



Faculty of Science

Office of the Dean
St. John's, NL Canada A1B 3X7
Tel: 709 864 8154 Fax: 709 864 3316
deansci@mun.ca www.mun.ca/science

MEETING OF THE FACULTY COUNCIL OF THE FACULTY OF SCIENCE

A regular meeting of the Faculty Council of the Faculty of Science will be held on Wednesday, October 18, at 1:00 p.m. by WebEx and in-person (Room: C- 2045).

AGENDA

1. **Regrets**
2. **Adoption of the Minutes of September 20, 2023** (Pages 2-5)
3. **Business Arising from the Minutes**
4. **Correspondence:** No Correspondence
5. **Benefits of Senate involvement and of how faculty members can get involved:**
Dr. Lee Ann McKivior, University Registrar
6. **NSERC CISE:** Dr. Svetlana Barkanova
7. **Reports of Standing Committees:**
 - A. **Undergraduate Studies Committee:**
Presented by Shannon Sullivan, Chair, Undergraduate Studies Committee
 - a. Department of Mathematics and Statistics – Calendar Change, Amend Course – MATH 2000, Paper 6.A.a. (pages 6-27)
 - b. Department of Chemistry – Special Topics course CHEM 4391, Approved by FOSCUGS and presented to Faculty council for information only, Paper 6.A. b. (pages 28-32)
 - c. Department of Biochemistry – Calendar Changes BIOC 4242 Special Topics in Nutrition –HUBI 4700 Field Stud Nutr Health, Paper 6.A.c. (pages 33-43)
 - d. Department of Biochemistry – Calendar Changes – Human Biosciences 4701 Culture, Food and Health -HUBI 4701 Culture Food Health, Paper 6.A.d. (pages 44-56)
 - B. **Graduate Studies Committee:** No Business
 - C. **Library Committee:** No business
8. **Committee Matrix:** The Committee Matrix is posted on-line ([Committees | Faculty of Science | Memorial University of Newfoundland \(mun.ca\)](#)) for your review and approval. :
9. **Report of the Dean:**
10. **Question Period**
11. **Adjournment**

Travis Fridgen, Ph.D.
Interim Dean of Science



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FACULTY OF SCIENCE FACULTY COUNCIL OF SCIENCE Minutes of Meeting of September 20, 2023

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, September 20, 2023, at 1:00 p.m. using a hybrid model of WebEx and in-person (C-2045).

FSC 3020 Present

Biochemistry

M. Berry, V. Booth, J. Brunton, S. Christian, S. Harding, A. Todd

Biology

D. Bignell, S. Carr, A. Chaulk, A. Hurford, Y. Wiersma

Chemistry

C. Bottaro, L. Cahill, M. Katz, E. Merschrod, S. Pansare, S. Smith, J. Stockmann, H. Therien-Aubin

Computer Science

S. Bungay, L. Careen, N. Esfahani, M. Hatcher, C. Hyde, O. Meruvia-Pastor, V. Prado de Fonseca

Earth Sciences

A. Leitch, A. Malcolm, K. Welford

Mathematics & Statistics

J. Alam, I. Booth, A. Hatefi, R. Haynes, J.C. Loredó-Osti, C. Ou, T. Sheel, S. Sullivan, A. Variyath

Ocean Sciences

I. Fleming, P. Gagnon, E. Ignatz, M. Rise, J. Wroblewski

Physics & Physical Oceanography

V. Borges, E. Hayden, J. LeBlanc, H. Neilson, I. Saika-Voivod, L. Zedel

Psychology

S. Blandford, K. Hourihan, A. Swift-Gallant, C. Thorpe, S. Walling, C. Walsh

Dean of Science Office

J. Blundell, S. Garasym, C. Hussey, S. Dufour, G. Jackson, J. Kavanagh, R. Newhook, P. MacCallum, R. Temple

Student Representatives

E. Dormody, C. Quinn-Nilas, J. Lamarre

Regrets

T. Fridgen

FSC 3021

Adoption of Agenda

Moved: (Loredo-Osti /Bungay) **Carried.**

FSC 3022

Adoption of Minutes

Moved: Minutes of the meeting of September 20, 2023, be adopted. (Sullivan/Katz)
Carried.

FSC 3023

Business Arising:

Shannon Sullivan informed Faculty Council that the 2023-2024 University Calendar is now launched and advised departments to review the individual sections for any issues.

Shannon Sullivan noted the calendar changes for the 2024-2025 calendar should be presented to Faculty Council by the December meeting in order to make the calendar changes in the new university calendar.

FSC 3024

Correspondence: No Report

FSC 3025

Reports of Standing Committees:

A. Undergraduate Studies Committee:

Presented by Shannon Sullivan, Former Chair, Undergraduate Studies Committee

- a. Department of Chemistry – Special Topics Undergraduate Course, CHEM4390 - Special Topics in Physical Chemistry approved by FOSCUGS committee and presented to Faculty Council for information only.
- b. Department of Biology – Special Topics Undergraduate Course, BIOL4917 - Special Topics in Paleolimnology & Long-Term Environmental Change approved by FOSCUGS committee and presented to Faculty Council for information only.

B. Graduate Studies Committee:

Presented by Alison Leitch, Chair, Graduate Studies Committee

- a. Department of Biochemistry - Calendar Changes, – BIOC6590, Cellular, Molecular and Developmental Biology (Leitch/Christian) **Carried.**
- b. Department of Biochemistry - Calendar Changes, BIOC6999, Seminars in Biochemistry and Food Science (Leitch/Christian) **Carried.**
- c. Department of Chemistry, Special Topics Graduate Course, CHEM6382, Selected Topics in Physical Chemistry, approved by the Faculty Council Graduate Studies Committee and presented to Faculty Council for information only.

C. Library Committee: No business.

FSC 3026 Report of the Dean:

The faculty would like to welcome the new faculty, staff, graduate students, and undergraduate students to Memorial and the Faculty of Science. If there is any way the Dean's office can help, please contact us. This year the Dean's office and each of the departments welcomed close to 500 students in person at academic matriculation and orientation. A big thanks to Lawreen Latif, a graduate student who was hired to plan Faculty of Science orientation, as well as Chenal Batuwangala, Suzanne and Carol Sullivan who all ensured that orientation was a big success.

We welcome some new heads to their positions. Dr. Matt Rise has just begun his three-year term as Head of Biology, Dr. Robert Bertolo is the Interim Head of Biochemistry while Dr. Berry is on administrative leave, and Dr. Patrick Gagnon is the Interim Head of Ocean Sciences.

You may have seen the Gazette stories about moving the two remaining seals from the Ocean Sciences Centre. This decision has been made in the best interest of the seals, Tyler and Deane who will be transferred together to a facility where they will have the opportunity to socialize with other marine mammals. The Faculty of Science would like to express our sincere gratitude to the employees and volunteers who generously cared for and enriched the lives of all of the harp seals over the past 3 decades.

The Faculty of Science was the recipient of a generous donation by former Dean of Science Dr. Bob Lucas. This endowment provides funds to help graduate students nearing completion of their program who are in financial need.

We are planning a teaching retreat from 10 am to 3 pm on Tuesday October 10th at the Signal Hill campus. There will be talks and discussions covering topics such as team-based learning, strategies for success of students who were impacted by learning during the COVID-19 epidemic, and the impact of AI on teaching, and more. We urge people to RSVP by September 29th if they plan to attend – you'll be receiving an email very soon with that RSVP request.

Tonight at 5 pm the Faculty of Science is hosting the annual Dean's Awards Ceremony in the whale atrium of the core science facility. We welcome faculty and staff to attend to support our student, faculty, and staff awardees. We ask that you please keep floor seating open for our student, faculty and staff awardees. There is plenty of space for attendees on the second floor that should provide a great view of the event.

NSERC Discovery grants are due soon, reach out if you need help.

Faculty of Science will be proceeding with the 2023-2024 SEA conference with the date to be determined.

FSC 3027**Question Period:**

Dr. Neilson had concerns about applying for USRAs; the amount of funding issued to the students attending conferences; and the unclear due date and last minute changes in applying to the Terra Nova Young Innovator Award, including “unbiased data”. These items raise issues around EDI within the Faculty and he would like to know the Dean’s Office procedures regarding these three concerns. Dr. Blundell indicated that the Dean of Science office will be hosting a Lunch and Learn session in December for potential applicants. While this do not answer the question regarding USRAs, the session will help with future applications. Dr. Blundell also explained the standard funding allowances that the Dean of Science offers students that are travelling to conferences, and referenced other funding sources that students can avail of, including the School of Graduate Studies and MUNSU. Dr. Blundell explained that the Terra Nova Young Innovator Award is an initiative by the VPR’s office and to email her with any concerns regarding the application process.

Dr. Merschrod asked about the cost of the teaching retreat that’s being held at the Signal Hill campus as well as the source of the funding. Dr. Dufour explained this is from an award that Dr. Fridgen received from the President’s office and will find out more information for Dr. Merschrod.

FSC 3028**Adjournment**

Meeting adjourned at 1:25 p.m.

