
<dpeters@mun.ca>, Bruce Quinton <bruce.quinton@mun.ca>
Date 2020-09-16 16:58



Dear Dr. Katz,

Thank you for the opportunity to comment on the proposed changes to CHEM 1010, 4310, 4431 and special topics. At its meeting this afternoon, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science found no impact on Engineering programs from these proposed changes and we are happy to support them.

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

On 2020-09-04 17:00, Department of Chemistry Consult wrote:

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Rohr, Linda <lrohr@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-15 17:55



Hello,

No concerns from HKR for the proposed changes to Chemistry.

Linda

Linda E. Rohr PhD

Dean, School of Human Kinetics & Recreation

Memorial University

t: 709.864.8129 f: 709.864.7531 e: lrohr@mun.ca

PE 2027

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: Friday, September 4, 2020 at 3:30 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>, "Shannahan, Rachelle" <rshannahan@mun.ca>, "Collett, Meghan" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, Linda Rohr <lrohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "deanofmedicine@med.mun.ca" <deanofmedicine@med.mun.ca>, "Sutherland, Ian D" <isutherland@mun.ca>, DeanNurse <DeanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, Dean of Science <deansci@mun.ca>, adeanugradswk <adeanugradswk@mun.ca>, Library Correspondence <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

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I have attached 4 calendar changes proposals from the Department of

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject RE: Calendar Changes - Chemistry (St. John's Campus)
From MIUG Consultations <MIUGconsultations@mi.mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-17 16:12



Hello,

Thank you for the opportunity to review and comment on the proposals for calendar changes to chemistry courses.

This will have no impact on Marine Institute programs and we are in support of the proposal.

Regards,
Bev

Bev Fleet
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0369
FAX: 709-778-0535
Bev.Fleet@mi.mun.ca

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Hss@mun.ca; rshannahan@mun.ca; mcollett@mun.ca; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; lerohr@mun.ca; MIUG Consultations <MIUGconsultations@mi.mun.ca>; deanofmedicine@med.mun.ca; isutherland@mun.ca; deanNurse@mun.ca; pharminfo@mun.ca; deansci@mun.ca; adeanugradswk@mun.ca; univlib@mun.ca
Subject: Calendar Changes - Chemistry (St. John's Campus)

Dear All,

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)
From <cvaridy@mun.ca>
To <chemconsult@mun.ca>
Date 2020-09-08 11:54



- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- ATT00001.htm (~243 B)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- ATT00002.htm (~243 B)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- ATT00003.htm (~243 B)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)
- ATT00004.htm (~202 B)

Dr. Katz

The Faculty of Medicine is supportive of the 4 calendar changes as outlined in your email and attachments.

Regards,

Dr. Cathy Vardy

Vice Dean of Medicine

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: September 4, 2020 at 4:59:39 PM NDT

To: "Hss@mun.ca" <Hss@mun.ca>, "rshannahan@mun.ca" <rshannahan@mun.ca>, "mcollett@mun.ca" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, "lerohr@mun.ca" <lerohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "Steele, Dr. Margaret: Dean of Medicine" <DeanofMedicine@med.mun.ca>, "isutherland@mun.ca" <isutherland@mun.ca>, "deanNurse@mun.ca" <deanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, "deansci@mun.ca" <deansci@mun.ca>, "adeanugradswk@mun.ca" <adeanugradswk@mun.ca>, "univlib@mun.ca" <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

10/5/2020

Memorial Webmail :: FW: Calendar Changes - Chemistry (St. John's Campus)

Paper 5.A.c (page 56
of 154)

Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Sutherland, Ian D <isutherland@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-07 16:06



The School of Music has no issue with the proposed changes.

Sincerely,

Ian Sutherland, PhD (Exon)
DEAN
School of Music
Memorial University
www.mun.ca/music

On 2020-09-04, 5:00 PM, "Department of Chemistry Consult" <chemconsult@mun.ca> wrote:

Dear All,

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)**From** Gaudine, Alice <agaudine@mun.ca>**To** <chemconsult@mun.ca>**Date** 2020-09-09 11:26

- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)

Hello,

I support these changes.

Alice Gaudine, PhD, RN
Dean and Professor, Faculty of Nursing
Memorial University of Newfoundland
St. John's, NL A1B 3V6
Tel: (709) 864-4549
E-mail: agaudine@mun.ca

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

From: Department of Chemistry Consult <chemconsult@mun.ca>

Sent: Friday, September 4, 2020 5:00 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkat@mun.ca
709-864-8745
www.KatzResearchGroup.com

Michael Katz

From: Suzanne Dufour <sdufour@mun.ca>
Sent: September 18, 2020 12:18 PM
To: mkatz@mun.ca; Jody Burke
Subject: Fwd: FW: Calendar Changes - Chemistry (St. John's Campus)
Attachments: Calendar Change Proposal - CHEM 4310.pdf; Calendar Change Proposal - CHEM 4431.pdf; Calendar Change Proposal - Special Topics Courses.pdf; Calendar Change Proposal - CHEM 1010.pdf

Dear Michael,

The Biology Undergraduate Studies Committee has reviewed the 4 calendar change proposals from the Department of Chemistry. We are supportive of the proposed changes.

Best wishes,
Suzanne

--

Suzanne Dufour
Associate Professor and Deputy Head (Biology) Department of Biology Memorial University of Newfoundland St. John's,
NL A1B 3X9 Canada

Tel: (709) 864-8025
Fax: (709) 864-3018

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

Subject: FW: Calendar Changes - Chemistry (St. John's Campus)
Date: 2020-09-08 09:40
From: Dean of Science <deansci@mun.ca>
To: Amina Ahmed Mahmood <aamahmood@mun.ca>, "Todd, Amy M." <amy.todd@mun.ca>, BiocDHundergrad <biocdhundergrad@mun.ca>, "Hyde, Cathy" <cathy@mun.ca>, Chemistry <chemconsult@mun.ca>, Computer Science consultation <compsci@mun.ca>, Earth Sciences <eascugcon@mun.ca>, James Munroe <jmunroe@mun.ca>, Math & Stats <mathconsult@mun.ca>, Ocean Sciences <amercier@mun.ca>, "Goulding, Rick" <rgoulding@mun.ca>, Psychology consult <psychdeputyhead@mun.ca>, "Newhook, Rebecca" <rnewhook@mun.ca>, "Sharene Bungay" <sharene@mun.ca>, Suzanne Dufour <sdufour@mun.ca>, "Mackenzie, Theresa" <tmackenz@mun.ca>, "Fridgen, Travis" <tfridgen@mun.ca>

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>
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Thank you to all the departments for taking the time to consider these changes.

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☒ New course(s): CHEM 4310
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

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By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Senate Summary Page for Courses

COURSE NUMBER AND TITLE

CHEM 4310 Surface and Interface Science

ABBREVIATED TITLE

Surface and Interface Science

RATIONALE

Surface science provides the perspective and the tools to address such diverse problems as immune system response or metal wear in extreme ocean environments. The current commercial drive toward miniaturization and nanotechnology is making surface and interface effects ever more important. With the emergence of high-resolution surface science tools and expanding computational power, it is becoming possible to unravel the complex composition, structure, and properties of surfaces and interfaces with increasing precision.

This course exists already as a Graduate course, CHEM 6381. The intent is to offer this course for undergraduate students as well, without requiring special sign-in permissions, such that it would meet the requirements of a 4000-level course for Honours students without using a course substitution.

CALENDAR CHANGES

4310 Surface and Interface Science covers the structure and properties of surfaces and interfaces, including the thermodynamics of interfacial processes and the consequences of reduced dimensionality on electronic, optical, and other chemical properties. Interfaces between solids, liquids and gases will be considered, with possible applications in separation science, micro/nanofabrication, and biofouling.

PR: CHEM 3303

CALENDAR ENTRY AFTER CHANGES

4310 Surface and Interface Science covers the structure and properties of surfaces and interfaces, including the thermodynamics of interfacial processes and the consequences of reduced dimensionality on electronic, optical, and other chemical properties. Interfaces between solids, liquids and gases will be considered, with possible applications in separation science, micro/nanofabrication, and biofouling.

PR: CHEM 3303

SECONDARY CALENDAR CHANGES

Nil

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	No
Business Administration	No
Education	Yes
Engineering and Applied Science	Yes
Human Kinetics and Recreation	Yes
Marine Institute	Yes
Medicine	Yes
Music	Yes
Nursing	Yes
Pharmacy	No
Science	
Biochemistry	No
Biology	Yes
Computer Science	No
Earth Sciences	No
Mathematics and Statistics	No
Ocean Sciences	No
Office of the Dean	No
Physics and Physical Oceanography	No
Psychology	No
Social Work	No
Library	No
Grenfell - Arts and Social Science	No
Grenfell - Science and the Environment	No
Grenfell - Fine Arts	No

RESOURCE IMPLICATIONS

Nil

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

Included following summary of consultations.

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Reynolds, Denise <gdreynolds@mun.ca>
To chemconsult@mun.ca <chemconsult@mun.ca>
Date 2020-09-12 11:09



Hi Mike,

Thank you for the opportunity to comment on these calendar change proposals. The Faculty of Education has no concerns with the proposed changes.

Regards,

Denise

Denise Reynolds | Manager, Academic Programs

Faculty of Education, Office of Academic Programs ED-2020

Memorial University of Newfoundland

St. John's, NL A1B 3X8

This communication is intended for the use of the recipient to whom it is addressed, and may contain confidential, personal, and/or privileged information. Please contact the sender by reply email immediately if you are not the intended recipient of this communication, and do not copy, distribute, or take action relying on it. Any communication received in error should be deleted or destroyed.

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Faculty of Education, Academic Programs Office
Sent: Tuesday, September 8, 2020 12:56 PM
To: Reynolds, Denise
Subject: FW: Calendar Changes - Chemistry (St. John's Campus)

Hi Denise,

These are for you. Meghan would review these to ensure they did not have any bearing on the Faculty of Education.

Thanks,

Katie

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

From: Department of Chemistry Consult [<mailto:chemconsult@mun.ca>]
Sent: September 4, 2020 5:08 PM
To: Faculty of Education, Academic Programs Office <muneduc@mun.ca>
Subject: Fwd: Calendar Changes - Chemistry (St. John's Campus)

Faculty of Education,

My apologies for sending this out to mcollett@mun.ca rather than muneduc@mun.ca. I will do my best to not make this mistake again.

please find attached 4 proposed calendar changes.

Best,

Mike

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

Subject: Calendar Changes - Chemistry (St. John's Campus)

Date: 2020-09-04 17:00

From: Department of Chemistry Consult <chemconsult@mun.ca>

To: Hss@mun.ca, rshannahan@mun.ca, mcollett@mun.ca, engrconsult@mun.ca, kjacobse@grenfell.mun.ca, ssedean@grenfell.mun.ca, thennessey@grenfell.mun.ca, lerohr@mun.ca, miugconsultations@mi.mun.ca, deanofmedicine@med.mun.ca, isutherland@mun.ca, deanNurse@mun.ca, pharminfo@mun.ca, deansci@mun.ca, adeanugradswk@mun.ca, univlib@mun.ca

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

Chem 1010 - there was a scenario where students who passed Chem 1050 could take/retake Chem 1010. This is not in the spirit of Chem 1010 and so the change would fix this.

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Engineering Consult <engrconsult@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Cc Jayde Edmunds <edmundsj@mun.ca>, Dennis Peters <dpeters@mun.ca>, Bruce Quinton <bruce.quinton@mun.ca>
Date 2020-09-16 16:58



Dear Dr. Katz,

Thank you for the opportunity to comment on the proposed changes to CHEM 1010, 4310, 4431 and special topics. At its meeting this afternoon, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science found no impact on Engineering programs from these proposed changes and we are happy to support them.

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

On 2020-09-04 17:00, Department of Chemistry Consult wrote:

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Rohr, Linda <lrohr@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-15 17:55



Hello,

No concerns from HKR for the proposed changes to Chemistry.

Linda

Linda E. Rohr PhD

Dean, School of Human Kinetics & Recreation

Memorial University

t: 709.864.8129 f: 709.864.7531 e: lrohr@mun.ca

PE 2027

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: Friday, September 4, 2020 at 3:30 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>, "Shannahan, Rachelle" <rshannahan@mun.ca>, "Collett, Meghan" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, Linda Rohr <lrohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "deanofmedicine@med.mun.ca" <deanofmedicine@med.mun.ca>, "Sutherland, Ian D" <isutherland@mun.ca>, DeanNurse <DeanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, Dean of Science <deansci@mun.ca>, adeanugradswk <adeanugradswk@mun.ca>, Library Correspondence <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

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Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject RE: Calendar Changes - Chemistry (St. John's Campus)
From MIUG Consultations <MIUGconsultations@mi.mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-17 16:12



Hello,

Thank you for the opportunity to review and comment on the proposals for calendar changes to chemistry courses.

This will have no impact on Marine Institute programs and we are in support of the proposal.

Regards,
Bev

Bev Fleet
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0369
FAX: 709-778-0535
Bev.Fleet@mi.mun.ca

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Hss@mun.ca; rshannahan@mun.ca; mcollett@mun.ca; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; lerohr@mun.ca; MIUG Consultations <MIUGconsultations@mi.mun.ca>; deanofmedicine@med.mun.ca; isutherland@mun.ca; deanNurse@mun.ca; pharminfo@mun.ca; deansci@mun.ca; adeanugradswk@mun.ca; univlib@mun.ca
Subject: Calendar Changes - Chemistry (St. John's Campus)

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)
From <cvaridy@mun.ca>
To <chemconsult@mun.ca>
Date 2020-09-08 11:54



- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- ATT00001.htm (~243 B)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- ATT00002.htm (~243 B)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- ATT00003.htm (~243 B)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)
- ATT00004.htm (~202 B)

Dr. Katz

The Faculty of Medicine is supportive of the 4 calendar changes as outlined in your email and attachments.

Regards,

Dr. Cathy Vardy

Vice Dean of Medicine

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: September 4, 2020 at 4:59:39 PM NDT

To: "Hss@mun.ca" <Hss@mun.ca>, "rshannahan@mun.ca" <rshannahan@mun.ca>, "mcollett@mun.ca" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, "lerohr@mun.ca" <lerohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "Steele, Dr. Margaret: Dean of Medicine" <DeanofMedicine@med.mun.ca>, "isutherland@mun.ca" <isutherland@mun.ca>, "deanNurse@mun.ca" <deanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, "deansci@mun.ca" <deansci@mun.ca>, "adeanugradswk@mun.ca" <adeanugradswk@mun.ca>, "univlib@mun.ca" <univlib@mun.ca>

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

10/5/2020

Memorial Webmail :: FW: Calendar Changes - Chemistry (St. John's Campus) Paper 5.A.d (page 71

of 154)

Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Sutherland, Ian D <isutherland@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-07 16:06



The School of Music has no issue with the proposed changes.

Sincerely,

Ian Sutherland, PhD (Exon)
DEAN
School of Music
Memorial University
www.mun.ca/music

On 2020-09-04, 5:00 PM, "Department of Chemistry Consult" <chemconsult@mun.ca> wrote:

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Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)**From** Gaudine, Alice <agaudine@mun.ca>**To** <chemconsult@mun.ca>**Date** 2020-09-09 11:26

- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)

Hello,

I support these changes.

Alice Gaudine, PhD, RN
Dean and Professor, Faculty of Nursing
Memorial University of Newfoundland
St. John's, NL A1B 3V6
Tel: (709) 864-4549
E-mail: agaudine@mun.ca

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

From: Department of Chemistry Consult <chemconsult@mun.ca>

Sent: Friday, September 4, 2020 5:00 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>

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Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Michael Katz

From: Suzanne Dufour <sdufour@mun.ca>
Sent: September 18, 2020 12:18 PM
To: mkatz@mun.ca; Jody Burke
Subject: Fwd: FW: Calendar Changes - Chemistry (St. John's Campus)
Attachments: Calendar Change Proposal - CHEM 4310.pdf; Calendar Change Proposal - CHEM 4431.pdf; Calendar Change Proposal - Special Topics Courses.pdf; Calendar Change Proposal - CHEM 1010.pdf

Dear Michael,

The Biology Undergraduate Studies Committee has reviewed the 4 calendar change proposals from the Department of Chemistry. We are supportive of the proposed changes.

Best wishes,
Suzanne

--

Suzanne Dufour
Associate Professor and Deputy Head (Biology) Department of Biology Memorial University of Newfoundland St. John's,
NL A1B 3X9 Canada

Tel:(709)864-8025
Fax: (709)864-3018

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

Subject: FW: Calendar Changes - Chemistry (St. John's Campus)
Date: 2020-09-08 09:40
From: Dean of Science <deansci@mun.ca>
To: Amina Ahmed Mahmood <aamahmood@mun.ca>, "Todd, Amy M." <amy.todd@mun.ca>, BiocDHundergrad <biocdhundergrad@mun.ca>, "Hyde, Cathy" <cathy@mun.ca>, Chemistry <chemconsult@mun.ca>, Computer Science consultation <compsci@mun.ca>, Earth Sciences <eascugcon@mun.ca>, James Munroe <jmunroe@mun.ca>, Math & Stats <mathconsult@mun.ca>, Ocean Sciences <amercier@mun.ca>, "Goulding, Rick" <rgoulding@mun.ca>, Psychology consult <psychdeputyhead@mun.ca>, "Newhook, Rebecca" <rnewhook@mun.ca>, "Sharene Bungay" <sharene@mun.ca>, Suzanne Dufour <sdufour@mun.ca>, "Mackenzie, Theresa" <tmackenz@mun.ca>, "Fridgen, Travis" <tfridgen@mun.ca>

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>
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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Surface science provides the perspective and the tools to address such diverse problems as immune system response or metal wear in extreme ocean environments. The current commercial drive toward miniaturization and nanotechnology is making surface and interface effects ever more important. With the emergence of high-resolution surface science tools and expanding computational power, it is becoming possible to unravel the complex composition, structure, and properties of surfaces and interfaces with increasing precision.

This course covers the structure and properties of surfaces and interfaces, including the thermodynamics of interfacial processes and the consequences of reduced dimensionality on electronic, optical, and other chemical properties. Interfaces between solids, liquids and gases will be considered, with possible applications in separation science, micro/nanofabrication, and biofouling. While the course is taught from the perspective of a chemist, it will certainly find applicability for physicists, engineers, and biologists as well.

We assume a background similar to our undergraduate quantum chemistry (Chem 4304) and statistical thermodynamics (Chem 3303) courses, with the class aimed at the level of [Adamson's Physical Chemistry of Surfaces](#) and [Somorjai's Introduction to Surface Chemistry and Catalysis](#). While there is no textbook for the course, I can recommend texts from our library for various topics (some will be on reserve). A substantial amount of the reading will be from the current primary literature.

Outline:

1. Solid surfaces
 - Structure (crystal planes, reconstruction)
 - Crystal growth, thin solid films
 - Chemisorption, catalysis
2. Liquid interfaces
 - Wetting, adsorption, mixing
 - Thin polymer films (including biopolymers)
3. Surface preparation techniques (including micro/nanofabrication, Langmuir films, "self-assembled" monolayers, and preparing surfaces as biological substrates)
4. Surface characterization techniques (including microscopy and spectroscopy)

Evaluation scheme:

Midterm test (1)	15%
Oral presentation	15%
Assignment	15%
Additional materials	15%
Final exam	40%

We will develop rubrics (marking guidelines) as a class, so that everyone understands the expectations for the course and can identify resources which will help them to meet those expectations.

Alternate forms of assessment are also available. For example, oral tests are available for all students in addition to or instead of a written midterm test or final exam.

Your project will consist of three parts:

- Oral presentation - in-class presentation (~30 mins) or alternate format
- Assignment - set of questions for your classmates based on your presentation (you must include complete solutions for grading purposes)
- Additional materials to support your presentation. At minimum you should provide a 1-page summary of your topic with references. (The references don't count toward the page limit.)
 - We will discuss this component as a class, and determine the rubric (expectations) as a class.
 - Possible additional materials include an annotated bibliography, supplemental reading, a demonstration, etc.

The topics will be selected at the beginning of the term, and some of you will have an opportunity to complete the project part of the course early on.

You may select from the following topics or propose one of your own (subject to my approval). Those topics marked with * must be completed early in the term; only select those if you are able to give your presentation and prepare your paper before mid-February. Deadlines will depend on the topic you choose.

- *Non-classical crystal growth
- *Random walks in 2D as opposed to 3D
- *Pattern formation in thin films
- *Phase transitions in low-dimensional systems
- Creating perfect surfaces (also possible as an *early topic)
- NMR and surface/interface measurements
- A *NEW* scanning probe technique
- Creating sub-sub-micron features in nanofabrication
- Effects of reduced dimensionality in layered compounds/materials
- 2D systems in biology/nature (also possible as an *early topic)
- Large-scale (geological, atmospheric, oceanic, interstellar...) interfaces

Obviously one could write a book on any one of these topics. Your goal should be to focus on one aspect with enough depth but give enough background so that your classmates will understand.

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☒ New course(s): CHEM 4431
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

ADMINISTRATIVE AUTHORIZATION

By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Senate Summary Page for Courses

COURSE NUMBER AND TITLE

CHEM 4431 Heterocyclic Chemistry

ABBREVIATED TITLE

Heterocyclic Chemistry

RATIONALE

Many naturally occurring and synthetically developed compounds containing heterocyclic frameworks are known to display a variety of interesting and useful pharmaceutical and material properties. As such there is an ongoing pursuit for the development of new heterocycles and unique methods for creating them. This course aims to provide a fundamental understanding of the importance of heterocyclic compounds along with exploration into their designed synthesis.

This course exists already as a Special Topics Graduate course, CHEM 6490. The intent is to offer this course for undergraduate students as well, without requiring special sign-in permissions, such that it would meet the requirements of a 4000-level course for Honours students without using a course substitution.

CALENDAR CHANGES

4431 Heterocyclic Chemistry provides a fundamental understanding of the importance of heterocyclic compounds along with exploration into their designed synthesis. This course will include (but is not limited to): nomenclature, historically relevant molecules, new synthetic approaches, advanced organic mechanisms and compound reactivity/properties.
PR: CHEM 3411

CALENDAR ENTRY AFTER CHANGES

4431 Heterocyclic Chemistry provides a fundamental understanding of the importance of heterocyclic compounds along with exploration into their designed synthesis. This course will include (but is not limited to): nomenclature, historically relevant molecules, new synthetic approaches, advanced organic mechanisms and compound reactivity/properties.
PR: CHEM 3411

SECONDARY CALENDAR CHANGES

Nil

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	No
Business Administration	No
Education	Yes
Engineering and Applied Science	Yes
Human Kinetics and Recreation	Yes
Marine Institute	Yes
Medicine	Yes
Music	Yes
Nursing	Yes
Pharmacy	No
Science	
Biochemistry	No
Biology	Yes
Computer Science	No
Earth Sciences	No
Mathematics and Statistics	No
Ocean Sciences	No
Office of the Dean	No
Physics and Physical Oceanography	No
Psychology	No
Social Work	No
Library	No
Grenfell - Arts and Social Science	No
Grenfell - Science and the Environment	No
Grenfell - Fine Arts	No

RESOURCE IMPLICATIONS

Nil

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

Included following summary of consultations.

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Reynolds, Denise <gdreynolds@mun.ca>
To chemconsult@mun.ca <chemconsult@mun.ca>
Date 2020-09-12 11:09



Hi Mike,

Thank you for the opportunity to comment on these calendar change proposals. The Faculty of Education has no concerns with the proposed changes.

Regards,

Denise

Denise Reynolds | Manager, Academic Programs

Faculty of Education, Office of Academic Programs ED-2020

Memorial University of Newfoundland

St. John's, NL A1B 3X8

This communication is intended for the use of the recipient to whom it is addressed, and may contain confidential, personal, and/or privileged information. Please contact the sender by reply email immediately if you are not the intended recipient of this communication, and do not copy, distribute, or take action relying on it. Any communication received in error should be deleted or destroyed.

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Faculty of Education, Academic Programs Office
Sent: Tuesday, September 8, 2020 12:56 PM
To: Reynolds, Denise
Subject: FW: Calendar Changes - Chemistry (St. John's Campus)

Hi Denise,

These are for you. Meghan would review these to ensure they did not have any bearing on the Faculty of Education.

Thanks,

Katie

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

From: Department of Chemistry Consult [<mailto:chemconsult@mun.ca>]
Sent: September 4, 2020 5:08 PM
To: Faculty of Education, Academic Programs Office <muneduc@mun.ca>
Subject: Fwd: Calendar Changes - Chemistry (St. John's Campus)

Faculty of Education,

My apologies for sending this out to mcollett@mun.ca rather than muneduc@mun.ca. I will do my best to not make this mistake again.

please find attached 4 proposed calendar changes.

Best,

Mike

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

Subject: Calendar Changes - Chemistry (St. John's Campus)

Date: 2020-09-04 17:00

From: Department of Chemistry Consult <chemconsult@mun.ca>

To: Hss@mun.ca, rshannahan@mun.ca, mcollett@mun.ca, engrconsult@mun.ca, kjacobse@grenfell.mun.ca, ssedean@grenfell.mun.ca, thennessey@grenfell.mun.ca, lerohr@mun.ca, miugconsultations@mi.mun.ca, deanofmedicine@med.mun.ca, isutherland@mun.ca, deanNurse@mun.ca, pharminfo@mun.ca, deansci@mun.ca, adeanugradswk@mun.ca, univlib@mun.ca

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

Chem 1010 - there was a scenario where students who passed Chem 1050 could take/retake Chem 1010. This is not in the spirit of Chem 1010 and so the change would fix this.

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Engineering Consult <engrconsult@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Cc Jayde Edmunds <edmundsj@mun.ca>, Dennis Peters <dpeters@mun.ca>, Bruce Quinton <bruce.quinton@mun.ca>
Date 2020-09-16 16:58



Dear Dr. Katz,

Thank you for the opportunity to comment on the proposed changes to CHEM 1010, 4310, 4431 and special topics. At its meeting this afternoon, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science found no impact on Engineering programs from these proposed changes and we are happy to support them.

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

On 2020-09-04 17:00, Department of Chemistry Consult wrote:

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

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Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Rohr, Linda <lrohr@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-15 17:55



Hello,

No concerns from HKR for the proposed changes to Chemistry.

Linda

Linda E. Rohr PhD

Dean, School of Human Kinetics & Recreation

Memorial University

t: 709.864.8129 f: 709.864.7531 e: lrohr@mun.ca

PE 2027

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: Friday, September 4, 2020 at 3:30 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>, "Shannahan, Rachelle" <rshannahan@mun.ca>, "Collett, Meghan" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, Linda Rohr <lrohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "deanofmedicine@med.mun.ca" <deanofmedicine@med.mun.ca>, "Sutherland, Ian D" <isutherland@mun.ca>, DeanNurse <DeanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, Dean of Science <deansci@mun.ca>, adeanugradswk <adeanugradswk@mun.ca>, Library Correspondence <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

Dear All,

I have attached 4 calendar changes proposals from the Department of

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Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject RE: Calendar Changes - Chemistry (St. John's Campus)
From MIUG Consultations <MIUGconsultations@mi.mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-17 16:12



Hello,

Thank you for the opportunity to review and comment on the proposals for calendar changes to chemistry courses.

This will have no impact on Marine Institute programs and we are in support of the proposal.

Regards,
Bev

Bev Fleet
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0369
FAX: 709-778-0535
Bev.Fleet@mi.mun.ca

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Hss@mun.ca; rshannahan@mun.ca; mcollett@mun.ca; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; lerohr@mun.ca; MIUG Consultations <MIUGconsultations@mi.mun.ca>; deanofmedicine@med.mun.ca; isutherland@mun.ca; deanNurse@mun.ca; pharminfo@mun.ca; deansci@mun.ca; adeanugradswk@mun.ca; univlib@mun.ca
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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)
From <cvaridy@mun.ca>
To <chemconsult@mun.ca>
Date 2020-09-08 11:54



- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- ATT00001.htm (~243 B)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- ATT00002.htm (~243 B)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- ATT00003.htm (~243 B)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)
- ATT00004.htm (~202 B)

Dr. Katz

The Faculty of Medicine is supportive of the 4 calendar changes as outlined in your email and attachments.

Regards,

Dr. Cathy Vardy

Vice Dean of Medicine

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: September 4, 2020 at 4:59:39 PM NDT

To: "Hss@mun.ca" <Hss@mun.ca>, "rshannahan@mun.ca" <rshannahan@mun.ca>, "mcollett@mun.ca" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, "lerohr@mun.ca" <lerohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "Steele, Dr. Margaret: Dean of Medicine" <DeanofMedicine@med.mun.ca>, "isutherland@mun.ca" <isutherland@mun.ca>, "deanNurse@mun.ca" <deanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, "deansci@mun.ca" <deansci@mun.ca>, "adeanugradswk@mun.ca" <adeanugradswk@mun.ca>, "univlib@mun.ca" <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

10/5/2020

Memorial Webmail :: FW: Calendar Changes - Chemistry (St. John's Campus)

Paper 5.A.e (page 89
of 154)

Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Sutherland, Ian D <isutherland@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-07 16:06



The School of Music has no issue with the proposed changes.

Sincerely,

Ian Sutherland, PhD (Exon)
DEAN
School of Music
Memorial University
www.mun.ca/music

On 2020-09-04, 5:00 PM, "Department of Chemistry Consult" <chemconsult@mun.ca> wrote:

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)**From** Gaudine, Alice <agaudine@mun.ca>**To** <chemconsult@mun.ca>**Date** 2020-09-09 11:26

- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)

Hello,

I support these changes.

Alice Gaudine, PhD, RN
Dean and Professor, Faculty of Nursing
Memorial University of Newfoundland
St. John's, NL A1B 3V6
Tel: (709) 864-4549
E-mail: agaudine@mun.ca

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

From: Department of Chemistry Consult <chemconsult@mun.ca>

Sent: Friday, September 4, 2020 5:00 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>

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Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Michael Katz

From: Suzanne Dufour <sdufour@mun.ca>
Sent: September 18, 2020 12:18 PM
To: mkatz@mun.ca; Jody Burke
Subject: Fwd: FW: Calendar Changes - Chemistry (St. John's Campus)
Attachments: Calendar Change Proposal - CHEM 4310.pdf; Calendar Change Proposal - CHEM 4431.pdf; Calendar Change Proposal - Special Topics Courses.pdf; Calendar Change Proposal - CHEM 1010.pdf

Dear Michael,

The Biology Undergraduate Studies Committee has reviewed the 4 calendar change proposals from the Department of Chemistry. We are supportive of the proposed changes.

Best wishes,
Suzanne

--

Suzanne Dufour
Associate Professor and Deputy Head (Biology) Department of Biology Memorial University of Newfoundland St. John's,
NL A1B 3X9 Canada

Tel: (709) 864-8025
Fax: (709) 864-3018

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

Subject: FW: Calendar Changes - Chemistry (St. John's Campus)
Date: 2020-09-08 09:40
From: Dean of Science <deansci@mun.ca>
To: Amina Ahmed Mahmood <aamahmood@mun.ca>, "Todd, Amy M." <amy.todd@mun.ca>, BiocDHundergrad <biocdhundergrad@mun.ca>, "Hyde, Cathy" <cathy@mun.ca>, Chemistry <chemconsult@mun.ca>, Computer Science consultation <compsci@mun.ca>, Earth Sciences <eascugcon@mun.ca>, James Munroe <jmunroe@mun.ca>, Math & Stats <mathconsult@mun.ca>, Ocean Sciences <amercier@mun.ca>, "Goulding, Rick" <rgoulding@mun.ca>, Psychology consult <psychdeputyhead@mun.ca>, "Newhook, Rebecca" <rnewhook@mun.ca>, "Sharene Bungay" <sharene@mun.ca>, Suzanne Dufour <sdufour@mun.ca>, "Mackenzie, Theresa" <tmackenz@mun.ca>, "Fridgen, Travis" <tfridgen@mun.ca>

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>
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Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com



Chem. **XXXX**: Heterocyclic Chemistry

Winter 2021

Instructor Information

Instructor	Email	Office Location and Hours
Dr. Huck Grover	hgrover@mun.ca	C-4034, Chemistry
		Time, Days

General Information

Lecture Times:

3 lecture hours / week

Labs:

NO LABS are associated with this course

Tutorial:

OPTIONAL (~ 1 every 3 weeks)

Course Description

Many naturally occurring and synthetically developed compounds containing heterocyclic frameworks are known to display a variety of interesting and useful pharmaceutical and material properties. As such there is an ongoing pursuit for the development of new heterocycles and unique methods for creating them. This course aims to provide a fundamental understanding of the importance of heterocyclic compounds along with exploration into their designed synthesis. This course will include (but is not limited to): nomenclature, historically relevant molecules, new synthetic approaches, advanced organic mechanisms and compound reactivity/properties.

Course Material and Resources

Texts (no textbook is required for this course)

Recommend textbooks on this subject:

- Joule, J. A.; Mills, K. *Heterocyclic Chemistry*. Wiley 5th ed. 2010.
- Li, J. J. *Name Reactions in Heterocyclic Chemistry II*. Wiley. 2011.
- Li, J. J. *Contemporary Drug Synthesis*. Wiley. 2004.

Current Literature:

Much of the reading assigned in this class will come from the primary literature. Journals particularly relevant to the chemistry of heterocycles include:

- *Journal of Medicinal Chemistry*
- *Organic Process Research and Development*
- *Heterocycles*
- *Bioorganic and Medicinal Chemistry Letters*
- *Organic Letters*



Evaluation

Your performance in this course will be evaluated by the following scheme:

Participation	10%
Assignments (x2)	35%
Midterm (in class)	20%
Final Exam (during exam period)	35%
Total Evaluation	100%

Evaluation notes:

(1) Participation is based on active discussions during lecture and peer presentations, problem solving, and in class group work. (2) Assignments will tentatively include 1 presentation and 1 problem set. (3) The midterm will cover topics from general reactions – pyridines. (4) The final exam will be cumulative in content. (5) Full details of course evaluations will be discussed during class the first class.

Course Topics (Tentative)

- | | |
|----------------------------|-----------------------------|
| • General Reactions | • Carbazoles |
| • Pyrroles | • Benzothiophenes |
| • Furans | • Diazines |
| • Thiophenes | • 5-membered, 2 heteroatoms |
| • Indoles | • 3 or more heteroatoms |
| • Benzofurans | • Non-aromatic heterocycles |
| • Pyridines | • Bridged heterocycles |
| • Quinolines/Isoquinolines | • Unusual heterocycles |
| • Pyrones/Pyryliums | |

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

LIST OF CHANGES

Indicate the Calendar change(s) being proposed by checking and completing as appropriate:

- ☒ New course(s): Special Topics Blocks CHEM 4190-4199, 4290-4299, 4390-4399, 4490-4490, 4590-4599, 4690-4699
- ☒ Amended or deleted course(s): Deleted – CHEM 4150, 4202, 4250, 4350, 4450
- ☐ New program(s):
- ☐ Amended or deleted program(s):
- ☐ New, amended or deleted Glossary of Terms Used in the Calendar entries
- ☐ New, amended or deleted Admission/Readmission to the University (Undergraduate) regulations
- ☐ New, amended or deleted General Academic Regulations (Undergraduate)
- ☐ New, amended or deleted Faculty, School or Departmental regulations
- ☐ Other:

ADMINISTRATIVE AUTHORIZATION

By signing below, you are confirming that the attached Calendar changes have obtained all necessary Faculty/School approvals, and that the costs, if any, associated with these changes can be met from within the existing budget allocation or authorized new funding for the appropriate academic unit.