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page for Changes to MATH 2000

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):
- 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: _____

Senate Summary Page for MATH 2000

COURSE NUMBER AND TITLE

MATH 2000 Calculus III

RATIONALE

Executive Summary: The current version of this course was likely developed more than 30 years ago and we feel that it is time for an update. The biggest change is the addition of a unit on computer algebra to provide the students with modern tools for problem solving. The other significant change is a focusing of the sequence and series section on Taylor series and power series: their applications and how they expand the notion of a function. Smaller changes are a little more time spent on complex numbers and some time spent on multivariable Taylor series.

Longer Overview: There are three guiding principles for this revision:

- 1) Modulo very minor modifications, the official syllabus of MATH 2000 is unchanged since at least the early 1990s (and likely a decade before that). It is well past time to re-examine the content of this course and whether it continues to serve the needs of mathematics/statistics students as well as the other user groups (chiefly chemistry, computer science, geophysics, ocean and naval architecture, physics).
- 2) Though calculus hasn't changed in the last 40 years, the world has changed around it. In particular there has been an enormous advance in technology and now there is now widespread availability of general purpose and easy to use mathematical software. Using simple commands, it is easy to take derivatives, do integrals (indefinite, exact definite and numerical definite), solve differential equations (both exactly and numerically), do both symbolic and numerical linear algebra, sum large numbers of terms in series and plot curves and surfaces. Our students should know how to use and these tools.
- 3) Throughout the time that the current version of the course has existed, it has been recognized that it is essentially two unconnected shorter courses: one on sequences and series (7 weeks) and one on calculus of two variables (5 weeks). This split has always been a bit uncomfortable and in particular students found it jarring with the first part much more difficult than the second.

With these principles in mind, we propose the following changes to M2000:

- A) Add (just under) two weeks of class time introducing Sagemath: an open source computer algebra system that can do all the items listed in 1) above. Compared to commercial systems (Maple, Mathematica) it also has the advantage of being Python-based and sharing its syntax. This, combined with the fact that it runs in a Jupyter notebook, has the added benefit of giving students a bit more experience with a popular language and interface.

In the intro classes, Sagemath is introduced as a tool to solve algebraic equations (both exact and numerical), take derivatives, do integrals (both exact and numerical) and solve differential equations (both exact and numerical). This provides students with a powerful tool for mathematical explorations and greatly expands the range of problems that students can consider and tackle in assignment.

Later in the course it is used as a tool to: i) study radius of convergence (plotting high order Taylor polynomials versus the function really highlights convergence issues), ii) study Taylor polynomials for “non-textbook” problems (the ratio test fails in spectacular fashion for problems that can’t really be done by hand), iii) plotting functions of two variables, iv) studying limits of functions of two variables, v) finding and understanding critical points of surfaces. There are other smaller applications as well, but these ones in particular that are much better studied with the help of computer algebra as opposed to relying only on pencil-and-paper calculations, sketches and text-book pictures.

- B) Refocus the Sequences and Series section on Taylor and power series. The traditional version of the course spends about 7 weeks on sequences and series which is about 3 weeks more than most Canadian universities. The new, focused, version: i) introduces Taylor polynomials as approximations of functions, ii) quickly considers convergence of sequences, iii) cuts back the series convergence tests to geometric, ratio, root and alternating series tests (others are mentioned but only to justify the main tests), iv) applies them to Taylor/Maclaurin series, v) introduces power series as a way to generalize the notion of a function, vi) uses those power series to extend common functions to the complex plane and vii) reinterprets the radius of convergence of a power series as the distance to singularities in the complex plane. This material can be covered in just over 4 weeks (as we have done twice in pilot offerings). The introduction of the complex plane and complex functions also helps to link with functions of two variables. For example, the complex plane is a natural place to first discuss Cartesian versus polar coordinates.
- C) Add a couple of lectures on Taylor series of functions of two variables. Apart from being useful in applications, this also ties in very nicely with quadric surfaces, optimizing functions of two variables and helps to link the multi-variable section of the course back to the sequence and series section.

Together all of these changes give MATH 2000 a loose focus on the question of “What is a function?”. Many students come into these courses thinking of functions only as lines, polynomials along with rational, trigonometric and exponential functions. Many courses strengthen this thinking. For example, MATH 1001 really only considers integrals that have exact solutions (ignoring the vast number of functions whose integrals do not take such a form). By introducing numerical integrals and solutions to ODEs through Sagemath, students can easily use built-in routines to plot such functions without having to fully understand the details of the algorithms (they can be studied in later numerical courses for interested students). Then, with power series, the full range of analytic functions becomes available. Extending those power series into the complex plane further extends the notion of a function as does the recognition that functions of two variables can also be written as Taylor series.

ANTICIPATED EFFECTIVE DATE: Fall 2024

CALENDAR CHANGES

Section 13.8.1

Old Calendar Language: Calculus III is an introduction to infinite sequences and series, and to the differential and integral calculus of multivariate functions. Topics include tests for the convergence of infinite series, power series, Taylor and Maclaurin series, complex numbers including Euler's formula, partial differentiation, and double integrals in Cartesian and polar coordinates.

PR: MATH 1001

New Calendar Language: Calculus III is an introduction to infinite sequences and series, and to the differential and integral calculus of multivariate functions. Topics include symbolic and numerical computations in calculus using a computer algebra system, convergence of infinite series, power and Taylor series, complex numbers including Euler's formula and radius of convergence in the complex plane, partial derivatives, optimization and Taylor series for multivariable functions, and double integrals in Cartesian and polar coordinates.

PR: MATH 1001

Appendix for Changes to MATH 2000

CONSULTATIONS SOUGHT

The consultations for this course proceeded in two stages.

- 1) This is a core course for several programs beyond mathematics (including Chemistry, Computer Science, some Earth Science, Ocean and Naval Architecture and Physics) so before we even passed it through the SMUGS (Statistics-Mathematics Undergraduate Studies Committee) we pre-consulted with those units. In the chart below, units that responded to the pre-consultation are labelled with “Yes (PC)”.
- 2) Then after passing it through SMUGS and the Department in Spring 2023 we did a second round of official consultations with responses requested by May 17. Responses to this request are simply labelled “Yes”

Academic Unit	Response Received
Humanities and Social Sciences	Yes
Business Administration	
Education	
Engineering and Applied Science	Yes (PC)
Human Kinetics and Recreation	
Marine Institute	
Medicine	
Music	
Nursing	
Pharmacy	Yes

Academic Unit	Response Received
Science	
Biochemistry	
Biology	
Chemistry	Yes (PC)
Computer Science	Yes (PC)
Earth Sciences	Yes (PC)
Mathematics and Statistics	
Ocean Sciences	
Physics and Physical Oceanography	Yes (PC)
Psychology	
Social Work	
Library	
Grenfell - Arts and Social Science	
Grenfell - Science and the Environment	Yes (PC), Yes
Grenfell - Fine Arts	
Labrador Institute	

Responses to Pre-Consultations:

Chemistry:

Response 1:

Hi Ivan,

Thanks for your email! The course I often teach (CHEM 2301 - Thermodynamics and Kinetics) currently has Math 1001 as a pre-req. I do find students struggle with the differential equations in this course. So adding that to Math 1001 would be really helpful. The computational component for M2000 sounds like a great addition. Some more "real world" experience for the students. I don't feel strongly about the other changes.

I'm not sure how a preliminary consultation works - would you like me to write something more official about my opinion? Also, a couple of my colleagues might be interested in these changes. Dr. Jane Stockmann (tstockmann@mun.ca) and Dr. Heather Reader (hreader@mun.ca). In case you wanted some more opinions! :)

Lindsay S. Cahill

Assistant Professor

Department of Chemistry

Memorial University of Newfoundland

St. John's, NL, Canada

A1B 3X7

Phone: (709)864-7911

From: Booth, Ivan

Sent: January 14, 2022 4:44:07 PM

To: Cahill, Lindsay

Subject: Preliminary consultation on M1001 and M2000

Hello Lindsay,

I'm Ivan Booth from Math (I think you know Valerie Booth – I'm her husband). Our Department is working on revisions to our programs and courses. Right now we are tackling M1001 (the integration course) and M2000 (sequences and series + intro to multivariable calculus). Both these courses are required for Chemistry majors (with M2000 being the last calculus that you require) so we are interested in getting Chemistry's thoughts on how well the courses are serving the needs of your students. We also have a preliminary proposals on how to change these courses so we'd like your first impression on whether these changes would improve or damage what your students need. This is just a preliminary consultation – the official one would come later once we have definite proposals.

***** (MATH 1001 discussion removed) *****

The proposal for M2000 would make slightly larger changes. The current course description reads:

Old 2000: *Calculus III is an introduction to infinite sequences and series, and to the differential and integral calculus of multivariate functions. Topics include tests for the convergence of infinite series, power series, Taylor and Maclaurin series, complex numbers including Euler's formula, partial differentiation, and double integrals in Cartesian and polar coordinates.*

Currently the course spends 7 weeks on sequences and series and then 5 weeks on multivariable. The proposed changes would compress the sequence and series section to 4 weeks (cutting back to the essential topics that you need to get to Taylor series). Of the three weeks that would be freed up, about two would be devoted to a computational component, introducing students to an open source computing environment capable of symbolic and numerical computing. The third would be used to tangent planes, linear approximations and Taylor series for functions of two variables.

New 2000: *Calculus III is an introduction to infinite sequences and series, differential and integral calculus of functions of multivariate functions and doing calculus on a computer. Topics include symbolic and numerical computations in calculus using an open source computing environment, convergence of infinite series, power series, Taylor and Maclaurin series, complex numbers including Euler's formula, partial derivatives, optimization and Taylor series for multivariable functions, and double integrals in Cartesian and polar coordinates.*

As I said, we're still a few weeks from having a concrete proposal that will be sent for official consultation, so this is just to get a preliminary reaction on how you feel that this would affect your students.

Best,
Ivan

Response 2:

Hi Ivan,

Your email was forwarded to me via Lindsay Cahill. I am on the undergrad committee here, so will defer my formal comments to after the formal proposal comes across our desks.

However, from a first glance, I think that all of these changes would be beneficial to our Chem majors. I think differential eqns. in 1001 and the comp section in 2000 both sound like good additions. Multivariate is important to me (but I'll admit, I didn't understand any of it until grad school when I used it in physical oceanography).

What is the open source program you intend to use for the computational part? I didn't do any numerical modeling until grad school again (computational methods in marine ecology), and I would have benefitted from a previous intro I think. Computational work I think is really good to be introduced to for all science majors.

I don't anticipate anyone at the Chemistry department will have an issue with these changes (but no promises.)

Cheers,
Heather

Heather E. Reader PhD

Assistant Professor
Canada Research Chair in Chemistry of the Ocean and Atmosphere
Department of Chemistry
Memorial University of Newfoundland

Computer Science:

----- Forwarded message -----

From: Ronald Haynes <rhaynes74@gmail.com>

Date: Jan 14, 2022, 12:28 PM -0330

To: Mark Hatcher <mhatcher@mun.ca>, Sharene Bungay <sharene@mun.ca>

Subject: Re: review of calculus sequence

Hi Mark - as you can see, we don't have a specific proposal at this stage, just reaching out informally to understand what material you need.

Sincerely,

Dr. Ronald D. Haynes
Professor, Department of Mathematics and Statistics
Chair, MSc and Phd Scientific Computing Programs
Memorial University of Newfoundland

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.

On Jan 14, 2022, 12:15 PM -0330, Mark Hatcher <mhatcher@mun.ca>, wrote:

Hi Ron, Hi Sharene,

Understood. I'll make sure that the UGS committee and relevant faculty look at the sequences and series aspect, as well as the other potential changes.

Cheers,

Mark

Mark Hatcher
Deputy Head for Undergraduate Studies

Department of Computer Science
Memorial University of Newfoundland
St John's, Newfoundland

On Jan 14, 2022, at 12:05 PM, Ronald Haynes <rhaynes74@gmail.com> wrote:

Hi Sharene (and Mark!), would be useful to know a little more about what in particular you need in terms of sequences and series. Right now it takes up more than 1/2 of M2000, I would imagine that some of this material is useful for you guys.

Sincerely,

Dr. Ronald D. Haynes
Professor, Department of Mathematics and Statistics
Chair, MSc and Phd Scientific Computing Programs
Memorial University of Newfoundland

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On Jan 14, 2022, 12:00 PM -0330, Sharene Bungay <sharene@mun.ca>, wrote:

Hi Ron,

Happy New Year to you!

Based on the summary of potential changes that you've listed, nothing stands out to me as being problematic in terms of what we would want CS students to have covered from their Math courses. I've copied our Deputy Head (Undergraduate Studies), Mark Hatcher, here in case he has anything to add at this stage. Our UGS committee, as well as faculty who teach courses with Math 1001 or 2000 as prerequisites, may have comments as well, so we will consult with them.

Looking forward to seeing the proposals, the changes look interesting.

Sharene.

Sharene Bungay (she/her) | Office: EN-2019
Interim Department Head | [Email: sharene@mun.ca](mailto:sharene@mun.ca)
Department of Computer Science | Phone: (709) 864-6945
Memorial University of Newfoundland | Web: www.cs.mun.ca/~sharene

On Jan 14, 2022, at 11:27 AM, Ronald Haynes <rhaynes74@gmail.com> wrote:

Hi Sharene - happy new year! We are beginning a preliminary review of our undergrad courses including some of the 1st and 2nd year courses that are taken by students in your unit.

At this point there is no official proposals for changes, just doing a preliminary "checking-in" with affected units (see message below).

Hope to hear from you soon.

R Haynes

I am writing because your departments have these courses in the list of required courses for some of your degree programs.

We are currently considering proposing some changes to Math 1001 (Integral Calculus) and Math 2000 which are part of your programs.

In the case of M1001 (Integral Calculus) we are discussing the idea of reducing the coverage of the relatively lengthy section on volumes and minimizing the coverage of some of the more obscure integrals (powers of tangents and powers of secants etc.) Replacing this will be an increase in the coverage of differential equations. This will be quite useful to those students who end their math sequence with M1001.

M2000 currently covers sequences, series, and the Calculus of multivariable functions. We are proposing to streamline the sequences and series presentation, increase the coverage of Taylor series and multivariable approximation techniques using tangent planes and linear multivariable polynomials. In addition the course will introduce a computational component, introducing students to an open source computing environment capable of symbolic and numerical computing.

At this point your general thoughts will help guide the conversation and, of course, any proposals will come back to your unit during official consultations.

Sincerely,

Dr. Ronald D. Haynes
Professor, Department of Mathematics and Statistics
Chair, MSc and Phd Scientific Computing Programs
Memorial University of Newfoundland

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.

Earth Science:

Hello Ron,

I have been dismayed by the mathematical illiteracy of some of our 3rd year students, who have all taken M1000 and M1001.

Some need a refresher on basic algebra (their excuse "Haven't used it since high school"). Also, in the meaning of first and second derivatives.

For our students, it would be good to see lots of physical examples of derivatives and differential equations, e.g., gradients and curvature in elevation and temperature, heat flow through a wall, decay of radioactive elements. Flow in rivers and aquifers. Maybe the relationship between electric field and voltage?

Most of them don't appreciate the abstract beauty of mathematics, alas, and not seeing concrete examples in their field of study gives them the excuse to flush their brains after the exam.

The changes you suggest in the syllabus look good to me.

Cheers,

Alison

--

Alison Leitch
Associate Professor, Geophysics
Department of Earth Sciences
Memorial University
St John's NL A1B 3X5

Physics:

Hello again Ivan,

I'm not sure when our next meeting is going to be, so here's something to tide you over: Rick's response from about a week ago after my last email to you. The response is probably reflective of our general take on things

(forwarded with permission).

"I think that these are good changes. Doing some ODE's is a really good idea and series stuff does get tedious.
As for Sage, it is too bad we couldn't all agree on a common platform but I guess it will always be that way."

Rick was replying to

I just had a chat with Ivan Booth after he emailed about getting pre-consultation feedback on some possible changes to M1001 and M2000.

Math is doing a review of their undergrad curriculum and Ivan Booth is sort of leading the charge. They are concerned about dropping numbers of math majors, and hope to include more computer work in their courses. Ivan thinks more experience with computers would be beneficial to the employability of the average graduate.

Their course M2130, a computational project-based writing course, is sort of their computational base, sort of a mix of P2820 and P3800.

In M1001, they are thinking of removing material on solids of revolution in favour of two weeks on first-order separable ODE's, which might play well with our new P1051 material on the LRC-alphabet of circuits, and probability.

In M2000, they want to reduce time spent on sequences and series from 7 weeks to 4 weeks. 4 weeks seems to be the norm at other places. Ivan says that in those 4 weeks, they'll cover probably the same stuff that we (physicists) covered in 1st/2nd year wrt series (tests of convergence etc). They want to keep a focus on Talyor series. His initial question regarding M2000 was what we would want in terms of topics covered on sequences and series.

They'd replace the 3 weeks of material with 2 weeks on using Sage to do the computational stuff. They'd "also pull some material back from vector calculus into M2000 (tangent planes and linear approximations) and do a little bit of multivariable Taylor series."

Since they are reviewing the whole undergrad curriculum, more such questions will be coming up.

Cheers,
Ivan

Ivan Saika-Voivod, Professor
Department of Physics and Physical Oceanography, Memorial University of Newfoundland
Tel: 709-864-8886, Fax: 709-864-8739, <http://www.physics.mun.ca/~saika/>

On Jan 26, 2022, at 12:58 PM, Booth, Ivan <ibooth@mun.ca> wrote:

Thanks Ivan,

It's good to know. We're moving along with this, so depending on when your meeting is we may have something more concrete by then.

Ivan

From: Ivan Saika Voivod <saika@mun.ca>
Date: Wednesday, January 26, 2022 at 12:44 PM
To: Ivan Booth <ibooth@mun.ca>
Subject: Re: A bit more detail on M2000 (and 1001)

Hi Ivan,

Len will put an item in our next Dept. meeting. Not sure when that will be. I don't anticipate strong feedback.

Feedback from the few people to whom I've disseminated this has been positive (1 person - with the comment about how do you spend 7 weeks on series?) or non-existent (4 people copied on my email to Len about it).

I can prod people on our undergrad studies committee if you need more substantive feedback sooner.