Signature of Dean/Vice-President: _____

Date: _____

Date of approval by Faculty/Academic Council: _____

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Senate Summary Page for Courses

COURSE NUMBER AND TITLE

Chemistry 4150 Special Topics in Analytical Chemistry
Chemistry 4202 Selected Topics in Main Group Chemistry
Chemistry 4250 Special Topics in Inorganic Chemistry
Chemistry 4350 Special Topics in Physical Chemistry
Chemistry 4450 Special Topics in Organic Chemistry

REVISED COURSE NUMBER AND TITLE

Chemistry 4190 – 4199 Special Topics in Analytical Chemistry
Chemistry 4290 – 4299 Special Topics in Inorganic Chemistry
Chemistry 4390 – 4399 Special Topics in Physical Chemistry
Chemistry 4490 – 4499 Special Topics in Organic Chemistry
Chemistry 4590 – 4599 Special Topics in Interdisciplinary Chemistry
Chemistry 4690 – 4699 Special Topics in Environmental Chemistry

ABBREVIATED COURSE TITLES

CHEM 4190 – 4199 Special Topic Analytical
CHEM 4290 – 4299 Special Topic Inorganic
CHEM 4390 – 4399 Special Topic Physical
CHEM 4490 – 4499 Special Topic Organic
CHEM 4590 – 4599 Spc Topic Interdisciplinary
CHEM 4690 – 4699 Special Topic Environmental

RATIONALE

The proposed changes are designed to ensure that future special topics courses offered by the Department of Chemistry are within the scope of University General Academic Regulation 6.4. The current structure consists of a single course number for special topics within each of the major disciplines of Chemistry; it is proposed that this be replaced with blocks of course numbers which may be used for special topics courses, such that each topic can be assigned its own unique course number. The “90” block of numbers within each discipline is proposed for this purpose, as those numbers have not been previously used. This change also involves the deletion of 4202 Selected Topics in Main Group Chemistry. For the summary of calendar changes that follows, all 4000-level Chemistry courses have been included.

CALENDAR CHANGES

~~**4150 Special Topics in Analytical Chemistry** is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in analytical chemistry.~~

~~PR: CHEM 3110~~

4151 Analytical Separations and Organic Mass Spectrometry examines advances in the traditional chromatographic techniques, the development of new analytical tools in separation science, the interfacing of mass spectrometers to chromatographic instruments, and other mass spectrometric techniques.

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 and Science 1808; CHEM 3110 (or the former CHEM 4100 or the former CHEM 4101 or the former CHEM 4110)

4152 Electroanalytical Techniques examines the principles and theory of dynamic electrochemistry, voltammetry, stripping analysis, electro-chemical sensors and detectors.

PR: CHEM 3110 (or the former CHEM 4100 or the former CHEM 4101 or the former CHEM 4110)

4156 Analytical Method Development and Sampling comprises the development and critical evaluation of analytical methods and sampling protocols for analyses in complex matrices, including those relevant to environmental, medical, food, and forensic sciences.

PR: CHEM 3110

4190 – 4199 Special Topics in Analytical Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to analytical chemistry.

PR: to be determined at the time of offer

4201 Coordination Chemistry in Biological Molecules - Structural, Mechanistic and Magnetic Studies examines the role of certain transition elements e.g. iron, copper, cobalt, and zinc, in proteins and enzymes will be discussed in terms of structural features, the natural ligands, magnetic properties, mechanisms, etc., and reinforced with examples of 'model compounds'. Magnetic theory, in particular for polynuclear transition metal complexes, will also be developed.

PR: CHEM 3211

~~**4202 Selected Topics in Main Group Chemistry** – inactive course.~~

4203 Organometallic Chemistry is principles and applications of organometallic chemistry with emphasis on compounds of the transition metals, lanthanides and actinides. A study of synthetic methods, structure, bonding, reactions and applications of these concepts to organic synthesis and to catalysis.

PR: CHEM 3211

4204 Inorganic Reaction Mechanisms and Catalysis is a survey of inorganic and organometallic reactions, their mechanisms and kinetic characteristics. In addition,

stereochemical non-rigidity, reactions of coordinated ligands and homogeneous catalysis are discussed.

PR: CHEM 3211

4205 Photochemistry of Transition Metal Complexes is an introduction to the theory of electronic excited states in transition metal complexes. Applications to artificial photosynthesis, photodynamic therapy, molecular photovoltaics and molecular electronics.

CO: CHEM 3211 and CHEM 2302

PR: CHEM 3211 and the former CHEM 3301 or CHEM 2302

4206 Green Chemistry examines the benefits and limitations of new methods aimed at reducing the environmental impact of chemical processes including waste prevention, hazard/risk reduction, catalysts, renewable feedstocks and alternative solvents.

PR: CHEM 2401 and CHEM 3211

~~**4250 Special Topics in Inorganic Chemistry** is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in inorganic chemistry.~~

~~PR: CHEM 3210 or 3211~~

4290 – 4299 Special Topics in Inorganic Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to inorganic chemistry.

PR: to be determined at the time of offer

4304 Advanced Quantum Chemistry examines exact solutions to the Schrodinger equation, introduction to approximate methods, modern methods (wavefunction and density functional theories), spectroscopy, and applications of computational chemistry.

CR: the former CHEM 4300

PR: CHEM 2302 (or the former CHEM 3301) and Mathematics 2260. Due to the requirement of Mathematics 2260, students wishing to take this course should plan ahead.

4305 Advanced Statistical Thermodynamics examines intermolecular forces, the properties of liquids, the solvation of molecules and ions, and the structure and dynamics of macromolecules within the framework of statistical thermodynamics.

CR: the former CHEM 4303

PR: CHEM 3303 or the former CHEM 3301

~~**4350 Special Topics in Physical Chemistry** is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in physical chemistry.~~

~~PR: CHEM 3303~~

4390 – 4399 Special Topics in Physical Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to physical chemistry.

PR: to be determined at the time of offer

4410 Bio-organic Chemistry is a study of the major classes of biomolecules, their structure, function, and their chemistry. The chemistry and the biochemical reactions of carbohydrates, amino acids, peptides, lipids, coenzymes, nucleic acids, polyketides, and the shikimic acid

pathway. An introduction to natural products and secondary metabolites. Synthesis of peptides, nucleosides and polynucleotides. Biosynthesis of fatty acids, terpenes, polyketides, shikimates, peptides and polynucleotides.

CR: the former CHEM 3410

PR: CHEM 2401

4411 Topics in Medicinal Chemistry - inactive course.

4420 Physical Organic Chemistry is an introduction to the quantitative and qualitative theories of reactions and reactivity and their application to organic reaction mechanisms and to mechanism elucidation.

CR: the former CHEM 4400 and the former CHEM 4401

PR: CHEM 2302 or the former CHEM 3301, and CHEM 3411 or the former CHEM 3401

4430 Synthetic Organic Chemistry II examines modern synthetic methods with particular attention placed on the synthesis of enantiomerically enriched compounds and newer methods for the formation of carbon-carbon bonds. Designing syntheses of complex organic molecules.

CR: the former CHEM 4410

PR: the former CHEM 3401 or 3411. CHEM 4420 is strongly recommended.

~~**4450 Special Topics in Organic Chemistry** is a course for senior level undergraduate students and covers one or a number of specialized topics of current interest in organic chemistry.~~

~~PR: CHEM 3411~~

4490 – 4499 Special Topics in Organic Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to organic chemistry.

PR: to be determined at the time of offer

4500 Advanced Nuclear Magnetic Resonance Spectroscopy examines advances in modern and traditional NMR techniques, the principles and applications of solution and solid-state NMR spectroscopy and micro imaging.

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: CHEM 2302 and 2401

4590 – 4599 Special Topics in Interdisciplinary Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to interdisciplinary chemistry.

PR: to be determined at the time of offer

4620 Environmental Chemistry applies fundamental principles of chemistry to reactions and processes in the environment. Reaction mechanisms, physical processes, and application of analytical techniques to environmental chemistry will be discussed. The course will cover the chemistry underpinning current environmental problems such as long-range transport of persistent pollutants, photochemical smog, and climate change.

CO: CHEM 3110

CR: Environmental Science 4249

PR: CHEM 2400, CHEM 2301, CHEM 3110

4690 – 4699 Special Topics in Environmental Chemistry are advanced courses for senior undergraduate students that cover one or several subjects of current interest related to environmental chemistry.

PR: to be determined at the time of offer

4701 Principles of Pharmaceutical Chemistry will provide the necessary foundation of knowledge to enable students to understand the principles of drug discovery, the main pharmacokinetics properties of drugs, the relationships between the chemical structure of drugs and their biological actions, their toxicity and side-effects, and the kinetics of inhibitory mechanisms and the metabolic reactions of drugs. It will also provide an overview of pharmaceutical regulatory affairs.

PR: Biochemistry 3105 or CHEM 3411 or permission of the instructor

490A/B Honours Research in Chemistry is available only to students in Chemistry Honours or Chemistry Joint Honours Programs. These courses are two single-semester, linked courses based on independent research carried out under the supervision of a faculty member in the Department of Chemistry. Research undertaken for these courses must have a clear disconnect from any research previously conducted. These courses are mandatory for Honours Chemistry students. A grade of pass in 490A is required to proceed to 490B. A written thesis is to be handed in by the end of the course. 490A and 490B are to be taken in the Fall and Winter semesters in the same academic year.

CH: 6

PR: admission to an Honours Chemistry Program or Chemistry Joint Honours Program and honours standing, or for students not in an Honours program or without honours standing, by permission of the Head of Department (or delegate) and a research supervisor.

CALENDAR ENTRY AFTER CHANGES

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PR: CHEM 3110

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Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	No
Business Administration	No
Education	Yes
Engineering and Applied Science	Yes
Human Kinetics and Recreation	Yes
Marine Institute	Yes
Medicine	Yes
Music	Yes
Nursing	Yes
Pharmacy	No
Science	
Biochemistry	No
Biology	Yes
Computer Science	No
Earth Sciences	No
Mathematics and Statistics	No
Ocean Sciences	No
Office of the Dean	No
Physics and Physical Oceanography	No
Psychology	No
Social Work	No
Library	No
Grenfell - Arts and Social Science	No
Grenfell - Science and the Environment	No
Grenfell - Fine Arts	No

RESOURCE IMPLICATIONS

Nil

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Reynolds, Denise <gdreynolds@mun.ca>
To chemconsult@mun.ca <chemconsult@mun.ca>
Date 2020-09-12 11:09



Hi Mike,

Thank you for the opportunity to comment on these calendar change proposals. The Faculty of Education has no concerns with the proposed changes.

Regards,

Denise

Denise Reynolds | Manager, Academic Programs

Faculty of Education, Office of Academic Programs ED-2020

Memorial University of Newfoundland

St. John's, NL A1B 3X8

This communication is intended for the use of the recipient to whom it is addressed, and may contain confidential, personal, and/or privileged information. Please contact the sender by reply email immediately if you are not the intended recipient of this communication, and do not copy, distribute, or take action relying on it. Any communication received in error should be deleted or destroyed.

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Faculty of Education, Academic Programs Office
Sent: Tuesday, September 8, 2020 12:56 PM
To: Reynolds, Denise
Subject: FW: Calendar Changes - Chemistry (St. John's Campus)

Hi Denise,

These are for you. Meghan would review these to ensure they did not have any bearing on the Faculty of Education.

Thanks,

Katie

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

From: Department of Chemistry Consult [<mailto:chemconsult@mun.ca>]
Sent: September 4, 2020 5:08 PM
To: Faculty of Education, Academic Programs Office <muneduc@mun.ca>
Subject: Fwd: Calendar Changes - Chemistry (St. John's Campus)

Faculty of Education,

My apologies for sending this out to mcollett@mun.ca rather than muneduc@mun.ca. I will do my best to not make this mistake again.

please find attached 4 proposed calendar changes.

Best,

Mike

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

Subject: Calendar Changes - Chemistry (St. John's Campus)

Date: 2020-09-04 17:00

From: Department of Chemistry Consult <chemconsult@mun.ca>

To: Hss@mun.ca, rshannahan@mun.ca, mcollett@mun.ca, engrconsult@mun.ca, kjacobse@grenfell.mun.ca, ssedean@grenfell.mun.ca, thennessey@grenfell.mun.ca, lerohr@mun.ca, miugconsultations@mi.mun.ca, deanofmedicine@med.mun.ca, isutherland@mun.ca, deanNurse@mun.ca, pharminfo@mun.ca, deansci@mun.ca, adeanugradswk@mun.ca, univlib@mun.ca

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

Briefly:

Chem 1010 - there was a scenario where students who passed Chem 1050 could take/retake Chem 1010. This is not in the spirit of Chem 1010 and so the change would fix this.

Chem 4310/4431 - These are two courses that are offered at the 6000 level. Undergraduate students were able to take these courses as a special topics course in the past with approval from the instructor.

This change would make the course an official undergraduate course and thus would not require approval from the instructor.

Special topics courses - Currently, special topics in chemistry at the undergraduate level had one course number per division/discipline. If two faculty offered two different special topics courses in the same division/discipline, then a student would not be able to take both. The proposal seeks to create a block of special topics courses in each division/discipline in order to ensure students are able to get the most out of their undergraduate (and graduate) programs moving forward.

Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Engineering Consult <engrconsult@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Cc Jayde Edmunds <edmundsj@mun.ca>, Dennis Peters <dpeters@mun.ca>, Bruce Quinton <bruce.quinton@mun.ca>
Date 2020-09-16 16:58



Dear Dr. Katz,

Thank you for the opportunity to comment on the proposed changes to CHEM 1010, 4310, 4431 and special topics. At its meeting this afternoon, the Committee on Undergraduate Studies of the Faculty of Engineering and Applied Science found no impact on Engineering programs from these proposed changes and we are happy to support them.

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

On 2020-09-04 17:00, Department of Chemistry Consult wrote:

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Best,

Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Rohr, Linda <lrohr@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-15 17:55



Hello,

No concerns from HKR for the proposed changes to Chemistry.

Linda

Linda E. Rohr PhD

Dean, School of Human Kinetics & Recreation

Memorial University

t: 709.864.8129 f: 709.864.7531 e: lrohr@mun.ca

PE 2027

We acknowledge that the lands on which Memorial University's campuses are situated are in the traditional territories of diverse Indigenous groups, and we acknowledge with respect the diverse histories and cultures of the Beothuk, Mi'kmaq, Innu, and Inuit of this province.

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: Friday, September 4, 2020 at 3:30 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>, "Shannahan, Rachelle" <rshannahan@mun.ca>, "Collett, Meghan" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, Linda Rohr <lrohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "deanofmedicine@med.mun.ca" <deanofmedicine@med.mun.ca>, "Sutherland, Ian D" <isutherland@mun.ca>, DeanNurse <DeanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, Dean of Science <deansci@mun.ca>, adeanugradswk <adeanugradswk@mun.ca>, Library Correspondence <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

Dear All,

I have attached 4 calendar changes proposals from the Department of

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Dr. Michael J. Katz

Assistant Professor of Chemistry

Deputy Head of Undergraduate Studies

mkatz@mun.ca

709-864-8745

www.KatzResearchGroup.com

Subject RE: Calendar Changes - Chemistry (St. John's Campus)
From MIUG Consultations <MIUGconsultations@mi.mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-17 16:12



Hello,

Thank you for the opportunity to review and comment on the proposals for calendar changes to chemistry courses.

This will have no impact on Marine Institute programs and we are in support of the proposal.

Regards,
Bev

Bev Fleet
Chair, Undergraduate Studies Committee
Marine Institute, Memorial University
TEL: 709-778-0369
FAX: 709-778-0535
Bev.Fleet@mi.mun.ca

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Hss@mun.ca; rshannahan@mun.ca; mcollett@mun.ca; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; lerohr@mun.ca; MIUG Consultations <MIUGconsultations@mi.mun.ca>; deanofmedicine@med.mun.ca; isutherland@mun.ca; deanNurse@mun.ca; pharminfo@mun.ca; deansci@mun.ca; adeanugradswk@mun.ca; univlib@mun.ca
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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)
From <cvaridy@mun.ca>
To <chemconsult@mun.ca>
Date 2020-09-08 11:54



- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- ATT00001.htm (~243 B)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- ATT00002.htm (~243 B)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- ATT00003.htm (~243 B)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)
- ATT00004.htm (~202 B)

Dr. Katz

The Faculty of Medicine is supportive of the 4 calendar changes as outlined in your email and attachments.

Regards,

Dr. Cathy Vardy

Vice Dean of Medicine

From: Department of Chemistry Consult <chemconsult@mun.ca>

Date: September 4, 2020 at 4:59:39 PM NDT

To: "Hss@mun.ca" <Hss@mun.ca>, "rshannahan@mun.ca" <rshannahan@mun.ca>, "mcollett@mun.ca" <mcollett@mun.ca>, "engrconsult@mun.ca" <engrconsult@mun.ca>, "kjacobse@grenfell.mun.ca" <kjacobse@grenfell.mun.ca>, "ssedean@grenfell.mun.ca" <ssedean@grenfell.mun.ca>, "thennessey@grenfell.mun.ca" <thennessey@grenfell.mun.ca>, "lerohr@mun.ca" <lerohr@mun.ca>, "miugconsultations@mi.mun.ca" <miugconsultations@mi.mun.ca>, "Steele, Dr. Margaret: Dean of Medicine" <DeanofMedicine@med.mun.ca>, "isutherland@mun.ca" <isutherland@mun.ca>, "deanNurse@mun.ca" <deanNurse@mun.ca>, "pharminfo@mun.ca" <pharminfo@mun.ca>, "deansci@mun.ca" <deansci@mun.ca>, "adeanugradswk@mun.ca" <adeanugradswk@mun.ca>, "univlib@mun.ca" <univlib@mun.ca>

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Chem 1010 - there was a scenario where students who passed Chem 1050 could take/retake Chem 1010. This is not in the spirit of Chem 1010 and so the change would fix this.

Chem 4310/4431 - These are two courses that are offered at the 6000 level. Undergraduate students were able to take these courses as a special topics course in the past with approval from the instructor. This change would make the course an official undergraduate course and thus would not require approval from the instructor.

Special topics courses - Currently, special topics in chemistry at the undergraduate level had one course number per division/discipline. If two faculty offered two different special topics courses in the same division/discipline, then a student would not be able to take both. The proposal seeks to create a block of special topics courses in each division/discipline in order to ensure students are able to get the most out of their undergraduate (and graduate) programs moving forward.

Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz

10/5/2020

Memorial Webmail :: FW: Calendar Changes - Chemistry (St. John's Campus)

Paper 5.A.f (page 113
of 154)

Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject Re: Calendar Changes - Chemistry (St. John's Campus)
From Sutherland, Ian D <isutherland@mun.ca>
To Department of Chemistry Consult <chemconsult@mun.ca>
Date 2020-09-07 16:06



The School of Music has no issue with the proposed changes.

Sincerely,

Ian Sutherland, PhD (Exon)
DEAN
School of Music
Memorial University
www.mun.ca/music

On 2020-09-04, 5:00 PM, "Department of Chemistry Consult" <chemconsult@mun.ca> wrote:

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkatz@mun.ca
709-864-8745
www.KatzResearchGroup.com

Subject FW: Calendar Changes - Chemistry (St. John's Campus)**From** Gaudine, Alice <agaudine@mun.ca>**To** <chemconsult@mun.ca>**Date** 2020-09-09 11:26

- Calendar Change Proposal - CHEM 4310.pdf (~150 KB)
- Calendar Change Proposal - CHEM 4431.pdf (~645 KB)
- Calendar Change Proposal - Special Topics Courses.pdf (~230 KB)
- Calendar Change Proposal - CHEM 1010.pdf (~10 KB)

Hello,

I support these changes.

Alice Gaudine, PhD, RN
Dean and Professor, Faculty of Nursing
Memorial University of Newfoundland
St. John's, NL A1B 3V6
Tel: (709) 864-4549
E-mail: agaudine@mun.ca

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

From: Department of Chemistry Consult <chemconsult@mun.ca>

Sent: Friday, September 4, 2020 5:00 PM

To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>

Subject: Calendar Changes - Chemistry (St. John's Campus)

Dear All,

I have attached 4 calendar changes proposals from the Department of Chemistry.

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Dr. Michael J. Katz
Assistant Professor of Chemistry
Deputy Head of Undergraduate Studies
mkat@mun.ca
709-864-8745
www.KatzResearchGroup.com

Michael Katz

From: Suzanne Dufour <sdufour@mun.ca>
Sent: September 18, 2020 12:18 PM
To: mkatz@mun.ca; Jody Burke
Subject: Fwd: FW: Calendar Changes - Chemistry (St. John's Campus)
Attachments: Calendar Change Proposal - CHEM 4310.pdf; Calendar Change Proposal - CHEM 4431.pdf; Calendar Change Proposal - Special Topics Courses.pdf; Calendar Change Proposal - CHEM 1010.pdf

Dear Michael,

The Biology Undergraduate Studies Committee has reviewed the 4 calendar change proposals from the Department of Chemistry. We are supportive of the proposed changes.

Best wishes,
Suzanne

--

Suzanne Dufour
Associate Professor and Deputy Head (Biology) Department of Biology Memorial University of Newfoundland St. John's,
NL A1B 3X9 Canada

Tel:(709)864-8025
Fax: (709)864-3018

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

Subject: FW: Calendar Changes - Chemistry (St. John's Campus)
Date: 2020-09-08 09:40
From: Dean of Science <deansci@mun.ca>
To: Amina Ahmed Mahmood <aamahmood@mun.ca>, "Todd, Amy M." <amy.todd@mun.ca>, BiocDHundergrad <biocdhundergrad@mun.ca>, "Hyde, Cathy" <cathy@mun.ca>, Chemistry <chemconsult@mun.ca>, Computer Science consultation <compsci@mun.ca>, Earth Sciences <eascugcon@mun.ca>, James Munroe <jmunroe@mun.ca>, Math & Stats <mathconsult@mun.ca>, Ocean Sciences <amercier@mun.ca>, "Goulding, Rick" <rgoulding@mun.ca>, Psychology consult <psychdeputyhead@mun.ca>, "Newhook, Rebecca" <rnewhook@mun.ca>, "Sharene Bungay" <sharene@mun.ca>, Suzanne Dufour <sdufour@mun.ca>, "Mackenzie, Theresa" <tmackenz@mun.ca>, "Fridgen, Travis" <tfridgen@mun.ca>

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

From: Department of Chemistry Consult [mailto:chemconsult@mun.ca]
Sent: Friday, September 4, 2020 5:00 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Shannahan, Rachelle <rshannahan@mun.ca>; Collett, Meghan <mcollett@mun.ca>; engrconsult@mun.ca; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; thennessey@grenfell.mun.ca; Rohr, Linda <lerohr@mun.ca>; miugconsultations@mi.mun.ca; deanofmedicine@med.mun.ca; Sutherland, Ian D <isutherland@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Library Correspondence <univlib@mun.ca>
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Thank you to all the departments for taking the time to consider these changes.

Best,

Dr. Michael J. Katz
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Deputy Head of Undergraduate Studies
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School of Graduate Studies

Request for Approval of a Graduate Course

Paper 5.B.a (page 118 of 154)

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version: <http://get.adobe.com/reader>. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Fill in the required data and save the file; (5) Submit the completed form to:

[School of Graduate Studies](#); Memorial University of Newfoundland; IIC-2012 (Bruneau Centre for Research and Innovation); St. John's, NL A1C 5S7 Canada Fax: 709.864.4702 eMail: sgs@mun.ca

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

Course No.: Biology 6052

Course Title: Plant Pathology

I. To be completed for all requests:

A. Course Type: ☒ Lecture course ☐ Lecture course with laboratory
☐ Laboratory course ☐ Undergraduate course¹
☐ Directed readings ☐ Other (please specify)

B. Can this course be offered by existing faculty? ☒ Yes ☐ No

C. Will this course require new funding (including payment of instructor, labs, equipment, etc.)? ☐ Yes ☒ No
If yes, please specify:

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

E. Credit hours for this course: 3

F. Course description (reading list required):

This course will provide graduate students with an introduction to the basic concepts used in the study of plant diseases. Topics that will be covered include the different causes and types of plant diseases, the mechanisms of plant disease development, and disease management practices.

G. Method of evaluation:	Percentage	
	Written	Oral
Class tests	30%	
Assignments	20%	30%
Other (specify):		
Final examination:		20%
Total 100%		

¹ Must specify the additional work at the graduate level

II. To be completed for special/selected topics course requests only

For special/selected topics courses, there is no evidence of:

Instructor's initials

- | | |
|--|-------|
| 1. duplication of thesis work | _____ |
| 2. double credit | _____ |
| 3. work that is a faculty research product | _____ |
| 4. overlap with existing courses | _____ |

Recommended for offering in the Fall Winter Spring 20 ____

Length of session if less than a semester:

III. This course proposal has been prepared in accordance with General Regulations governing the School of Graduate Studies

Dawn Bignell

Digitally signed by Dawn Bignell
DN: cn=Dawn Bignell, o=Memorial University, ou,
email=dbignell@mun.ca, c=CA
Date: 2020.08.11 15:16:04 -02'30'

Course instructor

August 11, 2020

Date

Dr. Tom Chapman (Email of Approval attached)

Approval of the head of the academic unit

Sept. 11, 2020

Date

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

Secretary, Faculty/School/Council

Date

BIOLOGY 6052 – Plant Pathology

Instructor:

Dawn Bignell, Ph.D.

Associate Professor of Microbiology

Department of Biology

Office: SN-1011, Science Bldg.

Research lab: SN-1006, Science Bldg.

Phone: 864-4573

Course Description: This course will provide graduate students with an introduction to the basic concepts used in the study of plant diseases. Topics that will be covered include the different causes and types of plant diseases, the mechanisms of plant disease development, and disease management practices.

Prerequisites: Biology 3050 or an equivalent course, or consent from the instructor. Credit cannot be obtained if already received for Biology 4052.

Resources: There is no required textbook for the course. Topics that will be discussed in lectures are covered in peer-reviewed publications as well as in the following textbooks:

Schumann, GL and D'Arcy, CJ. 2009. Essential Plant Pathology, 2nd edition, APS Press

Agrios, GN. 2005. Plant Pathology, 5th edition, Elsevier Academic Press

Lecture Topics†

1. Introduction to plant pathology
 - a. What is plant pathology?
 - b. History of plant diseases and their impacts on society
 - c. General terminology and definitions
2. Causes of plant diseases
 - a. Abiotic causes
 - b. Biotic causes
 - i. Fungi and fungal-like organisms
 - ii. Bacteria
 - iii. Nematodes
 - iv. Viruses and viroids
 - v. Parasitic flowering plants
 - c. Basic procedures in the diagnosis of plant diseases
3. Types of plant diseases
 - a. Rusts and smuts
 - b. Vascular diseases
 - c. Diseases of aerial plant parts
 - d. Soilborne diseases
 - e. Wood decay and post-harvest diseases
4. Interactions between plants and pathogens
 - a. Host range of pathogens
 - b. Development of disease in plants: the disease triangle

- c. Stages of disease development: the disease cycle
- d. How pathogens attack plants
- e. How plants defend themselves against pathogens
- 5. Plant disease epidemiology
 - a. Elements of an epidemic
 - b. Host factors influencing the development of epidemics
 - c. Pathogen factors influencing the development of epidemics
 - d. Environmental factors influencing the development of epidemics
 - e. New tools in epidemiology
- 6. Plant disease management: principles and practices
 - a. Control methods that exclude the pathogen from the host
 - b. Control methods that eradicate or reduce pathogen inoculum
 - c. Direct protection of plant by chemicals
 - d. Direct protection of plants by biological controls

† The lectures for the course will be taught concurrently with Biology 4052 (Fundamentals of Plant Pathology), but the evaluations and grading structures will be different to reflect the higher expectations for graduate level study.

Evaluation:

Midterm Exams (2, written)	30%
Final Exam (oral)*	20%
Class Discussion Leader*	10%
Written Paper*	20%
Lecture Presentations (2)*	20%

* Evaluations that differ from Biology 4052

Request for Approval of a Graduate Course

Adobe Reader, minimum version 8, is required to complete this form. Download the latest version: <http://get.adobe.com/reader>. (1) Save the form by clicking on the diskette icon on the upper left side of the screen; (2) Ensure that you are saving the file in PDF format; (3) Specify where you would like to save the file, e.g. Desktop; (4) Review the [How to create and insert a digital signature](#) webpage for step by step instructions; (5) Fill in the required data and save the file; (6) Send the completed form by email to: sgs@mun.ca.

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

Course No.: MATH 6215

Course Title: Deep learning and Deep reinforcement learning

I. To be completed for all requests:

A. Course Type: ☐ Lecture course ☒ Lecture course with laboratory
☐ Laboratory course ☐ Undergraduate course¹
☐ Directed readings ☐ Other (please specify)

B. Can this course be offered by existing faculty? ☒ Yes ☐ No

C. Will this course require new funding (including payment of instructor, labs, equipment, etc.)? ☐ Yes ☒ No
 If yes, please specify:

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

E. Credit hours for this course: 3 hours

F. Course description (reading list required):
 See the attached description

G. Method of evaluation:	Percentage	
	Written	Oral
Class tests	30%	
Assignments	15%	
Other (specify):	15%	
Final examination:	40%	
Total	100	

¹ Must specify the additional work at the graduate level

II. To be completed for special/selected topics course requests only

For special/selected topics courses, there is no evidence of:

Instructor's initials

1. duplication of thesis work

AB

2. double credit

AB

3. work that is a faculty research product

AB

4. overlap with existing courses

AB

Recommended for offering in the Fall Winter Spring 20 21

Length of session if less than a semester:

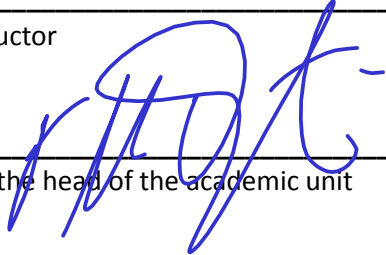
III. This course proposal has been prepared in accordance with General Regulations governing the School of Graduate Studies



Course instructor

October 14, 2020

Date

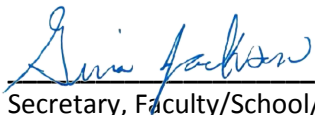


Approval of the head of the academic unit

Oct 14, 2020

Date

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



Secretary, Faculty/School/Council

October 14, 2020

Date

MATH 6215: Deep learning and Deep reinforcement learning

Recent years have seen an explosion of interest in the fields of deep learning and artificial intelligence. Essentially all jobs in industry for applied mathematicians today require knowledge of data science, machine learning, deep learning and/or artificial intelligence. To prepare our students for a career in this area, the proposed course aims to provide a mathematically solid introduction to this modern area of applied mathematics/computational science.

Objectives: This course will provide a quick overview of classical methods of machine learning before delving into the recent developments in the areas of deep learning, reinforcement learning, deep reinforcement learning and artificial intelligence.

Prerequisites: Undergraduate linear algebra at the level of MATH 2051, numerical analysis at the level of MATH 3132, multivariate calculus at the level of MATH 2000 as well as elementary probability. Elementary experience with `Python`.

Tentative syllabus:

1. Classical machine learning
 - (a) Least squares regression
 - (b) Logistic regression
 - (c) Autoencoders and matrix factorization methods
2. Deep neural networks and deep learning
 - (a) Multilayer perceptrons
 - (b) Gradient descent, optimization, backpropagation algorithms
 - (c) Convolutional neural networks
 - (d) Recurrent neural networks
 - (e) Stability of neural networks
 - (f) Applications to computer vision, natural language processing, time series analysis
3. Advanced topics in deep learning
 - (a) Variational autoencoders
 - (b) Generative adversarial networks and generative methods
 - (c) Adversarial examples
 - (d) Neural ordinary differential equations
4. Reinforcement learning
 - (a) ε -greedy algorithms
 - (b) Finite Markov decision processes
 - (c) Dynamic programming and Monte Carlo methods
 - (d) Temporal-difference learning
5. Deep reinforcement learning and artificial intelligence
 - (a) Function approximations for reinforcement learning
 - (b) Policy gradient methods
 - (c) Case studies (ATARI games, AlphaGo, autonomous vehicles)

(d) Ethical questions and AI safety

Literature: The following books are either publicly available or available through our library.

- C.C. Aggarwal. *Neural Networks and Deep Learning*, Springer, 2018. (available as ebook in our library)
- I. Goodfellow, Y. Bengio and A. Courville. *Deep learning*, MIT press, 2016. (available online)
- R.S. Sutton and A.G. Barto. *Reinforcement learning*, MIT press, 2018 (available online)

Evaluation: The suggested grading scheme for this course will consist of:

- *Assignments:* 15%. One assignment every 2–3 weeks, which includes both analytical and numerical components.
- *Final project:* 15%. Each student will prepare an individual final project consisting of a written report and an oral presentation, to be given on the last day of class, on a topic relevant to the course.
- *Midterm:* 30%. The midterm exam will be a one hour written exam.
- *Final exam:* 40%. The final exam will be a three hour exam, two hours of which will be a written exam and one hour will be a numerical lab component.

SGS General Regulation 4.8 and 4.10 governing 'Pass with Distinction'

The School of Graduate Studies is requesting the deletion of reference to 'Pass with Distinction' in sections detailing theses and comprehensive examinations. Units affected by this change have been informed. The criteria for the distinction are unclear and it is evident that they are applied inconsistently across departments.

SGS did a fair amount of consultation on the proposed change, and it was to go to Council in April, but was put on hold because of the pandemic. Feedback was received and in checking other universities across Canada, only the University of Winnipeg had the 'Pass with Distinction' option, and that was only available if no changes were required to the examination. The Pass with Distinction honour is uneven amongst units and a majority were in favour of having this distinction removed.

SGS also proposed change to the PASS (subject to conditions) category governing the evaluation of theses, as this is not often used. It is confusing and in particular, examiners believe this notation goes on a student's transcript.