Cheers,
Ivan

On Jan 14, 2022, at 4:48 PM, Booth, Ivan <ibooth@mun.ca> wrote:

Hello Ivan,

Here's are some more details on the proposed changes (adding in a proposal for M1001). Talk to you on Monday – we can use my WebEx room: <https://mun.webex.com/meet/ibooth>

Ivan

*****. *Email that I sent to Physics removed: it's the same as the one to Chemistry* *****

Engineering (Ocean and Naval):

----- Forwarded message -----

From: Qiu, Wei <giuw@mun.ca>

Date: Jan 14, 2022, 2:45 PM -0330

To: Ronald Haynes <rhaynes74@gmail.com>, Dobre, Adrian <adobre@mun.ca>

Cc: George, Glyn <glyn@mun.ca>, Peters, Dennis <dpeters@mun.ca>

Subject: Re: review of 1st/2nd year math courses

Hi Ron,

Thanks for reaching out to us.

For MATH1001, I feel it would be helpful to have adequate coverage on calculation of area, volume and their centroids through integration, as ONAE students will use them a lot in later terms. Feedback from our instructors indicates our students need more knowledges in these areas. I support your changes on minimizing the coverage of some of the more obscure integrals and increasing the coverage of differential equations.

With respect to MATH2000, I also support your changes. The increase of coverages on Taylor series and the computational components are particularly helpful to ONAE students.

Thanks again for your initiative. Have a good weekend.

Wei

From: Ronald Haynes <rhaynes74@gmail.com>
Date: Friday, January 14, 2022 at 1:57 PM
To: "Dobre, Adrian" <adobre@mun.ca>
Cc: "George,Glyn" <glyn@mun.ca>, Dennis Peters <dpeters@mun.ca>, Wei Qiu <qiuw@mun.ca>
Subject: Re: review of 1st/2nd year math courses

Thanks Adrian for the best point of contact.

Dr. George and Dr. Peters, please pass on any initial comments at this early stage.

Sincerely,

Dr. Ronald D. Haynes
Professor, Department of Mathematics and Statistics
Chair, MSc and Phd Scientific Computing Programs
Memorial University of Newfoundland

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.

On Jan 14, 2022, 1:24 PM -0330, Dobre, Adrian <adobre@mun.ca>, wrote:

Happy New Year to you too, Ron.

Dr. George and Dr. Peters are best people to get involved in the review.

Since MATH 2000 is taken only by the Ocean and Naval Architectural Engineering students, Dr. Wei Qiu (the head of the department) can also give you some feedback.

All three are copied to this email.

Cheers,

Adrian

Adrian Dobre

Coordinator - Cahill Engineering One Student Success Centre

Faculty of Engineering & Applied Science, Memorial University

St. John's, NL Canada A1B 3X5

Tel: 709 864 4639 Fax: 709 864 8011 adobre@mun.ca

Room: EN 3076

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From: Ronald Haynes <rhaynes74@gmail.com>
Date: Friday, January 14, 2022 at 11:26 AM
To: "Dobre, Adrian" <adobre@mun.ca>
Subject: review of 1st/2nd year math courses

Hi Adrian - happy new year! Who are the best people in engineering to involve in this discussion as we begin a review of our first year Calculus sequence?

At this point there is no official proposals for changes, just doing a preliminary "checking-in" with affected units

Hope to hear from you soon.

R Haynes

I am writing because your departments have these courses in the list of required courses for some of your degree programs.

We are currently considering proposing some changes to Math 1001 (Integral Calculus) and Math 2000 which are part of your programs.

In the case of M1001 (Integral Calculus) we are discussing the idea of reducing the coverage of the relatively lengthy section on volumes and minimizing the coverage of some of the more obscure integrals (powers of tangents and powers of secants etc.) Replacing this will be an increase in the coverage of differential equations. This will be quite useful to those students who end their math sequence with M1001.

M2000 currently covers sequences, series, and the Calculus of multivariable functions. We are proposing to streamline the sequences and series presentation, increase the coverage of Taylor series and multivariable approximation techniques using tangent planes and linear multivariable polynomials. In addition the course will introduce a computational component, introducing students to an open source computing environment capable of symbolic and numerical computing.

At this point your general thoughts will help guide the conversation and, of course, any proposals will come back to your unit during official consultations.

Sincerely,

Dr. Ronald D. Haynes
Professor, Department of Mathematics and Statistics
Chair, MSc and Phd Scientific Computing Programs
Memorial University of Newfoundland

Grenfell: School of Science and the Environment *(this email was followed by a couple of online meetings to discuss the proposed changes)*

Hi Ivan,

Thanks so much for reaching out. We're very keen to be in on these conversations. I'm CCing Olga Vasilyeva

and Nguyen Lam, who regularly teach 1001/2000/2260; they'd be happy to join the discussion from here.

Thanks!

Rebecca

Rebecca Milley, PhD

Chair, Computational Mathematics
Grenfell Campus, Memorial University of Newfoundland
Corner Brook, NL, Canada
(709) 639-2596 AS 3011

From: Booth, Ivan <ibooth@mun.ca>
Sent: Thursday, April 7, 2022 5:21 PM
To: Milley, Rebecca <rmilley@grenfell.mun.ca>; Bailey, Robert F. <rbailey@grenfell.mun.ca>
Cc: gcox@mun.ca <gcox@mun.ca>
Subject: Changes to the Calculus Sequence (M1001, M2000, M2260, M3202)

Hello Rebecca and Robert,

I'm chairing the subcommittee here in St. John's that is looking at revising the various courses in the calculus/differential equations sequence. I think Graham sent along the proposed changes to M1001 that recently passed our Departmental meeting. I'll start by apologizing for not consulting with Grenfell before we took that to the Department. It was an oversight on my part.

That said we also have proposed changes for M2000 and M2260 that are fairly well-developed but which have not yet left the UGS committee. I think it would be good to have a cross-campus discussion on them before we take them further. I have attached the proposals in their current form but very roughly the changes are:

M2000: Cut the amount of time spend on sequences and series to about 4 weeks (we currently spend about 7 in St. John's). Introduce the use of computational/exploratory tools (we propose SageMath which is an open-source competitor to Maple/Mathematica). This would be about 2 weeks. Add in tangent planes and multivariable Taylor series (about a week).

Responses to Official Consultations:

Grenfell: School of Science and the Environment

Note: *Following this email we had an online meeting in which we came to an agreement on the current course description for the Calendar.*

Hi Ivan,

I'm so sorry this is so late! Robert sent me a summary of the unit's feedback and then I was travelling and forgot to send it to you. Here is our feedback!

The mathematics faculty at Grenfell Campus met on May 2 to discuss the Department of Mathematics and Statistics' proposal to revise MATH 2000 at the St. John's campus. A subset of the mathematics faculty then met with Dr. Ivan Booth on May 8 to raise concerns expressed in the May 2 meeting.

Overall, we find that many of the proposed changes are positive, and in some cases reflect the manner in which the course is already being taught at Grenfell Campus: for instance, we typically do not spend as large a portion of time on sequences/series as appears to have been the case St. John's, and some instructors have also been incorporating computational tools for 3D plotting of functions of several variables.

However, concern was expressed that the phrasing of the proposed Calendar entry could lead to a lack of flexibility. In particular, we found the sentence "Emphasis will be placed on calculus done both by hand and using a computer". While we appreciate the Department's reasons for wanting to add a computational emphasis to the course, including this in the Calendar entry could be unnecessarily restrictive. We suggest removing this sentence to allow instructors (on both campuses) a little more discretion.

While the make-up of the enrolment in MATH 2000 is quite different between the two campuses (for example, we have no Engineering or Computer Science students enrolled at Grenfell), we feel that it is important for students that MATH 2000 remains transferable between campuses (for students moving in either direction). Furthermore, having similar courses with different numbers makes writing degree regulations very complicated. So we are hopeful that a common course description for MATH 2000 can be agreed upon. Should this be the case, a secondary Calendar change will be needed to amend the wording of the course description for MATH 2000 in the Grenfell Campus section of the Calendar.

Rebecca Milley, PhD

Chair, Computational Mathematics
Grenfell Campus, Memorial University of Newfoundland
Corner Brook, NL, Canada
(709) 639-2596 AS 3011

Humanities and Social Sciences:

Dear Ivan:

Thanks for this. No issues here.

Best wishes
Norm

Norm Catto (ret)
Acting Associate Dean Curriculum and Programmes HSS
Memorial University
864-4083

From: Frew, Rose Mary <rmfrew@mun.ca>
Sent: Monday, April 17, 2023 12:05 PM
To: Catto, Norm <ncatto@mun.ca>
Subject: For your review - FW: Consultation: Changes to MATH 2000 - Calculus III

Please send comments to ibooth@mun.ca by May 17.

Best,
Ivan Booth (he/him)
Deputy Head (Undergraduate)
Department of Math and Stats
Memorial University

Pharmacy:

Hello Ivan,

Thank you for the opportunity to comment on the proposed changes. Pharmacy has no concerns with the updating of the Calculus III course as it will not impact our students or programs.