4.8 Comprehensive Examinations

4.8.1 Master's Comprehensive Examination

1. The composition of the Comprehensive Examination Committee is specified in the Degree and Departmental regulations, and the Committee is appointed by the Dean. The Dean of Graduate Studies or delegate may exercise the right to attend. All members of the Committee including the Chairperson, but excluding the Dean of Graduate Studies or delegate, shall be voting members.
2. In this examination the student must demonstrate an advanced knowledge of the academic discipline as defined by the academic unit in which they are students. Therefore, in order to be eligible to sit the examination, all course requirements must normally be completed.
3. In cases where there are multiple parts to a comprehensive exam, including written and oral parts, a student must satisfy all parts of the examination to obtain a pass. The requirements to advance to a later part of the examination are specified in the Degree and Departmental regulations or by the appropriate academic unit.
4. Members of the Comprehensive Examination Committee shall decide the results of the comprehensive examination as indicated in a. ~~d~~ c. below:
 - a. ~~The category of 'pass with distinction' will be awarded to students who demonstrate superior knowledge of their area(s). This category requires unanimous support of the Comprehensive Examination Committee.~~
 - ~~b.~~ a. The category of 'pass' will be awarded to students who demonstrate an acceptable knowledge of their area(s) and requires a simple majority vote.
 - e. b. The category of 're-examination' selects those students with an understanding of their research area that lacks sufficient depth and scope as indicated by a simple majority of the Comprehensive Examination Committee. Only one such re-examination is possible ~~and students in this category are not eligible for the award of 'pass with distinction'.~~ If a re-examination is to be held, it must be conducted not less than one month and not more than six months after the first examination. The decision of the voting members of the Committee following this re-examination can only be 'pass' or 'fail' decided by simple

majority. Failure will lead to immediate termination of the student's program. There is no option for further re-examination.

- ~~d-~~ c. Students awarded a 'fail' are deemed, by unanimous vote of the Comprehensive Examination Committee, to be unable to demonstrate an adequate understanding of their area(s). The student's program is terminated. A simple majority vote will default to the award of 're-examination'.
- 5. The Chairperson of the Comprehensive Examination Committee shall report to the Head of the academic unit who shall report to the Dean. The result of the comprehensive examination(s) shall be reported to the student by the Dean.

4.8.2 Ph.D. and Psy.D. Comprehensive Examination

1. The student shall submit to a comprehensive examination, which may be written or oral or both as determined by the academic unit. Students shall normally take the examination no later than the end of the seventh semester in the doctoral program. Unless an extension is approved by the Dean of Graduate Studies, failure to take the examination at this time will result in the termination of the student's program.
2. This examination, whether written or oral, shall be conducted by a Committee appointed by the Dean of Graduate Studies on the recommendation of the academic unit. It shall consist of the Head of the academic unit (or delegate) who shall be the Chairperson, the student's Supervisor [or, where a Supervisor has not yet been appointed, the Graduate Officer or Chair of the Graduate Studies (or equivalent) Committee], and at least three other members, the total voting members to be an odd number. For students in the Ph.D. program, all members of the Committee including the Chairperson, but excluding the Dean of Graduate Studies or delegate, shall be voting members. For students in the Psy.D. program, the voting members of the committee shall be clinical psychologists, but will not include Chairperson, the Supervisor, or the Associate Vice-President (Academic) and Dean, Graduate Studies.
3. In this examination, the student must demonstrate a mastery of those subjects appropriate to the student's area(s), as defined by the academic unit in which the candidate is a student. Therefore, in order to be eligible to sit the examination, all course requirements must normally be completed. The area(s) upon which the student will be examined should be made known to the student no later than three months prior to the examination. The student must further be able to relate the specialization of their research to the larger context of these areas.
4. In cases where there are multiple parts to a comprehensive exam, including written and oral parts, a student must satisfy all parts of the examination to obtain a pass. The requirements to advance to a later part of the examination are specified in the Degree and Departmental regulations or by the appropriate academic unit.
5. Members of the Comprehensive Examination Committee shall decide the results of the comprehensive examination as indicated in a-~~d~~ c. below:
 - ~~a-~~ The category of 'pass with distinction' will be awarded to students who demonstrate superior knowledge of their area(s). This category requires unanimous support of the Comprehensive Examination Committee.
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 - ~~c-~~ b. The category of 're-examination' selects those students with an understanding of their research area(s) that lacks sufficient depth and scope as indicated by a simple majority of the Comprehensive Examination Committee. Only one such re-examination is possible ~~and students in this category are not eligible for the award of 'pass with distinction'~~. If a re-examination is to be held, it must be conducted not less than one month and not more than six months after the first examination. The decision of the voting members of the Committee following this re-examination can only be 'pass' or 'fail' decided by simple majority. Failure will lead to immediate termination of the student's program. There is no option for further re-examination.
 - ~~d-~~ c. Students awarded a 'fail' are deemed, by unanimous vote of the Comprehensive Examination Committee, to be unable to demonstrate an adequate understanding of their research area(s). The student's program is terminated. A simple majority vote will default to the award of 're-examination'.
6. The Chairperson of the Comprehensive Examination Committee shall report to the Head of the academic unit who shall report to the Dean. The result of the comprehensive examination(s) shall be reported to the student by the Dean.

4.10 Theses and Reports

4.10.1 Thesis/Report Guide Supplement

The Guidelines for Theses and Reports, available at (www.mun.ca/sqs/go/guid_policies/theses.php), approved by the Academic Council of the School of Graduate Studies, provides the details for the examination process, general form and style of the thesis/report, required forms, number of copies, etc., required under this regulation.

4.10.2 Submission

1. Students must submit the thesis/report at least four months before the University Convocation at which the award of the Degree is expected (see **University Diary** in current edition of University Calendar for exact date). The School of Graduate Studies does not accept any responsibility for completing the prescribed procedure in time for the nearest Convocation unless theses or reports are submitted by the prescribed dates in any current academic year.
2. A thesis/report may not be submitted until the student has fulfilled:
 - a. All course requirements, if any
 - b. All language requirements, if any
 - c. The comprehensive examination, if required, and
 - d. All other academic requirements of the academic unit concerned.

4.10.3 Evaluation of Master's Theses and Reports

1. Final examiners for the thesis/report will be appointed by the Dean on the recommendation of the academic unit. There will be two examiners for a Master's thesis. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis, in the discipline or cognate area. Those serving as examiners shall not have been involved in the preparation of the thesis/report.
2. Examination of the thesis/report will result in one of the following recommendations by each examiner. The thesis/report is:
 - a. acceptable without modifications; or
 - b. acceptable, modifications are required but the thesis does not have to be re-examined*; or
 - c. unacceptable, the thesis/report requires modification and re-examination**; or
 - d. totally unacceptable, the thesis/report is failed.***
- o *Modifications may include corrections of typographical errors and errors in nomenclature, improvement in phrasing, or rewriting of sections of the thesis/report. Modifications may be indicated in the text or listed separately;
- o **Modifications might include (but are not limited to) the rectification of one or more of the following deficiencies: (1) misinterpretation and/or misuse of the matter covered, omission of relevant materials, unfounded conclusions, illogicality of argument, improper analysis of data and the like, (2) bad writing, (3) unacceptable physical presentation. A detailed list of problems should be included with the report;
- o ***A detailed list of the reason(s) for failure must be included in the report.
3. If all examiners recommend that the thesis/report is totally unacceptable, then the thesis will be failed, and shall not be re-examined.
4. If an examiner recommends that the thesis/report is unacceptable, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:
 - . to submit a modified thesis/report to the original examiners.
 - a. to submit a modified thesis/report to new examiners.
 - b. to submit the original thesis/report to an Examination Board to be appointed by the Dean.
5. If a thesis/report is re-examined, the student will not be awarded a pass unless all examiners find the thesis acceptable.
6. Under no circumstances may a thesis/report be re-examined more than once.

4.10.4 Evaluation of Ph.D. and Psy.D. Theses

Students for the Degree of Doctor of Philosophy and the Degree of Doctor of Psychology must submit a written dissertation deemed acceptable by the University, and demonstrate their ability to defend their work in a public oral examination. For this reason, the final decision on whether a student will be recommended for the award of the degree is made only at the conclusion of the oral examination (see **The Examination Process**).

1. Responsibilities of the Thesis Examining Board

The work of each student will be assessed by a Thesis Examining Board. Its first responsibility is to determine whether the thesis successfully demonstrates the student's competence to undertake independent research work. The Board must be satisfied that the work contributes significantly to knowledge in the field of study; that the contribution is of high scholarly merit; that the student is aware of the pertinent published literature; that it is written in a satisfactory style; and that it is free from typographical and other mechanical errors. The second responsibility of the Board is to conduct a final oral examination of the student and to then recommend to the Dean of Graduate Studies whether the student should be awarded the Degree.

2. Composition of the Thesis Examining Board

The members of the Thesis Examining Board will be appointed by the Dean on the recommendation of the Head of the academic unit who will have consulted with the supervisory committee. The Board shall consist of four members. Normally these will be the student's Supervisor (who serves on the Board in a non-voting capacity), two examiners from within the University, and one from outside the University. However, when circumstances warrant, a second external examiner may be substituted for one of the internal examiners with permission of the Dean. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis, in the discipline or cognate area. Members of the supervisory committee other than the Supervisor are ineligible for appointment to the Board. Those serving as examiners shall not have been involved in the preparation of the thesis/report.

3. The Examination Process

- a. The voting members of the Board shall submit written reports on the thesis containing an assessment of the quality of the written work and a recommendation as to whether the student should be permitted to proceed to an oral examination and defence of the work. An examiner may recommend:

- i. that the student be allowed to proceed to the oral defence of the thesis*; or
- ii. that the student not be allowed to proceed to the oral defence at this time**; or
- iii. that the student should be failed.

*Any suggested corrections or revisions should be outlined in the examiner's report. It is understood that it will be the responsibility of the Supervisory Committee to discuss the suggested changes with the student, to determine which should be incorporated in the thesis before its final submission.

**This recommendation reflects the examiner's opinion that further research, re-analysis of data, or thorough rewriting of the material is required. The thesis may, however, be re-submitted for examination.

- b. If all examiners recommend that the student should be failed, then the thesis shall not be re-examined.
- c. If an examiner recommends that the student not be allowed to proceed to the oral defence, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:
 - i. to submit a modified thesis to the original examiners.
 - ii. to submit a modified thesis to new examiners.
 - iii. to submit the original thesis to an Examination Board to be appointed by the Dean.
- d. No student will be permitted to re-submit a thesis more than once. In case of a re-submitted thesis an examiner may recommend only:
 - i. that the student be allowed to proceed to the oral defence of the thesis; or
 - ii. that the student should be failed.
- e. After receiving the reports from all three voting members of the Board the Dean will consider the recommendations and determine whether an oral defence of the thesis will be scheduled.

- f. The Final Oral Examination and Defence of Thesis will take place at a time and place to be determined by the Dean of Graduate Studies and will be chaired by the Dean or delegate. The presence of all members of the Examining Board is normally required.
- g. Following the defence, the Board will meet *in camera* to render a final assessment of the thesis and the student's ability to defend the their work. The Board may recommend one of the following outcomes:
 - i. ~~Passed with distinction (Awarded to students who demonstrate superior knowledge of their research area(s); this category requires unanimous support of the Board. A simple majority vote will result in a recommendation of 'passed'.)~~
 - ii. Passed*
 - iii. Passed Subject to Conditions**
 - iv. Re-examination required***
 - v. Failed***

*This recommendation may have attached to it the requirement that the student complete certain specified revisions to the satisfaction of the Supervisory Committee, the Head of the academic unit and the Dean. These revisions must have been specified in the written appraisal submitted prior to the Oral Examination.

**** This recommendation is made only if there are significant flaws in the candidate's work that come to light during the oral defence. Such flaws must be separate from, or in addition to, anything noted or specified in the written appraisals submitted prior to the oral defence. The flaws must also be of such importance that the main conclusions of the thesis are deemed invalid as a result of their existence. This recommendation must have the details attached and cannot include the option of re-examination.**

~~***This recommendation is made if there are revisions beyond those specified in the written appraisal submitted prior to the Oral Examination. This recommendation must have the conditions attached and cannot include the option of re-examination.~~

~~***The members of the Thesis Examination Board may attach to this recommendation a list of any requirements which they feel are appropriate.~~

~~***Re-examination not permitted.~~
- h. If the members of the Board are unanimous in their recommendation, the Chair of the Examination may accept this recommendation and inform the student of the decision. In any other case, however, the delivering of any final decision shall be deferred pending further consultation within the School of Graduate Studies.
- i. No student shall be permitted more than two Oral Examinations.

4.10.5 Time Limit for Revision

The final version of Master's, Ph.D., and Psy.D. theses/reports found acceptable with or without corrections shall be submitted to the School of Graduate Studies within 6 months of the date on which the thesis/report and the student's examiners' reports are returned to the student's academic unit. If a corrected thesis/report is not submitted within 6 months the student is considered to have withdrawn from the program. After this time, the student must apply to be readmitted.

Master's, Ph.D., and Psy.D. theses/reports requiring re-examination shall be resubmitted to the School of Graduate Studies within 12 months of the date on which the thesis/report and the examiner's reports are returned to the student. Students requiring resubmission and re-examination of theses/reports must maintain their registration during this period. Failure to resubmit the revised thesis/report within 12 months will result in termination of the student's program.

Note:

Please refer to **Registration** for regulations governing program registration.

4.10.6 Prepublication

Publication of material before submission of the thesis/report for examination is permitted. The School of Graduate Studies and Supervisor should be informed of such publication.

27.11 Earth Sciences

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/science
- www.mun.ca/earthsciences

The degrees of Master of Science and Doctor of Philosophy are offered in Earth Sciences (Geology) and Earth Sciences (Geophysics) by full-time and part-time study.

27.11.1 Program of Study

1. Admission into a Master's Degree program in Earth Sciences (Geology) and Earth Sciences (Geophysics) is restricted to students holding at least a B.Sc. Degree with second class Honours. When circumstances warrant, this requirement may be waived by the School of Graduate Studies on the recommendation of the Head of the Department.
2. Each student will be assigned a multi-member supervisory committee. This committee shall consist of the Supervisor and at least one other member. Within two weeks of the first registration in the M.Sc. Degree program, a student will meet with the student's supervisory committee. Within six months, the student and the supervisory committee will agree on a written thesis proposal outlining the objectives, methods, timetable and funding for the project, and provide the proposal (signed by the student and supervisory committee) to the Head for inclusion in the student's file.
3. A student for the M.Sc. Degree must complete a minimum of 6 credit hours in program courses. The courses must be selected from the overview and general courses below or with the approval of the supervisory committee and Head of the Department, other graduate level courses including those offered by other departments. Depending on background and/or area of specialization, a student also may be required to complete additional courses in Earth Sciences or related subjects.
4. All course requirements should be completed within one year from the date of first registration in the M.Sc. Degree program.
5. A student is required to give an oral presentation to the Department on the results of their research. This presentation is normally given during the second year of the program and must take place within the Graduate Student Seminar Series.
6. A student is required to give an oral defence of their thesis research. The defence will consist of three voting members and will be comprised of the supervisory committee, a third supervisory committee member (if one exists), or one other regular faculty member (who may also be suggested to examine the thesis), and the chair or delegate (non-voting). The defence presentation will be open to the public, but examiner questions will be held in camera. Possible outcomes of the defence are the same as for the Ph.D. as outlined under [Evaluation of Ph.D. and Psy.D. Theses, The Examination Process](#). Students who earn a "Pass" or "Pass with Distinction" can proceed to the thesis examination following the procedures of the School of Graduate Studies (SGS). ~~Students who earn a "Pass Subject to Conditions" must satisfy those conditions before submitting their thesis for examination.~~ Students who earn a "Re-Examination Required" have six months to complete that re-examination or their program will be terminated. Students who earn a "Fail" will have their program terminated. Once the defence and any necessary revisions are completed, the supervisory committee will complete the Supervisory Approval Form and the thesis may then proceed to examination following the SGS procedures.
7. The M.Sc. Degree program will conclude with a thesis examination as prescribed in the [Regulations Governing the Degree of Master of Science](#).
8. The Supervisor and the Head of the Department may recommend to the Dean of Graduate Studies that a student who is not making satisfactory progress be required to withdraw from the program.

27.11.2 Courses

A selection of courses will be offered to meet the requirements of students as far as the resources of the Department will allow.

27.11.2.1 Overview Courses

- 7110 Physics of the Solid Earth

- 7120 Crustal Geophysics
- 7300 Changes in Global Paleoenvironment
- 7400 Tectonic Regimes
- 7410 Engineering and Environmental Geology
- 7500 Chemical Fluxes in the Earth
- 7810 Paleoecology (*same as the former 6810. credit may be obtained for only one of 7810 or 6810*)

27.11.2.2 General Courses

- 6070 Quantitative Techniques in Mineralogy and Metamorphic Petrology
- 6105 Advanced Field Course in Applied Geophysics (may be offered in accelerated format)
- 6141 Rotation of the Earth
- 6142 Theory of Global Geodynamics
- 6152 Paleomagnetism
- 6171 Advanced Exploration Seismology
- 6172 Borehole Seismic
- 6175 Gravity and Magnetic Methods
- 6177 Mathematical Formulations of Seismic Wave Phenomena
- 6210 Genesis of Mineral Deposits
- 6320 Marine Geology
- 6400 Flow and Transport in Fractured Rock
- 6410 Advanced Engineering and Environmental Geology
- 6420 Deformation Mechanisms
- 6500 Stable Isotope Geochemistry
- 6510 Trace Element Geochemistry
- 6520 Methods in Advanced Research in Geochemistry
- 6540 Radiogenic Isotope Geochemistry
- 6550 Biogeochemistry
- 6600 Petroleum Geology
- 6740 Modern and Ancient Sedimentary Environments
- 6750 Sequence Stratigraphy
- 6801 Palaeobiology of Early Animal Life
- 6820 Palynology and Paleobotany
- 6900-6999 Special Topics in Earth Sciences

36.4 Biology

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/science
- www.mun.ca/biology

The Degree of Doctor of Philosophy is offered in Biology to full-time and part-time students. Students interested in animal behaviour should also consult the section in the Calendar describing the Doctoral programs **Cognitive and Behavioural Ecology**. Students interested in **Marine Biology** should consult the section of the Calendar specific to the Doctoral program in that area of study.