Thanks,
Erin

--

Dr. Erin Davis BSc (Pharm), PharmD
Associate Dean Undergraduate Studies
Associate Professor
Memorial University School of Pharmacy
T 709 864 8815
E emdavis@mun.ca

From: Booth, Ivan <ibooth@mun.ca>

Sent: Monday, April 17, 2023 10:12 AM

To: Furey, Edith <efurey@mun.ca>; Faculty of Humanities and Social Sciences <hss@mun.ca>; Oldford, Erin <eoldford@mun.ca>; engrconsult@mun.ca; HKR Dean <hkrdean@mun.ca>; deanofmedicine@med.mun.ca; musicdean <musicdean@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; Library Correspondence <univlib@mun.ca>; kjacobse@grenfell.mun.ca; ssedean@grenfell.mun.ca; pride@grenfell.mun.ca; miugconsultations@mi.mun.ca; Ashlee Cunsolo <ashlee.cunsolo@mun.ca>

Subject: Consultation: Changes to MATH 2000 - Calculus III

Hello Everyone,

The Math and Stats Department proposes to update the course content of MATH 2000 (Calculus III) to better reflect the needs of our students and the computational tools that are now available. This email is to consult and seek feedback on the proposed changes (attached). Please send comments to ibooth@mun.ca by May 17.

Best,

Ivan Booth (he/him)
Deputy Head (Undergraduate)
Department of Math and Stats
Memorial University

LIBRARY REPORT

Thank you for this Ivan. The changes will not have any impact on the library. We will continue to support your students as needed.

I do want to provide you with a bit of a heads up – your new course description is 83 words, which is a bit long. The SCUgS guidelines have an limit of 75 words.

Kathryn

From: Library Correspondence <univlib@mun.ca>
Sent: September 19, 2023 12:12 PM
To: Rose, Kathryn <kathrynr@mun.ca>
Subject: FW: Revisions to MATH 2000

From: Booth, Ivan <i Booth@mun.ca>
Sent: Monday, September 18, 2023 9:57 PM
To: Library Correspondence <univlib@mun.ca>
Cc: Booth, Ivan <i Booth@mun.ca>
Subject: Revisions to MATH 2000

Hello Library,

The Department of Mathematics and Statistics has passed changes to our Mathematics 2000 course (Calculus III). These changes are attached. I think that we are supposed to consult you on any course changes. However I will note that this change is a shift in emphasis in the course rather than a complete change. In particular we will continue to use the current textbook so I don't think that the changes should not require any change in library holdings. If you have any questions, I'm happy to discuss.

I will look forward to your report.

Best Regards
Ivan Booth (he/him)
Deputy Head (Undergraduate)
Department of Math and Stats
Memorial University

RESOURCE IMPLICATIONS

This is an update of an existing course. There are no resource implications.

ADDITIONAL INFORMATION

Extra Course Details

Mathematics 2000 – Calculus III

Calculus III is an introduction to infinite sequences and series, and to the differential and integral calculus of multivariate functions. Emphasis will be placed on calculus done both by hand and using a computer. Topics include symbolic and numerical computations in calculus using a computer algebra system, convergence of infinite series, power and Taylor series, complex numbers including Euler's formula and radius of convergence in the complex plane, partial derivatives, optimization and Taylor series for multivariable functions, and double integrals in Cartesian and polar coordinates.

Prerequisites: Mathematics 1001

Potential Instructors: Any mathematics faculty member (the current version is taught by many different people at different times).

Textbooks and References: Possible text books include:

1. Calculus (9th edition) by Stewart, Clegg and Watson, Brooks Cole 2020
2. Calculus (7th edition) by Hughes-Hallett, Gleason, McCallum et. al. , Wiley 2017.

Both are standard texts. Currently we use Stewart for the entire calculus sequence (1000, 1001, 2000, 3202) and it would be fine for this revision as well, though it will need to be supplemented with instructor notes for the computer algebra, some of the complex numbers and the multivariable Taylor series.

Hughes-Hallett is an alternative which includes multivariable Taylor series and is, perhaps, a little more computer algebra friendly. However, it these are probably not sufficient reasons to switch.

Evaluation Scheme: The mark distribution used in Winter 2023 was:

- a) Problem sets: 0%
- b) Quizzes: 10%
- c) Assignments: 10%
- d) Project: 10%
- e) Midterm: 20%
- f) Final Exam: 50%

The problem sets and their solutions were made up during Fall 2022/Winter 2023 and will be reusable in the future. These are relatively routine homework problems to prepare students for the quizzes (there were five of these). The assignments include more complicated questions and often require the use of computer algebra (there were three of these). For the project students worked in groups and prepared a five-minute (recorded) presentation on a more complicated problem that we assigned to them. The midterm and final were traditional tests.

Schedule (approximately 33 lectures)

Chapter 1 : Introduction to Computer Algebra (~ 5 lectures)		Stewart	Hughes-Hallett
1.1	Arithmetic in Sagemath	Notes	Notes
1.2	Algebra in Sagemath	Notes	Notes
1.3	M1000 using Sagemath	Notes	Notes
1.4	M1001 using Sagemath	Notes	Notes
1.5	Introduction to differential equations	Notes	Notes
Chapter 2: Taylor polynomials and series (~ 13 lectures)			
2.1	Taylor polynomials and approximations	11.10-11.11	10.1, 10.4
2.2	Infinite sequences	11.1	9.1
2.3	Infinite series: introduction	11.2	9.2, 9.3
2.4	Infinite series: convergence tests	11.3-11.6	9.4
2.5	Power series and Taylor series	11.8-11.10	9.5, 10.2, 10.3
2.6	Complex numbers and Taylor Series	Appendix H + Notes	Appendix B + Notes
Chapter 3: Differential calculus of two variables (~ 10 lectures)			
3.1	Polar coordinates	10.3 + Notes	16.4 + Notes
3.2	Functions of two variables	14.1	12.1 - 12.3
3.3	Limits and continuity	14.2	12.6
3.4	Partial derivatives	14.3	14.1, 14.2
3.5	Tangent planes and approximations	14.4	14.3
3.6	Taylor series of two variables + quadric surfaces	Notes	14.7 + Notes
3.7	Extremal values for functions of two variables	14.7	15.1
3.8	Chain rule	14.5	14.6
Chapter 4: Integral Calculus of two variables (~ 5 lectures)			
4.1	Double integrals over rectangles	15.1	16.1, 16.2
4.2	Double integrals over general regions	15.2	16.2
4.3	Double integrals in polar coordinates	15.3	16.4

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 4391
- 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 4391 SPECIAL TOPICS IN PHYSICAL CHEMISTRY

ABBREVIATED TITLE

POLYMER MATERIALS

RATIONALE

Polymers are widely employed both as commodity materials and for specialty applications. Commodity materials include plastics such as polyethylene, or acrylic coatings. Polymers designed for specialty applications find application in diverse areas such as photoresists for microelectronic device fabrication, or microgels for drug delivery and other biomedical applications. In this course, students will be introduced to concepts of polymer structure and architecture, and how those properties affects the behavior of polymer solutions and melts, and polymers in the solid state.

This course will be offered alongside a selected topics graduate course, CHEM 6382. The intent is to offer this course for undergraduate students without requiring special sign-in permissions, such that it would meet the requirements of a 4000-level course without using a course substitution. We currently do not offer any undergraduate or graduate courses in Polymer Chemistry and this would be the first time a course covering this topic is offered.

CALENDAR CHANGES

N/A

CALENDAR ENTRY AFTER CHANGES

N/A

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	None
Business Administration	None
Education	None
Engineering and Applied Science	None
Human Kinetics and Recreation	None
Marine Institute	None
Medicine	None
Music	None
Nursing	None
Pharmacy	None
Science	
Biochemistry	None
Biology	None
Computer Science	None
Earth Sciences	Yes
Mathematics and Statistics	None
Ocean Sciences	None
Office of the Dean	None
Physics and Physical Oceanography	None
Psychology	None
Social Work	None
Library	None
Grenfell - Arts and Social Science	None
Grenfell - Science and the Environment	None
Grenfell - Fine Arts	None

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

Sent: Tuesday, June 27, 2023 5:06 PM

To: Katz, Michael <mkatz@mun.ca>

Subject: Re: Chemistry - Special topics - Calendar Change Proposals

Hi Mike,

These courses look great. I wish that I had the time to take them.

As Chair of the Earth Sciences Department's Undergraduate Matters Committee, I have no comments on these proposals.

Cheers,
Penny

--

Penny Morrill, Ph.D. (Pronouns: She/her)
Professor, and Deputy Head (Undergraduate)
Department of Earth Sciences
Memorial University of Newfoundland
St. John's, NL A1B 3X5
Canada
phone: (709) 864-6729
fax: (709) 864-2589
Webpage: <https://www.esd.mun.ca/wordpress/deltasresearch/>

RESOURCE IMPLICATIONS

This is a new special topics course with the intent being that it be cross-listed alongside the graduate course CHEM 6382. No new teaching resources will be required. Teaching workloads have been embedded within the current teaching allocations.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSAL

Chem 4391: Polymer materials

Instructor Information

Instructor	Email	Office Location and Hours
Dr. Heloise Therien-Aubin	htherienaubin@mun.ca	CSF 3340

General Information

Lecture Times:	3 lecture hours / week
Labs:	NO LABS are associated with this course

Course Description:

Polymers are widely employed both as commodity materials and for specialty applications. Commodity materials include plastics such as polyethylene, or acrylic coatings. Polymers designed for specialty applications find application in diverse areas such as photoresists for microelectronic device fabrication, or microgels for drug delivery and other biomedical applications. In this course, students will be introduced to concepts of polymer structure and architecture, and how those properties affects the behavior of polymer solutions and melts, and polymers in the solid state.

Prerequisite:

CHEM2301, MATH2000

Course Material and Resources**Texts (no textbook is required for this course)****Recommended textbooks on this subject:**

- Rubinstein and Colby. Polymer Physics. Oxford University Press. 2007.
https://mun.primo.exlibrisgroup.com/permalink/01MUN_INST/1f101eq/alma99221919102511

Evaluation

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

	<u>CHEM 4391</u>	<u>CHEM 6382</u>
Participation	10%	10%
Assignments	20%	20%
Term Paper	30%	20%
Presentation	-	10%
Midterm	15%	15%
Final Exam	25%	25%
Total Evaluation	100%	100%

Evaluation notes: (1) Participation is based on active discussions during lecture and peer presentations, problem solving, and in class group work. (2) Term paper – 6000 level will be approximately double the length of 4000 level. (3) Assignments and presentations - the details will be discussed during class and instructions will be posted on Brightspace. (4) Full details of course evaluations will be discussed during class the first class.

Course Topics (Tentative)Polymer in the solid state

- Phase transition in polymer materials
- Effect of glass transition on polymer properties
- Mechanical properties of polymers and time-temperature superposition

Polymer in solution

- Flory-Huggins theory
- Rheological behavior

Polymer characterization

- Molecular weight, structure and microstructure
- Phase separation and self-assembly
- Mechanical properties

Polymer processing

- Extrusion, molding
- Film formation and coating

Learning Outcomes

- Identify and describe different polymer structures (or structural elements) and understand how the structure affects the properties of a polymer in solution and in the solid state.
- Understand different techniques used to characterize polymer materials in the solid state and in solution.
- Understand different techniques to determine molecular weights and molecular weight distribution of polymers

Memorial University of Newfoundland

Undergraduate Calendar Change Proposal Form

Senate Summary Page for Courses

COURSE NUMBER AND TITLE

Biochemistry 4242 Special Topics in Nutrition

REVISED COURSE NUMBER AND TITLE

Human Biosciences 4700 Field Studies in Nutrition and Health

ABBREVIATED COURSE TITLE

HUBI 4700 Field Stud Nutr Health

RATIONALE

Biochemistry 4242 has been offered twice (Spring 2022 and Spring 2023) as a Special Topics course and has received resounding support from the students. It grew from an enrolment of 10 in 2022 to 16 in 2023. We intend to offer this course every Spring in the foreseeable future; this is a proposal to regularize the course so its description is included in the Calendar.

The aim of the course is to provide experiential learning using resources related to food, nutrition and health that are not available in our local region or at any of the other Memorial campuses. Within a reasonable distance from the Harlow campus exists a variety of facilities that offer learning opportunities relevant to students in the Human Biosciences program that spans food and human health, agricultural and processed food production, and laboratory-based techniques to study human nutrition.

The course is offered in the Spring semester to students who have completed at least 4 semesters; priority will be given to students enrolled in the Human Biosciences program. The course may also be of interest to students completing the Certificate in Food Studies (Humanities and Social Sciences), or those in Biology or Kinesiology with an interest in human nutrition. Human Biosciences 2002 (or Biochemistry 2600) - Introduction to Human Nutrition is the prerequisite course, which has an enrolment of 500+ students per year; this prerequisite provides an ample-sized pool of eligible students.

The primary objective of the course is to enrich the students' understanding of the relationships between food, nutrients and human health through exposure to practical experiences. A secondary objective is to enhance the writing and communication skills of the students through feedback on assignments. In addition, the course will provide students with an international learning experience that may serve to encourage students to consider graduate studies or employment opportunities abroad.

ANTICIPATED EFFECTIVE DATE

As soon as possible.

CALENDAR CHANGES

HUBI 4700 Field Studies in Nutrition and Health is an experiential learning course comprised of a series of field trips broadly related to nutrition, medicine, and health. Examples of experiences include visits to nutrition/health research centres, agriculture and sustainable food production facilities, and organizations or events focused on nutrition/health education for the population. Evaluations will focus on writing and communication skills, with opportunities to create innovative educational material using a variety of media.

OR: this course has a field component at Harlow Campus for up to three weeks

CR: Biochemistry 4242

PR: HUBI 2002 (or Biochemistry 2600) or permission from the instructor

CALENDAR ENTRY AFTER CHANGES

HUBI 4700 Field Studies in Nutrition and Health is an experiential learning course comprised of a series of field trips broadly related to nutrition, medicine and health. Examples of experiences include visits to nutrition/health research centres, agriculture and sustainable food production facilities, and organizations or events focused on nutrition/health education for the population. Evaluations will focus on writing and communication skills, with opportunities to create innovative educational material using a variety of media.

OR: this course has a field component at Harlow Campus for up to three weeks

CR: Biochemistry 4242

PR: HUBI 2002 (or Biochemistry 2600) or permission from the instructor

SECONDARY CALENDAR CHANGES

None

**Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page**

CONSULTATIONS SOUGHT*

Academic Unit	Response received?
Chemistry	
Computer Science	
Math and Stats	
Ocean Sciences	Yes
Psychology	
Biology	
Physics	
Computer Science	
Education	Yes
Humanities and Social Sci	Yes
Human Kinetics and Rec	
Pharmacy	Yes
Nursing	Yes
Arts and Soc Sci (Grenfell)	
Marine Intitute	
Medicine	
Business	Yes

*consultation request was sent on Sept 19, 2023 with a response deadline of Oct 16th. Responses up to Sept 29th are [appended](#).

LIBRARY REPORT

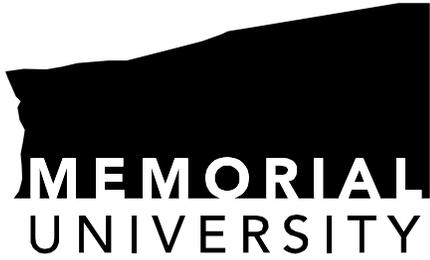
A library report was prepared for the course when offered as a Special Topics course and is appended to this proposal.

RESOURCE IMPLICATIONS

This course will incur additional costs to the students, but is cost neutral to the University, the academic unit (Biochemistry) and the Faculty of Science.

The estimated costs to the student associated with this course include:

- 1) Return airfare to London from St. John's
- 2) Accommodations at Harlow Campus £127.75 (~\$216.00 CAD) per week for shared accommodation (includes an evening meal).
- 3) A program fee of \$1000 to \$1200 per student to cover course-related ground transportation in the UK, admission fees to field sites, and the travel costs for two instructors. The Harlow Campus provides accommodations for instructors as in-kind support.



Collection Development Division
Queen Elizabeth II Library

1 October 2019

To: Janet Brunton, Department of Biochemistry
From: Erin Alcock, Science Research Liaison Librarian
Subject: New Course Proposal, Special Topics: BIOC 4242 Field Studies in Food and Nutrition

I have reviewed the new course proposal for BIOC 4242 – Field Studies in Food and Nutrition and I have determined that the Memorial University Library system has more than adequate resources to support the objectives of this course.

While the physical collections of MUN Libraries will not be of use to students studying at Harlow Campus, there are thousands of electronic books in our collection that can be access remotely, on top of the extensive periodical holdings that cover this subject area.

Sample Course Outline From Spring 2023

Field Studies in Nutrition and Health

Course Description

Field Studies in Nutrition and Food will incorporate field trips that are focused on aspects of nutrition and food that are not currently core parts of our nutrition curriculum. The approach can be divided into three subcategories: Farm to Fork Food Systems; Food, Nutrition and Health; and Modern Nutrition Research. The list of field trips will be confirmed when the course commences.

The course will be comprised of **two weeks** of intensive field trip studies, scheduled near the beginning of the course, and based out of the Harlow Campus of Memorial University (Harlow, UK). During each of the field trips, the students will collect information (ie. photos, research notes) that will become the basis for writing assignments that will be evaluated during and after the Harlow period. During the stay at Harlow, the students will be required to do preparatory work for various site visits and submit a mini-assignment (daily blog, learning reflection, interpretation etc.) related each field trip. Following the stay at Harlow, students will complete most of the course assignments, including the submission of a photo-story and a research paper (described below).

The course will have a timeframe that would include two weeks at Harlow, followed by a 7 week period to allow for the development and completion of the assignments (details given below).

PREREQUISITE

HuBi 2002 (or BIOC 2600) or permission by the instructor

COURSE INSTRUCTORS (*In 2023 the instructors were Bertolo and Harding; however, in subsequent years it may be any two of the following*):

Dr. R. Bertolo

Office: CSF 4239

rbertolo@mun.ca

Dr. J. Brunton

Office: CSF 4238

jbrunton@mun.ca

Dr. S. Harding

Office: CSF 3235

sharding@mun.ca

Dr. Z. Farahnak

Office: CSF 4242

zfarahnak@mun.ca

Office Hours: During the stay at Harlow Campus, the professors will be on-site and will interact daily with students for group and one-on-one meetings. For the remainder of the course, a minimum of two hours of contact time a week is TBD; instructors will be also available by appointment.