36.4.1 Program of Study

1. A student will be required to take Biology 7000 (Graduate Core Seminar).
2. Admission to a Ph.D. program in Biology shall not normally take place until after the completion of the course requirements and the submission of the thesis for the M.Sc. Degree. However, on the recommendation of the Department, this requirement may be waived by the Dean of Graduate Studies.
3. The program of a student shall be the responsibility of a Supervisory Committee composed of the Supervisor and at least two other appropriate members recommended to the Dean by the Head (or delegate) of the Department with the concurrence of the Supervisor.
4. The Supervisory Committee shall interview the student normally within a month of first registration, to discuss the student's program and to explore any areas of weakness in the student's biological knowledge, especially where these relate to the intended areas of research. The Supervisory Committee will recommend a student's subdiscipline within Biology to the Department in writing after this meeting.
5. It is the function of a Supervisory Committee to have regular meetings, at least annually, with its graduate student. A meeting report, signed by all members of the Supervisory Committee and student, must be given to the Department. A copy will be sent to the graduate student and to the Dean of Graduate Studies.
6. The student will present a tentative outline of the proposed research to the Supervisory Committee, with a copy to the Department by the end of the second semester, and preferably prior to commencement of the research.
7. The student will present a research seminar to the Department, normally by the end of the second semester following admission, to describe the research topic being investigated and the methodologies to be employed. This seminar provides an opportunity for the student to receive constructive input from the broad biological community.
8. When the Supervisory Committee deems it necessary, a working knowledge of a language other than English may be required.
9. Comprehensive Examination
 - a. Timing of Examination
 - i. Timing of the comprehensive examination shall follow General Regulation, 1. under **Comprehensive Examination, Ph.D Comprehensive Examination** governing the Degree of Doctor of Philosophy. A student registered in a full-time Ph.D. program in the Faculty of Science, Department of Biology shall normally take the comprehensive examination during the first year of the program, and no later than one year after completion of the prescribed courses.
 - ii. The procedure shall be initiated by the student's Supervisor who will notify the Department of Biology, in writing, of the student's readiness. Failure to meet the above requirement can result in the student being required to withdraw from the program.
 - b. Examination Committee

The Examination Committee shall be appointed by the Dean of Graduate Studies on the recommendation of the Department of Biology according to Regulation **Comprehensive Examinations, Ph.D. Comprehensive Examination**, 2. of the **General Regulations** of the School of Graduate Studies. No more than two members of the Examination Committee may be members of the student's Supervisory Committee. The committee shall meet and

recommend to the Department in writing an examination seminar topic within the student's previously determined subdiscipline.

c. Examination Procedure

The Department shall provide the student the examination date and the seminar topic in writing not more than six nor less than four weeks prior to the examination. The student shall provide each member of the Examination Committee a written paper on the seminar topic one week prior to the examination. The Examination Committee shall evaluate the student's presentation and response to questions put to the student during the Oral Examination both on the seminar and within the student's subdiscipline of Biology.

d. Subsequent Action

The Examination Committee will meet in camera to arrive at its conclusions. The Chair shall report the results of the Examination to the Head and the Dean of Graduate Studies for transmission to the student. The report will include one of the following decisions: a) the student ~~passed with distinction~~, passed or failed. b) if failed and it is the first examination whether the student may be re-examined.

e. Re-examination

Comprehensive Re-examination if permitted will occur not sooner than one month and not more than six months after the first. The student and the Supervisory Committee shall be informed of the deficiencies found. The format for the second examination will be determined by the Examination Committee with the approval of the Biology Graduate Studies Committee. The student will be informed of the topic and format four to six weeks prior to the examination. The examination will follow the procedure outlined in 8.c and d. above. A failure will require the student to withdraw from the program.

10. Theses shall conform to **Theses and Reports** of the **General Regulations** of the School of Graduate Studies and the Departmental Guidelines.

36.4.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, as far as the resources of the Department will allow.

- 6000 Research Topics in Microbiology
- 6131 Models in Biology (*credit cannot be obtained if already received for Biology 4607*)
- 6351 Behavioural Ecology and Sociobiology (*cross-listed as Psychology 6351*) *credit cannot be obtained if already received for Biology 4701*
- 6590 Molecular Biology I (*cross-listed as Medicine 6590 and credit-restricted with Biochemistry 6590*) *prerequisites: Biology 4241 (or equivalent)*
- 6591 Molecular Biology II (*cross-listed as Medicine 6591 and credit-restricted with the former Biochemistry 6591*) *prerequisites: Biology 4241 (or equivalent)*
- 6592 Bacterial Genetics (*credit-restricted with the former Biochemistry 6592*) *prerequisite: Biology 4241 (or equivalent)*
- 6593 Selected Readings in Molecular Biology (*credit-restricted with the former Biochemistry 6593*) *prerequisites or co-requisites: one of Biology, Biochemistry or Medicine 6590, and one of Biology 6591, Medicine 6591, or the former Biochemistry 6591 (or equivalent)*
- 6710 Marine Benthic Biology
- 7000 Graduate Core Seminar (*cross-listed as Ocean Science 7000*)
- 7101 Topics in Marine Biology
- 7201 Topics in Cellular and Molecular Biology and Physiology
- 7220 Quantitative Methods in Biology (*credit cannot be obtained if already received for Biology 4605*)
- 7300 Ornithology (*credit cannot be obtained if already received for Biology 4620*)
- 7301 Topics in Ecology and Conservation Biology
- 7530 The Molecular Biology of Development
- 7535 Research Methods in Marine Science
- 7920-7960 Special Topics in Biology (*excluding Biology 7931*)
- 7931 Research Methods in Genetic Biotechnology (Note: Biology 7931 may be delivered in an accelerated format outside of the regular semester time frame)

36.11 English

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/hss
- www.mun.ca/english

The degrees of Master of Arts and Doctor of Philosophy are offered in English.

Students for the M.A. in English may complete the program as either part-time or full-time students.

Students for the Ph.D. in English must be in attendance as full-time students for at least three semesters of the program.

36.11.1 Program of Study

1. Admission to the Ph.D. in English is limited and competitive. Applicants should have a Master's Degree in English or its equivalent from a recognized university and should have an outstanding academic record.
2. All students will be required to complete 15 credit hours in graduate courses. These courses will be selected by the student in consultation with the student's Supervisory Committee.
While students will normally be free to choose graduate courses of interest to them, it will be a primary responsibility of their Supervisory Committees to ensure that any serious deficiencies in their record of previous courses, graduate and undergraduate, are remedied, particularly in the area of proposed thesis research.
3. Students who have not previously taken English 7003 or its equivalent will take English 7003, which will count as one of the required courses for the Ph.D. Students who have taken English 7003 or its equivalent before entering the Ph.D. program must still complete 15 credit hours.
4. Students who have not completed English 4900 or English 5900 or an equivalent course will be required to complete English 5900, which will not count as one of the required courses for the Ph.D. The course will be graded "pass" or "fail". As in other graduate courses a grade of 65B or above is considered a pass.
5. Students must submit a thesis proposal which includes a statement of topic, a working title, a plan of research, and a preliminary bibliography. The thesis proposal should be approved by the Supervisory Committee and submitted to the Departmental Graduate Studies Committee for its approval before the Comprehensive Examination and before the end of the fifth semester. The Departmental Graduate Studies Committee shall return the thesis proposal to the student no later than one month after receiving it.
6. Reading knowledge of a second language will be required of all students. Reading knowledge is defined as a minimum B grade in a second-year language course taken within the previous five years, a passing grade in an approved second-language course for graduate students, or performance satisfactory to the Department in an arranged reading proficiency test (in which a dictionary may be used).
The language requirement should be completed before the Comprehensive Examination is taken. The second language will normally be French. In exceptional circumstances, and on the recommendation of the Supervisory Committee and the Departmental Graduate Studies Committee, a language other than French may be substituted.
The Supervisory Committee may also require a demonstrated reading knowledge of an additional language (other than French or the substituted language) if such knowledge is deemed necessary for the student's research interests.
7. The Ph.D. Comprehensive Examination in English will have written and oral components, will have two parts, and will be prepared by the student's Comprehensive Examination Committee. The Comprehensive Examination Committee will determine the submission dates for papers and the dates of oral examinations. The Ph.D. Comprehensive Examination in English shall in all circumstances be in accordance with General Regulation **Comprehensive Examinations, Ph.D. Comprehensive Examination.**
The student's Comprehensive Examination Committee will include the Head (or the Head's delegate, usually the Graduate Co-ordinator), the Dean of the School of Graduate Studies (or delegate), the student's Supervisor, and three other members of the Department.
The examination shall take place before the end of the seventh semester.

The first part of the examination will be in a complementary area (Complementary Examination) and the student will have a choice of either writing an essay in response to questions determined by the Comprehensive Examination Committee or completing a set of assignments related to teaching in the field.

The second part of the examination will be in the student's thesis area (Thesis Area Examination) and will require the student to write in response to questions determined by the Comprehensive Examination Committee and that paper will form the basis of a departmental presentation. The Comprehensive Examination Committee will orally examine the student about the paper topic and the broader relationship to the thesis area.

All examinations, both written and oral, will comply with Departmental Guidelines.

Students will be graded "~~pass with distinction~~", "pass", "re-examination", or "fail." Students who are marked for "re-examination" will be re-examined in the area or areas in which the Comprehensive Examination Committee has determined that the student's performance is deficient. The nature of this re-examination (and whether it will be written or oral) is left to the discretion of the Comprehensive Examination Committee.

36.11.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, as far as the resources of the Department will allow.

Notes:

1. *Since it is impossible to list in detail the many topics that may from time to time be offered, the titles below refer only to the major periods and general subject areas in which specific courses may be available. The content and approach in specific courses will vary according to the research interests of students and faculty involved in the course. Students should consult the Department's annual Graduate Student Guide (or the Graduate Co-ordinator) for detailed descriptions of specific course offerings. Normally, no fewer than 30 credit hours in graduate courses are offered in any given academic year.*
2. *English 5900 cannot be counted as one of the required graduate courses in any program.*
3. *All students will normally take English 7003 - Trends in Contemporary Literary Theory, usually in their first semester.*
4. *Students who took graduate courses in English at Memorial University of Newfoundland before 1997 should consult with the Department before selecting further courses.*

- 602F Foundation English for Graduate Students
- 6999 Master's Essay (for non-thesis students)
- 7003 Trends in Contemporary Critical Theory
- 7099 Masters Internship
- 7100-7149 Author Studies
- 7150-7199 Book Histories
- 7200-7249 Creative Writings
- 7250-7299 Critical Theories
- 7300-7349 Cultural Studies
- 7350-7399 Genre Studies
- 7400-7449 Global Literatures
- 7450-7499 Indigenous Voices
- 7500-7549 Literary Movements
- 7550-7599 National Literatures
- 7600-7649 Period Studies
- 7650-7699 Regional Literatures
- 7700-7749 Special Topics
- 7750-7799 Visual Narratives

36.15 Folklore

- www.mun.ca/sqs/contacts/sqscontacts.php
- www.mun.ca/hss
- www.mun.ca/folklore

The Degree of Doctor of Philosophy in Folklore is offered by part-time and full-time study and is primarily a research Degree. The program normally requires extensive fieldwork research in Newfoundland and/or the Maritimes.

Integral to the teaching of the Department of Folklore is the work of the Memorial University of Newfoundland Folklore and Language Archive; see section under **Master of Arts, Folklore**.

36.15.1 Program of Study

1. An applicant for admission to the Ph.D. program in Folklore must hold an M.A. Degree in Folklore, or its equivalent as determined by the Head of the Department and the Dean, with an average grade in M.A. courses of not less than 80%.
2. All Ph.D. students in the Folklore program must complete *at least* 18 credit hours in program graduate courses which shall include Folklore 7000 and 7100. Students will normally be free to choose graduate courses of interest to them in Folklore or related disciplines, though it will be a primary responsibility of their committees to ensure that any serious deficiencies are made good. At the end of the second semester the program and further status of the student will be reviewed.
3. Second Language Requirements:
 - a. All Ph.D. students are required to demonstrate an adequate reading knowledge of a second language - normally a common, modern language.
 - b. Reading knowledge is defined as a minimum B grade in a second-year language course taken within the previous five years, or performance satisfactory to the Department in an arranged reading proficiency test.
 - c. The selection of a second language can be based on the student's research requirements.
 - d. The selection of a second language must be made in consultation with the student's faculty advisor or Supervisor. Confirmation that the choice is acceptable must be obtained from the Department.
 - e. The language requirement must normally be fulfilled before a student takes the Ph.D. Comprehensive Examination.
4. Comprehensive Examination for the Ph.D.:
 - a. The Ph.D. Comprehensive Examination shall be administered in accordance with **General Regulations, Comprehensive Examinations**. Students will prepare for three examinations by undertaking supervised readings in three fields decided by the Comprehensive Examinations Committee. The basic principle is to integrate knowledge within specific areas of folklore and folklife scholarship. The examination normally will be written with the format to be determined by the Comprehensive Examination Committee in consultation with the student. Assessment will be based on the examination of three papers each of one week duration or three open book examinations each of eight hour duration. The Committee will recommend to the Dean of Graduate Studies a grade of ~~PWD (pass with distinction)~~, PAS (pass), REX (re-examination), or FAL (fail).
 - b. Examination normally will take place only upon the completion of the second language requirements and no earlier than the end of the first year after admission to candidacy but no later than one year after the completion of the program courses. The examination normally will be scheduled in the second semester following the student's completion of courses.
5. Ph.D. Thesis:
 - a. The student will normally submit a thesis proposal based on the student's own interests no later than the end of the semester following the completion of comprehensive examinations. The thesis proposal will include a working title, names of preferred Supervisor and two other Committee members, statement of topic, plan of research, statement of methodological and theoretical approach, a brief review of the literature and a preliminary bibliography. The proposal will be circulated to the Department for critical

evaluation on the basis of which the student will be informed, within one month, by the Supervisor, of its acceptance, rejection, or acceptance with recommended changes.

- b. The thesis shall give evidence of the student's ability to carry out independent and original research, develop the necessary theoretical and methodological framework and present the findings in a scholarly manner.

36.15.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, normally after consultation with the Head of the Department or the Graduate Studies Administrator, and as far as the resources of the Department will allow. Courses are structured according to the categories of: Theories and Methods, Issues, Form and Performance, Special Topics, Regional, National and International Heritage, Social Identities, Public and Applied Folklore, Interdisciplinary Perspectives and Required (Ph.D.).

- **Theories and Methods**
 - 6010 Survey of Folklore Genres and Processes
 - 6020 Field and Research Methods
 - 6030 Folklore Theories
 - 6040 Feminist Theories: Perspectives and Issues
 - 6080 Vernacular Theories
 - 6090 Ethnology
- **Issues**
 - 6050 Issues in Folkloristics
 - 6060 Issues in Folk Literature
 - 6070 Issues in Folklife
- **Form and Performance**
 - 6100 Song and Music
 - 6120 Ballad
 - 6130 Folk Music Canons and Documentary Sound Recordings
 - 6200 Folktale
 - 6210 Legend
 - 6220 Personal Experience Narrative
 - 6250 Language and Play
 - 6260 Ethnography of Communications
 - 6300 Ethnography of Belief
 - 6310 Health Systems
 - 6350 Custom
 - 6360 Traditional Drama
 - 6370 Ritual, Festival and Public Display
 - 6400 Material Culture
 - 6410 Vernacular Architecture
 - 6420 Art and the Artifact
 - 6430 Food and Culture
 - 6720 Folklore and Literature
- **Special Topics**
 - 6511-29 Special Topics in Folklore
 - 6550 Special Research in Folklore
 - 6551 Indigenous Expressive Cultures in Cross-Cultural Encounter
 - 6552-69 Special Research in Folklore
 - 6570-79 Reading Course in Folklore
- **Regional, National and International Heritage**
 - 6600 Folklore of Newfoundland
 - 6610 Folklore of Canada
 - 6620 Folklore of the United States
 - 6630 Folklore of the British Isles

- 6640 Traditional Culture of Scotland
- 6650 Culture and Traditions of Ireland
- 6660 Folklore of the Francophone Regions
- 6690 International Folklore
- **Social Identities**
 - 6510 Occupational Folklife
 - 6730 Folklore and Gender
 - 6770 The Global and the Local
 - 6780 Ethnicities
- **Public and Applied Folklore**
 - 6380 Perspectives on Cultural Tourism
 - 6740 Public Sector Folklore
 - 6760 Archiving
 - 6790 Museums: Perspectives and Practices
 - 6800 Applied Folklore
- **Interdisciplinary Perspectives**
 - 6700 Folklore and Culture
 - 6710 Oral Tradition and Oral History
 - 6750 Popular Culture: Theory and Debate
- **Required (Ph.D.)**
 - 7000 Advanced Folkloristics I
 - 7100 Advanced Folkloristics II Research and Ethnography

Credit may not be obtained for both 6010 and the former 6110; 6020 and the former 6111; 6030 and the former 6112; 6100 and the former 6430; 6120 and the former 6445; 6300 and the former 6230; 6350 and the former 6230; 6400 and the former 6501; 6720 and the former 6460.

4.8 Comprehensive Examinations

4.8.1 Master's Comprehensive Examination

6. The composition of the Comprehensive Examination Committee is specified in the Degree and Departmental regulations, and the Committee is appointed by the Dean. The Dean of Graduate Studies or delegate may exercise the right to attend. All members of the Committee including the Chairperson, but excluding the Dean of Graduate Studies or delegate, shall be voting members.
7. In this examination the student must demonstrate an advanced knowledge of the academic discipline as defined by the academic unit in which they are students. Therefore, in order to be eligible to sit the examination, all course requirements must normally be completed.
8. In cases where there are multiple parts to a comprehensive exam, including written and oral parts, a student must satisfy all parts of the examination to obtain a pass. The requirements to advance to a later part of the examination are specified in the Degree and Departmental regulations or by the appropriate academic unit.
9. Members of the Comprehensive Examination Committee shall decide the results of the comprehensive examination as indicated in a.-c. below:
 - a. The category of 'pass' will be awarded to students who demonstrate an acceptable knowledge of their area(s) and requires a simple majority vote.
 - b. The category of 're-examination' selects those students with an understanding of their research area that lacks sufficient depth and scope as indicated by a simple majority of the Comprehensive Examination Committee. Only one such re-examination is possible. If a re-examination is to be held, it must be conducted not less than one month and not more than six months after the first examination. The decision of the voting members of the Committee following this re-examination can only be 'pass' or 'fail' decided by simple majority. Failure will lead to immediate termination of the student's program. There is no option for further re-examination.
 - c. Students awarded a 'fail' are deemed, by unanimous vote of the Comprehensive Examination Committee, to be unable to demonstrate an adequate understanding of their area(s). The student's program is terminated. A simple majority vote will default to the award of 're-examination'.
10. The Chairperson of the Comprehensive Examination Committee shall report to the Head of the academic unit who shall report to the Dean. The result of the comprehensive examination(s) shall be reported to the student by the Dean.

4.8.2 Ph.D. and Psy.D. Comprehensive Examination

7. The student shall submit to a comprehensive examination, which may be written or oral or both as determined by the academic unit. Students shall normally take the examination no later than the end of the seventh semester in the doctoral program. Unless an extension is approved by the Dean of Graduate Studies, failure to take the examination at this time will result in the termination of the student's program.
8. This examination, whether written or oral, shall be conducted by a Committee appointed by the Dean of Graduate Studies on the recommendation of the academic unit. It shall consist of the Head of the academic unit (or delegate) who shall be the Chairperson, the student's Supervisor [or, where a Supervisor has not yet been appointed, the Graduate Officer or Chair of the Graduate Studies (or equivalent) Committee], and at least three other members, the total voting members to be an odd number. For students in the Ph.D. program, all members of the Committee including the Chairperson, but excluding the Dean of Graduate Studies or delegate, shall be voting members. For students in the Psy.D. program, the voting members of the committee shall be clinical psychologists, but will not include Chairperson, the Supervisor, or the Associate Vice-President (Academic) and Dean, Graduate Studies.
9. In this examination, the student must demonstrate a mastery of those subjects appropriate to the student's area(s), as defined by the academic unit in which the candidate is a student. Therefore, in order to be eligible to sit the examination, all course requirements must normally be completed. The area(s) upon which the student will be examined should be made known to the student no later than three months prior to the examination. The student must further be able to relate the specialization of their research to the larger context of these areas.

10. In cases where there are multiple parts to a comprehensive exam, including written and oral parts, a student must satisfy all parts of the examination to obtain a pass. The requirements to advance to a later part of the examination are specified in the Degree and Departmental regulations or by the appropriate academic unit.
11. Members of the Comprehensive Examination Committee shall decide the results of the comprehensive examination as indicated in a.-c. below:
 - a. The category of 'pass' will be awarded to students who demonstrate an acceptable knowledge of their area(s) and requires a simple majority vote.
 - b. The category of 're-examination' selects those students with an understanding of their research area(s) that lacks sufficient depth and scope as indicated by a simple majority of the Comprehensive Examination Committee. Only one such re-examination is possible. If a re-examination is to be held, it must be conducted not less than one month and not more than six months after the first examination. The decision of the voting members of the Committee following this re-examination can only be 'pass' or 'fail' decided by simple majority. Failure will lead to immediate termination of the student's program. There is no option for further re-examination.
 - c. Students awarded a 'fail' are deemed, by unanimous vote of the Comprehensive Examination Committee, to be unable to demonstrate an adequate understanding of their research area(s). The student's program is terminated. A simple majority vote will default to the award of 're-examination'.
12. The Chairperson of the Comprehensive Examination Committee shall report to the Head of the academic unit who shall report to the Dean. The result of the comprehensive examination(s) shall be reported to the student by the Dean.

4.10 Theses and Reports

4.10.1 Thesis/Report Guide Supplement

The Guidelines for Theses and Reports, available at (www.mun.ca/sqs/go/quid_policies/theses.php), approved by the Academic Council of the School of Graduate Studies, provides the details for the examination process, general form and style of the thesis/report, required forms, number of copies, etc., required under this regulation.

4.10.2 Submission

3. Students must submit the thesis/report at least four months before the University Convocation at which the award of the Degree is expected (see **University Diary** in current edition of University Calendar for exact date). The School of Graduate Studies does not accept any responsibility for completing the prescribed procedure in time for the nearest Convocation unless theses or reports are submitted by the prescribed dates in any current academic year.
4. A thesis/report may not be submitted until the student has fulfilled:
 - a. All course requirements, if any
 - b. All language requirements, if any
 - c. The comprehensive examination, if required, and
 - d. All other academic requirements of the academic unit concerned.

4.10.3 Evaluation of Master's Theses and Reports

7. Final examiners for the thesis/report will be appointed by the Dean on the recommendation of the academic unit. There will be two examiners for a Master's thesis. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis, in the discipline or cognate area. Those serving as examiners shall not have been involved in the preparation of the thesis/report.
8. Examination of the thesis/report will result in one of the following recommendations by each examiner. The thesis/report is:
 - a. acceptable without modifications; or
 - b. acceptable, modifications are required but the thesis does not have to be re-examined*; or
 - c. unacceptable, the thesis/report requires modification and re-examination**; or
 - d. totally unacceptable, the thesis/report is failed.***
- o *Modifications may include corrections of typographical errors and errors in nomenclature, improvement in phrasing, or rewriting of sections of the thesis/report. Modifications may be indicated in the text or listed separately;
- o **Modifications might include (but are not limited to) the rectification of one or more of the following deficiencies: (1) misinterpretation and/or misuse of the matter covered, omission of relevant materials, unfounded conclusions, illogicality of argument, improper analysis of data and the like, (2) bad writing, (3) unacceptable physical presentation. A detailed list of problems should be included with the report;
- o ***A detailed list of the reason(s) for failure must be included in the report.
9. If all examiners recommend that the thesis/report is totally unacceptable, then the thesis will be failed, and shall not be re-examined.
10. If an examiner recommends that the thesis/report is unacceptable, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:
 - . to submit a modified thesis/report to the original examiners.
 - a. to submit a modified thesis/report to new examiners.
 - b. to submit the original thesis/report to an Examination Board to be appointed by the Dean.
11. If a thesis/report is re-examined, the student will not be awarded a pass unless all examiners find the thesis acceptable.
12. Under no circumstances may a thesis/report be re-examined more than once.

4.10.4 Evaluation of Ph.D. and Psy.D. Theses

Students for the Degree of Doctor of Philosophy and the Degree of Doctor of Psychology must submit a written dissertation deemed acceptable by the University, and demonstrate their ability to defend their work in a public oral examination. For this reason, the final decision on whether a student will be recommended for the award of the degree is made only at the conclusion of the oral examination (see **The Examination Process**).

4. Responsibilities of the Thesis Examining Board

The work of each student will be assessed by a Thesis Examining Board. Its first responsibility is to determine whether the thesis successfully demonstrates the student's competence to undertake independent research work. The Board must be satisfied that the work contributes significantly to knowledge in the field of study; that the contribution is of high scholarly merit; that the student is aware of the pertinent published literature; that it is written in a satisfactory style; and that it is free from typographical and other mechanical errors. The second responsibility of the Board is to conduct a final oral examination of the student and to then recommend to the Dean of Graduate Studies whether the student should be awarded the Degree.

5. Composition of the Thesis Examining Board

The members of the Thesis Examining Board will be appointed by the Dean on the recommendation of the Head of the academic unit who will have consulted with the supervisory committee. The Board shall consist of four members. Normally these will be the student's Supervisor (who serves on the Board in a non-voting capacity), two examiners from within the University, and one from outside the University. However, when circumstances warrant, a second external examiner may be substituted for one of the internal examiners with permission of the Dean. Examiners shall normally be those who have completed a graduate degree at the doctoral level, including a thesis, in the discipline or cognate area. Members of the supervisory committee other than the Supervisor are ineligible for appointment to the Board. Those serving as examiners shall not have been involved in the preparation of the thesis/report.

6. The Examination Process

- a. The voting members of the Board shall submit written reports on the thesis containing an assessment of the quality of the written work and a recommendation as to whether the student should be permitted to proceed to an oral examination and defence of the work. An examiner may recommend:

- i. that the student be allowed to proceed to the oral defence of the thesis*; or
- ii. that the student not be allowed to proceed to the oral defence at this time**; or
- iii. that the student should be failed.

*Any suggested corrections or revisions should be outlined in the examiner's report. It is understood that it will be the responsibility of the Supervisory Committee to discuss the suggested changes with the student, to determine which should be incorporated in the thesis before its final submission.

**This recommendation reflects the examiner's opinion that further research, re-analysis of data, or thorough rewriting of the material is required. The thesis may, however, be re-submitted for examination.

- b. If all examiners recommend that the student should be failed, then the thesis shall not be re-examined.
- c. If an examiner recommends that the student not be allowed to proceed to the oral defence, and this recommendation is accepted by the Dean, then the student may apply to the Dean for permission to resubmit the thesis for re-examination in one of the following ways:
 - i. to submit a modified thesis to the original examiners.
 - ii. to submit a modified thesis to new examiners.
 - iii. to submit the original thesis to an Examination Board to be appointed by the Dean.
- d. No student will be permitted to re-submit a thesis more than once. In case of a re-submitted thesis an examiner may recommend only:
 - i. that the student be allowed to proceed to the oral defence of the thesis; or
 - ii. that the student should be failed.
- e. After receiving the reports from all three voting members of the Board the Dean will consider the recommendations and determine whether an oral defence of the thesis will be scheduled.

- f. The Final Oral Examination and Defence of Thesis will take place at a time and place to be determined by the Dean of Graduate Studies and will be chaired by the Dean or delegate. The presence of all members of the Examining Board is normally required.
- g. Following the defence, the Board will meet *in camera* to render a final assessment of the thesis and the student's ability to defend their work. The Board may recommend one of the following outcomes:
 - i. Passed*
 - ii. Re-examination required**
 - iii. Failed***

*This recommendation may have attached to it the requirement that the student complete certain specified revisions to the satisfaction of the Supervisory Committee, the Head of the academic unit and the Dean. These revisions must have been specified in the written appraisal submitted prior to the Oral Examination.

**The members of the Thesis Examination Board may attach to this recommendation a list of any requirements which they feel are appropriate.

***Re-examination not permitted.
- h. If the members of the Board are unanimous in their recommendation, the Chair of the Examination may accept this recommendation and inform the student of the decision. In any other case, however, the delivering of any final decision shall be deferred pending further consultation within the School of Graduate Studies.
- i. No student shall be permitted more than two Oral Examinations.

4.10.5 Time Limit for Revision

The final version of Master's, Ph.D., and Psy.D. theses/reports found acceptable with or without corrections shall be submitted to the School of Graduate Studies within 6 months of the date on which the thesis/report and the student's examiners' reports are returned to the student's academic unit. If a corrected thesis/report is not submitted within 6 months the student is considered to have withdrawn from the program. After this time, the student must apply to be readmitted.

Master's, Ph.D., and Psy.D. theses/reports requiring re-examination shall be resubmitted to the School of Graduate Studies within 12 months of the date on which the thesis/report and the examiner's reports are returned to the student. Students requiring resubmission and re-examination of theses/reports must maintain their registration during this period. Failure to resubmit the revised thesis/report within 12 months will result in termination of the student's program.

Note:

Please refer to [Registration](#) for regulations governing program registration.

4.10.6 Prepublication

Publication of material before submission of the thesis/report for examination is permitted. The School of Graduate Studies and Supervisor should be informed of such publication.

27.11 Earth Sciences

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/science
- www.mun.ca/earthsciences

The degrees of Master of Science and Doctor of Philosophy are offered in Earth Sciences (Geology) and Earth Sciences (Geophysics) by full-time and part-time study.

27.11.1 Program of Study

- Admission into a Master's Degree program in Earth Sciences (Geology) and Earth Sciences (Geophysics) is restricted to students holding at least a B.Sc. Degree with second class Honours. When circumstances warrant, this requirement may be waived by the School of Graduate Studies on the recommendation of the Head of the Department.
- Each student will be assigned a multi-member supervisory committee. This committee shall consist of the Supervisor and at least one other member. Within two weeks of the first registration in the M.Sc. Degree program, a student will meet with the student's supervisory committee. Within six months, the student and the supervisory committee will agree on a written thesis proposal outlining the objectives, methods, timetable and funding for the project, and provide the proposal (signed by the student and supervisory committee) to the Head for inclusion in the student's file.
- A student for the M.Sc. Degree must complete a minimum of 6 credit hours in program courses. The courses must be selected from the overview and general courses below or with the approval of the supervisory committee and Head of the Department, other graduate level courses including those offered by other departments. Depending on background and/or area of specialization, a student also may be required to complete additional courses in Earth Sciences or related subjects.
- All course requirements should be completed within one year from the date of first registration in the M.Sc. Degree program.
- A student is required to give an oral presentation to the Department on the results of their research. This presentation is normally given during the second year of the program and must take place within the Graduate Student Seminar Series.
- A student is required to give an oral defence of their thesis research. The defence will consist of three voting members and will be comprised of the supervisory committee, a third supervisory committee member (if one exists), or one other regular faculty member (who may also be suggested to examine the thesis), and the chair or delegate (non-voting). The defence presentation will be open to the public, but examiner questions will be held in camera. Possible outcomes of the defence are the same as for the Ph.D. as outlined under [**Evaluation of Ph.D. and Psy.D. Theses, The Examination Process**](#). Students who earn a "Pass" can proceed to the thesis examination following the procedures of the School of Graduate Studies (SGS). Students who earn a "Re-Examination Required" have six months to complete that re-examination or their program will be terminated. Students who earn a "Fail" will have their program terminated. Once the defence and any necessary revisions are completed, the supervisory committee will complete the Supervisory Approval Form and the thesis may then proceed to examination following the SGS procedures.
- The M.Sc. Degree program will conclude with a thesis examination as prescribed in the [**Regulations Governing the Degree of Master of Science**](#).
- The Supervisor and the Head of the Department may recommend to the Dean of Graduate Studies that a student who is not making satisfactory progress be required to withdraw from the program.

27.11.2 Courses

A selection of courses will be offered to meet the requirements of students as far as the resources of the Department will allow.

27.11.2.1 Overview Courses

- 7110 Physics of the Solid Earth
- 7120 Crustal Geophysics
- 7300 Changes in Global Paleoenvironment

- 7400 Tectonic Regimes
- 7410 Engineering and Environmental Geology
- 7500 Chemical Fluxes in the Earth
- 7810 Paleoecology (*same as the former 6810. credit may be obtained for only one of 7810 or 6810*)

27.11.2.2 General Courses

- 6070 Quantitative Techniques in Mineralogy and Metamorphic Petrology
- 6105 Advanced Field Course in Applied Geophysics (may be offered in accelerated format)
- 6141 Rotation of the Earth
- 6142 Theory of Global Geodynamics
- 6152 Paleomagnetism
- 6171 Advanced Exploration Seismology
- 6172 Borehole Seismic
- 6175 Gravity and Magnetic Methods
- 6177 Mathematical Formulations of Seismic Wave Phenomena
- 6210 Genesis of Mineral Deposits
- 6320 Marine Geology
- 6400 Flow and Transport in Fractured Rock
- 6410 Advanced Engineering and Environmental Geology
- 6420 Deformation Mechanisms
- 6500 Stable Isotope Geochemistry
- 6510 Trace Element Geochemistry
- 6520 Methods in Advanced Research in Geochemistry
- 6540 Radiogenic Isotope Geochemistry
- 6550 Biogeochemistry
- 6600 Petroleum Geology
- 6740 Modern and Ancient Sedimentary Environments
- 6750 Sequence Stratigraphy
- 6801 Palaeobiology of Early Animal Life
- 6820 Palynology and Paleobotany
- 6900-6999 Special Topics in Earth Sciences

36.4 Biology

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/science
- www.mun.ca/biology

The Degree of Doctor of Philosophy is offered in Biology to full-time and part-time students. Students interested in animal behaviour should also consult the section in the Calendar describing the Doctoral programs **Cognitive and Behavioural Ecology**. Students interested in **Marine Biology** should consult the section of the Calendar specific to the Doctoral program in that area of study.