If you wish to email either instructor, please put the course name/number in the subject line or your email may be deleted automatically as spam. **Do NOT use D2L/Brightspace to send course-related emails**, as it is checked less often and you are unlikely to receive a prompt reply. The instructors will endeavour to reply to emails within 48 hours (excluding weekends and holidays).

EVALUATION

Food/Grocery Assignment (Groups)	20% (<i>Assignment attached</i>)
Daily Assignments (Individual/Groups)	20% (<i>Detailed Descriptions Attached</i>)
Creative Story Assignment	20%
Research Paper (5%+10+25%)	40%
Total:	100%

Daily Preparation, Surveys & Written Impressions (20%)

There will be a daily short assignment, worth 1 to 3%. These will be in the form of:

- A survey or quiz related to an assigned reading, website visit or video to be watched specifically to prepare for each site visit and/or to support the experiential learning activity. The expectation is that the assigned activity will be **completed prior to the day of the activity**.
- A short written “impression” on some aspect of the day.
- A “trip advisor” or “yelp” style blog on something visited that day.
- An organized debate on a topic related to one or more field trips.

Keep an eye on the Brightspace page for each days’ activity.

Food/Grocery Assignment (20%) DUE: May 24th

See the assignment with instructions attached. This is a group assignment.

Creative Story with Visual Media Assignment (20%) DUE: June 20th

This assignment will allow you focus on some theme broadly related to food and/or nutrition. It should be a creative story that is communicated using any form of visual media, **and must include information or highlights from at least three of the planned site visits**. Students can decide on their theme and then develop a creative piece to communicate the theme. The instructors would be delighted to help the students narrow the theme for their assignments. When students have picked a theme, it should be approved by one of the instructors.

Grades will be awarded based on integration of the theme and the degree of thoughtful “engagement” with the assignment.

RESEARCH PAPER (40% Total; 5% outline, 10% full draft, 25% final)

The research paper topic will be decided in consultation with the instructors, based on some aspect of food or nutrition that is related to one or more of the field trips. Examples might include the validity of methods of collecting nutrient intake data by researchers doing community health surveys, or the impact of climate change on some aspect of food security, or the problem of fish fraud and its economic or health impacts. The paper will be 2000 words in length, not including references. **The instructors will assist the students in finding appropriate literature and resources to develop the paper; the paper must be supported by AT LEAST 5 primary research papers.**

The students have the choice of doing the paper in stages, with feedback from the instructors.

Stage 1: An outline of paper including a reference list (5%). **DUE by June 30th.**

Stage 2: A full draft of the paper will be submitted for review by an instructor to provide feedback (10%). **DUE July 24st.**

Stage 3: Full paper submission. **DUE Aug 4th.**

Alternatively, if students do not want to take advantage of feedback from the instructors, the full paper is due August 4th and is worth 40% of the course grade.

Late Assignments

Assignments that are not submitted by the due date cited above will be accepted up until the end of the day on August 9th, but will be graded out of 80% of the original value. Assignments will not be accepted after August 9th, and will be graded as zero.

Additional Policies / Supports

Commitment to Accommodation

Memorial University of Newfoundland is committed to fostering equitable and accessible learning environments for all students. Accommodations for students with disabilities are provided in accordance with the [Accommodations for Students with Disabilities Policy](#) and its related procedures. Students who feel that they may require formal academic accommodations to address barriers or challenges they are experiencing related to their learning are encouraged to contact [Accessibility Services \(the Blundon Centre\)](#) at the earliest opportunity to ensure any required accommodations are provided in a timely manner. You can contact Accessibility Services (the Blundon Centre) by emailing blundon@mun.ca.

Safe, Equitable and Inclusive Learning

In line with the Newfoundland and Labrador Human Rights Act, this course aims to provide a safe, equitable and inclusive learning environment regardless of race, colour, nationality, ethnic origin, social origin, religious creed, religion, age, disability, disfigurement, sex (including pregnancy), sexual orientation, gender identity, gender expression, marital status, family status, source of income or political opinion. **If any student feels this has not been achieved, and that they, or others, are/could be negatively impacted, please contact me.** All conversations are confidential.

Academic Integrity

Academic integrity means taking full responsibility for the academic work you submit for your courses so that your instructors can evaluate you on the basis of your own understanding and effort. It means being honest and honourable in all academic pursuits, even in difficult circumstances. Students are expected to know and avoid academic offences; ignorance of an offence is not an acceptable excuse for committing it. Penalties could include reprimand, reduction of grade, probation, suspension, or expulsion from the University. For more information, you may refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar, revisit the INTG 1000 course in Brightspace, and/or see the [undergraduate page about academic integrity](#).

Recordings

With the exception of provisions made for students with special needs, all other recording of visual and/or audio content in sessions is restricted and must be approved by the instructor.

Your Health

There is nothing more important than your mental and physical health. Doctors' notes are **not** required for medical absences in this course. You are encouraged to seek appropriate medical attention from the Student Wellness and Counselling Centre. I am committed to working with students with pre-existing medical and mental health needs, as well as new needs that may arise within the semester. I encourage you to reach out to the Blundon

Centre as early as possible to discuss any adjustments you think may be necessary in this course. Let's explore the options to help you succeed, no matter what is going on.

Additional Supports

Memorial University offers a broad range of supports, both academic and general in nature. These include, but are not limited to: Student Wellness and Counselling Centre, Student Support and Crisis Management, Student Parent Assistance & Resource Centre, The Circle: First Nations, Inuit & Métis Students Resource Centre, and the International Students Resource Centre. Full listings and links to these and other supports can be found at www.mun.ca/student/ and <https://www.munsu35.ca/resource-centres/>.

You may also wish to reach out to the many [Student Clubs and Societies](#) which can help you deepen learning in your discipline or pursue your interests outside the classroom and get connected with others.

Navigate App for Student Success

Students are encouraged to download the Navigate app from Apple or Google Play by searching "Navigate Student". The app provides information around dates and deadlines, allows students to book appointments with various advisors and support services, and can help establish study groups within courses using the Study Buddies feature. Please note that if you cannot access the app, a desktop version is available at <https://mun.guide.eab.com/app>.

Summary of Field Trips, Activities and Assignments (Extracted from the course website to append to this proposal) (60% of the course grade)

15-May Brogdale Collections: Heritage Fruit Collection, <https://brogdalecollections.org/>

16-May British Museum; Wellcome Museum Special Milk Exhibit, <https://wellcomecollection.org/exhibitions/Y8VNbhEAAPJM-oki>

Corresponding Assignment: Please answer the following two questions related to our visit to the British Museum and the Wellcome Collection. Submit your responses as either a document attachment or as an link to an online document (Google Doc or Jamboard or self-created webpage).

Identify (using photos) and briefly describe 5 items in the British Museum collection that relate to food, nutrition, cooking, or agriculture.

After reading the ianVisits article on the milk exhibit at the Wellcome Collection, explain why you agree or disagree with their opinions (maximum 250 words).

17-May Billingsgate Fish Market Tour and Seafood School; Borough Market

Corresponding Assignment: Based on your tour of the Billingsgate Fish Market, list 5 fish or other seafood species that you are not familiar with being caught or sold in Newfoundland and Labrador. Briefly explain how they are prepared or meant to be eaten.

Identify the most interesting, unique, or exotic 1) fruit, 2) vegetable, 3) dairy, and 4) meat the you can find at the Borough Market. Include how each is meant to be prepared and/or consumed.

18-May Denbies Wine Estate; Alcohol Debates (Harlow Campus)

Corresponding Assignment: Based on your visits to the National Fruit Collection at Brogdale and Denbies Winery, discuss the positive and negative effects of climate change on agriculture (particularly fruit crops) in the United Kingdom? Explain whether these changes/effects would have any impact on Newfoundland and Labrador agriculture.

19-May Cambridge University

Corresponding Assignment: Following your trip to the City of Cambridge and University of Cambridge, write a 50 word Trip Advisor-style review of your visit. You do not need to post it to Trip Advisor's website, just in the dropbox.

22-May Science Museum (Medicine Exhibit); Nutrition Research at King's College

Corresponding Assignment: Create 3 slides and write a mini-lecture (slide notes, a few sentences) on any single display at the Medicine: The Wellcome Galleries exhibit at the Science Museum

Summarize the "take-home" message from each of the research talks at the Department of Nutritional Sciences (2-3 sentences per take-home).

24-May Rothamsted Research Institute (<https://www.rothamsted.ac.uk/>); Hunterian Museum

Corresponding Assignment: Describe a specimen in the collection at the Hunterian Museum that demonstrates a pathology related to a nutritional disease or deficiency

25-May Gordon Pathology Museum; Coffee Talk Tour

Corresponding Assignment: Describe a specimen in the collection at the Gordon Museum that demonstrates a pathology related to a nutritional disease or deficiency (but NOT the same disease/deficiency as you chose for the Hunterian)

26-May McMullen Brewery

Corresponding Assignment: Comment on the key differences between breweries in NL and UK, with respect to legislation, ingredient sourcing, distribution, and competition (max word count of 250 words).

ALCOHOL AND HEALTH DEBATES (Team Activity)

DEBATE #1

The Canadian Centre on Substance Use and Addiction recently issued new guidance on alcohol consumption for Canadians.