36.4.1 Program of Study

11. A student will be required to take Biology 7000 (Graduate Core Seminar).
12. Admission to a Ph.D. program in Biology shall not normally take place until after the completion of the course requirements and the submission of the thesis for the M.Sc. Degree. However, on the recommendation of the Department, this requirement may be waived by the Dean of Graduate Studies.
13. The program of a student shall be the responsibility of a Supervisory Committee composed of the Supervisor and at least two other appropriate members recommended to the Dean by the Head (or delegate) of the Department with the concurrence of the Supervisor.
14. The Supervisory Committee shall interview the student normally within a month of first registration, to discuss the student's program and to explore any areas of weakness in the student's biological knowledge, especially where these relate to the intended areas of research. The Supervisory Committee will recommend a student's subdiscipline within Biology to the Department in writing after this meeting.
15. It is the function of a Supervisory Committee to have regular meetings, at least annually, with its graduate student. A meeting report, signed by all members of the Supervisory Committee and student, must be given to the Department. A copy will be sent to the graduate student and to the Dean of Graduate Studies.
16. The student will present a tentative outline of the proposed research to the Supervisory Committee, with a copy to the Department by the end of the second semester, and preferably prior to commencement of the research.
17. The student will present a research seminar to the Department, normally by the end of the second semester following admission, to describe the research topic being investigated and the methodologies to be employed. This seminar provides an opportunity for the student to receive constructive input from the broad biological community.
18. When the Supervisory Committee deems it necessary, a working knowledge of a language other than English may be required.
19. Comprehensive Examination
 - a. Timing of Examination
 - i. Timing of the comprehensive examination shall follow General Regulation, 1. under **Comprehensive Examination, Ph.D Comprehensive Examination** governing the Degree of Doctor of Philosophy. A student registered in a full-time Ph.D. program in the Faculty of Science, Department of Biology shall normally take the comprehensive examination during the first year of the program, and no later than one year after completion of the prescribed courses.
 - ii. The procedure shall be initiated by the student's Supervisor who will notify the Department of Biology, in writing, of the student's readiness. Failure to meet the above requirement can result in the student being required to withdraw from the program.
 - b. Examination Committee

The Examination Committee shall be appointed by the Dean of Graduate Studies on the recommendation of the Department of Biology according to Regulation **Comprehensive Examinations, Ph.D. Comprehensive Examination**, 2. of the **General Regulations** of the School of Graduate Studies. No more than two members of the Examination Committee may be members of the student's Supervisory Committee. The committee shall meet and

recommend to the Department in writing an examination seminar topic within the student's previously determined subdiscipline.

c. Examination Procedure

The Department shall provide the student the examination date and the seminar topic in writing not more than six nor less than four weeks prior to the examination. The student shall provide each member of the Examination Committee a written paper on the seminar topic one week prior to the examination. The Examination Committee shall evaluate the student's presentation and response to questions put to the student during the Oral Examination both on the seminar and within the student's subdiscipline of Biology.

d. Subsequent Action

The Examination Committee will meet in camera to arrive at its conclusions. The Chair shall report the results of the Examination to the Head and the Dean of Graduate Studies for transmission to the student. The report will include one of the following decisions: a) the student passed or failed. b) if failed and it is the first examination whether the student may be re-examined.

e. Re-examination

Comprehensive Re-examination if permitted will occur not sooner than one month and not more than six months after the first. The student and the Supervisory Committee shall be informed of the deficiencies found. The format for the second examination will be determined by the Examination Committee with the approval of the Biology Graduate Studies Committee. The student will be informed of the topic and format four to six weeks prior to the examination. The examination will follow the procedure outlined in 8.c and d. above. A failure will require the student to withdraw from the program.

20. Theses shall conform to **Theses and Reports** of the **General Regulations** of the School of Graduate Studies and the Departmental Guidelines.

36.4.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, as far as the resources of the Department will allow.

- 6000 Research Topics in Microbiology
- 6131 Models in Biology (*credit cannot be obtained if already received for Biology 4607*)
- 6351 Behavioural Ecology and Sociobiology (*cross-listed as Psychology 6351*) *credit cannot be obtained if already received for Biology 4701*
- 6590 Molecular Biology I (*cross-listed as Medicine 6590 and credit-restricted with Biochemistry 6590*) *prerequisites: Biology 4241 (or equivalent)*
- 6591 Molecular Biology II (*cross-listed as Medicine 6591 and credit-restricted with the former Biochemistry 6591*) *prerequisites: Biology 4241 (or equivalent)*
- 6592 Bacterial Genetics (*credit-restricted with the former Biochemistry 6592*) *prerequisite: Biology 4241 (or equivalent)*
- 6593 Selected Readings in Molecular Biology (*credit-restricted with the former Biochemistry 6593*) *prerequisites or co-requisites: one of Biology, Biochemistry or Medicine 6590, and one of Biology 6591, Medicine 6591, or the former Biochemistry 6591 (or equivalent)*
- 6710 Marine Benthic Biology
- 7000 Graduate Core Seminar (*cross-listed as Ocean Science 7000*)
- 7101 Topics in Marine Biology
- 7201 Topics in Cellular and Molecular Biology and Physiology
- 7220 Quantitative Methods in Biology (*credit cannot be obtained if already received for Biology 4605*)
- 7300 Ornithology (*credit cannot be obtained if already received for Biology 4620*)
- 7301 Topics in Ecology and Conservation Biology
- 7530 The Molecular Biology of Development
- 7535 Research Methods in Marine Science
- 7920-7960 Special Topics in Biology (*excluding Biology 7931*)
- 7931 Research Methods in Genetic Biotechnology (Note: Biology 7931 may be delivered in an accelerated format outside of the regular semester time frame)

36.11 English

- www.mun.ca/sgs/contacts/sgscontacts.php
- www.mun.ca/hss
- www.mun.ca/english

The degrees of Master of Arts and Doctor of Philosophy are offered in English.

Students for the M.A. in English may complete the program as either part-time or full-time students.

Students for the Ph.D. in English must be in attendance as full-time students for at least three semesters of the program.

36.11.1 Program of Study

- Admission to the Ph.D. in English is limited and competitive. Applicants should have a Master's Degree in English or its equivalent from a recognized university and should have an outstanding academic record.
- All students will be required to complete 15 credit hours in graduate courses. These courses will be selected by the student in consultation with the student's Supervisory Committee.
While students will normally be free to choose graduate courses of interest to them, it will be a primary responsibility of their Supervisory Committees to ensure that any serious deficiencies in their record of previous courses, graduate and undergraduate, are remedied, particularly in the area of proposed thesis research.
- Students who have not previously taken English 7003 or its equivalent will take English 7003, which will count as one of the required courses for the Ph.D. Students who have taken English 7003 or its equivalent before entering the Ph.D. program must still complete 15 credit hours.
- Students who have not completed English 4900 or English 5900 or an equivalent course will be required to complete English 5900, which will not count as one of the required courses for the Ph.D. The course will be graded "pass" or "fail". As in other graduate courses a grade of 65B or above is considered a pass.
- Students must submit a thesis proposal which includes a statement of topic, a working title, a plan of research, and a preliminary bibliography. The thesis proposal should be approved by the Supervisory Committee and submitted to the Departmental Graduate Studies Committee for its approval before the Comprehensive Examination and before the end of the fifth semester. The Departmental Graduate Studies Committee shall return the thesis proposal to the student no later than one month after receiving it.
- Reading knowledge of a second language will be required of all students. Reading knowledge is defined as a minimum B grade in a second-year language course taken within the previous five years, a passing grade in an approved second-language course for graduate students, or performance satisfactory to the Department in an arranged reading proficiency test (in which a dictionary may be used).
The language requirement should be completed before the Comprehensive Examination is taken. The second language will normally be French. In exceptional circumstances, and on the recommendation of the Supervisory Committee and the Departmental Graduate Studies Committee, a language other than French may be substituted.
The Supervisory Committee may also require a demonstrated reading knowledge of an additional language (other than French or the substituted language) if such knowledge is deemed necessary for the student's research interests.
- The Ph.D. Comprehensive Examination in English will have written and oral components, will have two parts, and will be prepared by the student's Comprehensive Examination Committee. The Comprehensive Examination Committee will determine the submission dates for papers and the dates of oral examinations. The Ph.D. Comprehensive Examination in English shall in all circumstances be in accordance with General Regulation [Comprehensive Examinations, Ph.D. Comprehensive Examination](#).
The student's Comprehensive Examination Committee will include the Head (or the Head's delegate, usually the Graduate Co-ordinator), the Dean of the School of Graduate Studies (or delegate), the student's Supervisor, and three other members of the Department.
The examination shall take place before the end of the seventh semester.

The first part of the examination will be in a complementary area (Complementary Examination) and the student will have a choice of either writing an essay in response to questions determined by the Comprehensive Examination Committee or completing a set of assignments related to teaching in the field.

The second part of the examination will be in the student's thesis area (Thesis Area Examination) and will require the student to write in response to questions determined by the Comprehensive Examination Committee and that paper will form the basis of a departmental presentation. The Comprehensive Examination Committee will orally examine the student about the paper topic and the broader relationship to the thesis area.

All examinations, both written and oral, will comply with Departmental Guidelines.

Students will be graded "pass", "re-examination", or "fail." Students who are marked for "re-examination" will be re-examined in the area or areas in which the Comprehensive Examination Committee has determined that the student's performance is deficient. The nature of this re-examination (and whether it will be written or oral) is left to the discretion of the Comprehensive Examination Committee.

36.11.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, as far as the resources of the Department will allow.

Notes:

5. *Since it is impossible to list in detail the many topics that may from time to time be offered, the titles below refer only to the major periods and general subject areas in which specific courses may be available. The content and approach in specific courses will vary according to the research interests of students and faculty involved in the course. Students should consult the Department's annual Graduate Student Guide (or the Graduate Co-ordinator) for detailed descriptions of specific course offerings. Normally, no fewer than 30 credit hours in graduate courses are offered in any given academic year.*
6. *English 5900 cannot be counted as one of the required graduate courses in any program.*
7. *All students will normally take English 7003 - Trends in Contemporary Literary Theory, usually in their first semester.*
8. *Students who took graduate courses in English at Memorial University of Newfoundland before 1997 should consult with the Department before selecting further courses.*

- 602F Foundation English for Graduate Students
- 6999 Master's Essay (for non-thesis students)
- 7003 Trends in Contemporary Critical Theory
- 7099 Masters Internship
- 7100-7149 Author Studies
- 7150-7199 Book Histories
- 7200-7249 Creative Writings
- 7250-7299 Critical Theories
- 7300-7349 Cultural Studies
- 7350-7399 Genre Studies
- 7400-7449 Global Literatures
- 7450-7499 Indigenous Voices
- 7500-7549 Literary Movements
- 7550-7599 National Literatures
- 7600-7649 Period Studies
- 7650-7699 Regional Literatures
- 7700-7749 Special Topics
- 7750-7799 Visual Narratives

36.15 Folklore

- www.mun.ca/sqs/contacts/sqscontacts.php
- www.mun.ca/hss
- www.mun.ca/folklore

The Degree of Doctor of Philosophy in Folklore is offered by part-time and full-time study and is primarily a research Degree. The program normally requires extensive fieldwork research in Newfoundland and/or the Maritimes.

Integral to the teaching of the Department of Folklore is the work of the Memorial University of Newfoundland Folklore and Language Archive; see section under **Master of Arts, Folklore**.

36.15.1 Program of Study

- An applicant for admission to the Ph.D. program in Folklore must hold an M.A. Degree in Folklore, or its equivalent as determined by the Head of the Department and the Dean, with an average grade in M.A. courses of not less than 80%.
- All Ph.D. students in the Folklore program must complete *at least* 18 credit hours in program graduate courses which shall include Folklore 7000 and 7100. Students will normally be free to choose graduate courses of interest to them in Folklore or related disciplines, though it will be a primary responsibility of their committees to ensure that any serious deficiencies are made good. At the end of the second semester the program and further status of the student will be reviewed.
- Second Language Requirements:
 - All Ph.D. students are required to demonstrate an adequate reading knowledge of a second language - normally a common, modern language.
 - Reading knowledge is defined as a minimum B grade in a second-year language course taken within the previous five years, or performance satisfactory to the Department in an arranged reading proficiency test.
 - The selection of a second language can be based on the student's research requirements.
 - The selection of a second language must be made in consultation with the student's faculty advisor or Supervisor. Confirmation that the choice is acceptable must be obtained from the Department.
 - The language requirement must normally be fulfilled before a student takes the Ph.D. Comprehensive Examination.
- Comprehensive Examination for the Ph.D.:
 - The Ph.D. Comprehensive Examination shall be administered in accordance with **General Regulations, Comprehensive Examinations**. Students will prepare for three examinations by undertaking supervised readings in three fields decided by the Comprehensive Examinations Committee. The basic principle is to integrate knowledge within specific areas of folklore and folklife scholarship. The examination normally will be written with the format to be determined by the Comprehensive Examination Committee in consultation with the student. Assessment will be based on the examination of three papers each of one week duration or three open book examinations each of eight hour duration. The Committee will recommend to the Dean of Graduate Studies a grade of PAS (pass), REX (re-examination), or FAL (fail).
 - Examination normally will take place only upon the completion of the second language requirements and no earlier than the end of the first year after admission to candidacy but no later than one year after the completion of the program courses. The examination normally will be scheduled in the second semester following the student's completion of courses.
- Ph.D. Thesis:
 - The student will normally submit a thesis proposal based on the student's own interests no later than the end of the semester following the completion of comprehensive examinations. The thesis proposal will include a working title, names of preferred Supervisor and two other Committee members, statement of topic, plan of research, statement of methodological and theoretical approach, a brief review of the literature and a preliminary bibliography. The proposal will be circulated to the Department for critical

evaluation on the basis of which the student will be informed, within one month, by the Supervisor, of its acceptance, rejection, or acceptance with recommended changes.

- b. The thesis shall give evidence of the student's ability to carry out independent and original research, develop the necessary theoretical and methodological framework and present the findings in a scholarly manner.

36.15.2 Courses

A selection of the following graduate courses will be offered to meet the requirements of students, normally after consultation with the Head of the Department or the Graduate Studies Administrator, and as far as the resources of the Department will allow. Courses are structured according to the categories of: Theories and Methods, Issues, Form and Performance, Special Topics, Regional, National and International Heritage, Social Identities, Public and Applied Folklore, Interdisciplinary Perspectives and Required (Ph.D.).

- **Theories and Methods**
 - 6010 Survey of Folklore Genres and Processes
 - 6020 Field and Research Methods
 - 6030 Folklore Theories
 - 6040 Feminist Theories: Perspectives and Issues
 - 6080 Vernacular Theories
 - 6090 Ethnology
- **Issues**
 - 6050 Issues in Folkloristics
 - 6060 Issues in Folk Literature
 - 6070 Issues in Folklife
- **Form and Performance**
 - 6100 Song and Music
 - 6120 Ballad
 - 6130 Folk Music Canons and Documentary Sound Recordings
 - 6200 Folktale
 - 6210 Legend
 - 6220 Personal Experience Narrative
 - 6250 Language and Play
 - 6260 Ethnography of Communications
 - 6300 Ethnography of Belief
 - 6310 Health Systems
 - 6350 Custom
 - 6360 Traditional Drama
 - 6370 Ritual, Festival and Public Display
 - 6400 Material Culture
 - 6410 Vernacular Architecture
 - 6420 Art and the Artifact
 - 6430 Food and Culture
 - 6720 Folklore and Literature
- **Special Topics**
 - 6511-29 Special Topics in Folklore
 - 6550 Special Research in Folklore
 - 6551 Indigenous Expressive Cultures in Cross-Cultural Encounter
 - 6552-69 Special Research in Folklore
 - 6570-79 Reading Course in Folklore
- **Regional, National and International Heritage**
 - 6600 Folklore of Newfoundland
 - 6610 Folklore of Canada
 - 6620 Folklore of the United States
 - 6630 Folklore of the British Isles

- 6640 Traditional Culture of Scotland
- 6650 Culture and Traditions of Ireland
- 6660 Folklore of the Francophone Regions
- 6690 International Folklore
- **Social Identities**
 - 6510 Occupational Folklife
 - 6730 Folklore and Gender
 - 6770 The Global and the Local
 - 6780 Ethnicities
- **Public and Applied Folklore**
 - 6380 Perspectives on Cultural Tourism
 - 6740 Public Sector Folklore
 - 6760 Archiving
 - 6790 Museums: Perspectives and Practices
 - 6800 Applied Folklore
- **Interdisciplinary Perspectives**
 - 6700 Folklore and Culture
 - 6710 Oral Tradition and Oral History
 - 6750 Popular Culture: Theory and Debate
- **Required (Ph.D.)**
 - 7000 Advanced Folkloristics I
 - 7100 Advanced Folkloristics II Research and Ethnography

Credit may not be obtained for both 6010 and the former 6110; 6020 and the former 6111; 6030 and the former 6112; 6100 and the former 6430; 6120 and the former 6445; 6300 and the former 6230; 6350 and the former 6230; 6400 and the former 6501; 6720 and the former 6460.

Kenny, Gail

From: Graham Layne <gdlayne@mun.ca>
Sent: November 12, 2020 7:29 AM
To: Kenny, Gail
Subject: Re: Pass with Distinction/Pass with Conditions – SGS Proposed Changes

Gail-

Below is a summary of the discussion and comments from Graduate Studies Committee on the above proposal:

RE: Changes to Calendar Entries governing “Pass with Distinction” and “Pass (subject to conditions)” outcomes of examinations

1) Pass(ed) with Distinction

Changes to SGS General Regulation 4.8 and 4.10 governing “Pass with Distinction” results of examinations

The Committee was in uniform agreement that these changes were appropriate, and approved them.

Several Committee members commented that internal awards granted by individual Departments were a more effective (and, in fact, more prestigious) means of recognizing the merit of exceptional theses.

2) Pass(ed) (subject to conditions)

Changes to SGS Regulation 4.10.4.3g governing “Pass(ed) Subject to Conditions” result of PhD Final Oral Examination

The Committee was in uniform agreement that significant changes were appropriate, especially given the confusing nature of the language for the “Passed Subject to Conditions” entry in the current calendar.

Several Committee members expressed concern that the proposed language remained less than clear with respect to what type or severity of flaw would trigger use of this category, and what would be deemed worthy of a “Re-examination required” result instead.

It was also suggested that the list of which of the result categories would ultimately end up on a student’s transcript should be made explicit in the Calendar and/or the Guidelines distributed to Examiners and Chairs of Examinations.

GDL 2020-11-12