Team 1a - Support the current Canadian Centre on Substance Use and Addiction guidelines for alcohol consumption for Canadians.

Team 2a - Support (and recommend) the current UK guidance on healthy alcohol consumption for Canadians.

DEBATE #2

Alcohol sales and consumption should be banned from university campuses.

Team 1b - Pro and Team 2b – Against

Food/Grocery Assignment – Due Wed May 24

This assignment is worth 20% of the course grade.

Prior to departing for the UK, spend some time at a Newfoundland supermarket, and take notes and photos to address the questions below. After arriving in Harlow, visit the Tesco grocery store (or any UK grocery store to address the questions below.

The learning objectives of this assignment are to highlight similarities and differences in:

- i) the price of some common foods in the UK and Canada
- ii) the packaging of some common foods, including size and nutrition labeling of healthy or not-so healthy foods
- iii) the physical layout of supermarkets, and how that might influence purchasing habits
- iv) mandatory fortification of common foods

Questions:

1) Plant-based eating has become a common recommendation in many countries including the UK and Canada. Describe some of the novel processed products that can be found in the Tesco Supermarket that would support a higher plant-based and/or vegetarian diet, and compare what you find to the types of products that are currently available in Newfoundland. Feel free to include photos. (4 marks)

2) Choose one dairy product, one fresh meat product, one plant-based protein/meat alternative, one fresh fruit or vegetable, one can of soup, and one jar of peanut butter, and for each, answer the following questions:

- a. Compare product/package sizes and types of packaging that are most common in the two locations.
- b. How do the product prices compare to prices back home? Be very specific in terms of equivalent weights or volumes. Presenting this information in table format might be useful. (5 Marks)

3) Based on what you learned in Bioc2600, find TWO food products that have mandatory nutrient fortification in Canada, but appear to have DIFFERENT levels of fortification or no fortification in the UK. Find ONE food product that is nutrient fortified in the UK, but not in Canada. (5 marks)

4) After doing some quick research online, explain why eggs in the UK can be kept at room temperature, whereas Canadian eggs must be refrigerated. (2 marks)

5) When Drs. Brunton and Bertolo first moved to Newfoundland, they were surprised by the size of the “bologna aisle” in the grocery stores. Describe something about the Tesco supermarket (or any large UK grocery store) layout or offerings that you noted was different or surprising compared to what you see at home, and comment on whether you think it is better or worse for the consumer in terms of nutrition/health or grocery budgets, or any other aspect. (4 marks – strict 250 word limit)

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

COURSE NUMBER AND TITLE

Human Biosciences 4701 Culture, Food and Health

ABBREVIATED COURSE TITLE

HUBI 4701 Culture Food Health

RATIONALE

This is a new course with content related to cultural and medicinal aspects of traditional foods that will be offered in part from the Harlow Campus. Course material will be delivered to students who will simultaneously experience some of the ethnic communities that exist within the London, UK region.

The aim of the course is to expose students to varied ethnic food environments, such that they may gain an understanding of the sociocultural importance of foods, and be able to identify some of the biocultural factors that have led to specific food and dietary patterns, including the use of medicinal foods. The course strategy is to supplement traditional learning (ie reading and lecture material) with experiential learning, by taking advantage of the ethnic mosaic of communities in and around the Harlow Campus, mostly in the greater London area.

Our department launched its first Harlow-based experiential learning course in Spring 2022, and offered it again in Spring 2023 with a 60% increase in enrollment. The course was a Special Topics course - Biochemistry 4242 Field Experiences in Food and Nutrition - but is in the process of being regularized to Human Biosciences 4700. Exit interviews with students after both offerings indicated a strong interest in the opportunity to complete more than one course through the Harlow campus during the Spring semester. To this end, our intention for this course is to have two weeks of field experiences that follow the completion of the field experiences for BIOC 4242/HUBI 4700. The remaining 8 weeks of the semester will be used for remote interaction with students as they complete a series of assessments related to the field experiences and course material.

The course will be offered in the Spring semester to students who have completed at least 4 semesters; priority will be given to students enrolled in Human Biosciences (or Biochemistry (Nutrition) programs). The course may also be of interest to students completing the Certificate in Food Studies (Humanities and Social Sciences), or those in Biology or Kinesiology with an interest in human nutrition. Human Biosciences 2002 (formerly Biochemistry 2600) - Introduction to Human Nutrition is the prerequisite course, which has an enrolment of 500+ students per year; this prerequisite provides an ample-sized pool of eligible students.

This course will be the second Harlow-based course offered in the Human Biosciences program, but plans for a third course are currently in progress, with the objective to ultimately be able to offer a full “study abroad” semester to students in our major.

ANTICIPATED EFFECTIVE DATE

Before registration for Spring 2024 semester.

CALENDAR CHANGES

HUBI 4701 Food, Culture and Health is an experiential learning course comprised of a series of field trips to expose students to a variety of ethnocultural food environments. Students will learn about the sociocultural importance of foods and how biocultural factors have led to specific food and dietary patterns, including medicinal foods. Evaluations will focus on writing and communication skills.

OR: this course has a two to three-week field component at Harlow Campus

PR: HUBI 2002 (or Biochemistry 2600) or permission from the instructor

CALENDAR ENTRY AFTER CHANGES

HUBI 4701 Food, Culture and Health is an experiential learning course comprised of a series of field trips to expose students to a variety of ethnocultural food environments. Students will learn about the sociocultural importance of foods and how biocultural factors have led to specific food and dietary patterns, including medicinal foods. Evaluations will focus on writing and communication skills, with opportunities to create innovative educational material using a variety of media.

OR: this course has a two to three-week field component at Harlow UK Campus

PR: HUBI 2002 (or Biochemistry 2600) or permission from the instructor

SECONDARY CALENDAR CHANGES

None

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response received?
Chemistry	
Computer Science	
Math and Stats	
Ocean Sciences	Yes
Psychology	
Biology	
Physics	
Computer Science	
Education	Yes
Humanities and Social Sci	Yes
Human Kinetics and Rec	
Pharmacy	Yes
Nursing	Yes
Arts and Soc Sci (Grenfell)	
Marine Intitute	

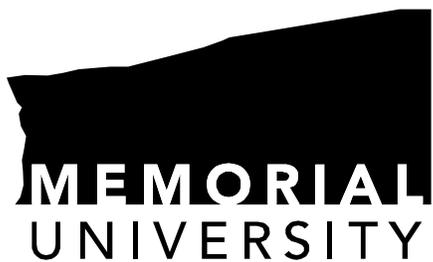
*consultation request was sent on Sept 19, 2023 with a response deadline of Oct 16th. Responses up to Sept 29th are [appended](#).

LIBRARY REPORT

A library report has been requested

RESOURCE IMPLICATIONS

This course will incur additional costs to the students, but is cost neutral to the University, the academic unit (Biochemistry) and the Faculty of Science.



The estimated costs to the student associated with this course include:

- 4) Return airfare to London from St. John's*
- 5) Accommodations at Harlow Campus £127.75 (~\$216.00 CAD) per week for shared accommodation (includes an evening meal).
- 6) A program fee of \$1000 to \$1200 per student to cover course-related ground transportation in the UK, admission fees to field sites, and travel costs for two instructors. The Harlow Campus provides accommodations for instructors as in-kind support.

*Note: Students will have the option to do at least two courses in Human Biosciences, which will help offset travel costs.

Collection Development Division

Queen Elizabeth II Library

Library report to come

Sample Course Outline
Culture, Food and Health
Human Biosciences 4701

Course Description

The aim of the course is to expose students to varied ethnic food environments, such that they may gain an understanding of the sociocultural importance of foods, and be able to identify some of the biocultural factors that have led to specific food and dietary patterns, including the use of medicinal foods. The course strategy is to supplement traditional learning (ie reading and lecture material) with experiential learning, by taking advantage of the ethnic mosaic of communities in and around the Harlow Campus, mostly in the greater London area.

The course will be comprised of **two weeks** of intensive field trip studies, scheduled near the beginning of the semester, and based out of the Harlow Campus of Memorial University (Harlow, UK). During each of the field trips, the students will collect information (ie. photos, research notes, interview notes) that will become the basis for writing assignments that will be evaluated during and after the Harlow period. During the stay at Harlow, the students will be required to do preparatory work for various site visits and submit a mini-assignment (daily blog, learning reflection, interpretation etc.) related to each field trip. Following the stay at Harlow, students will complete most of the course assignments, including a media assignment and a research paper (described below).

The course will have a timeframe that includes two weeks at Harlow, followed by a 7-week period to allow for the development and completion of the assignments (details of assignments and examples of field trips are provided below).

PREREQUISITE

HuBi 2002 (or BIOC 2600) or permission by the instructor

Human Biosciences faculty members who may serve as course intructors:

Dr. R. Bertolo

rbertolo@mun.ca

Dr. J. Brunton

jbrunton@mun.ca

Dr. S. Harding

sharding@mun.ca

Dr. Z. Farahnak

zfarahnak@mun.ca

Dr. Shyam Mayengbam

smayengbam@mun.ca

Dr. Sukhinder Cheema

skaur@mun.ca

Office Hours: During the stay at Harlow Campus, the professors will be on-site and will interact daily with students for group and one-on-one meetings. For the remainder of the course, a minimum of two hours of contact time per week is TBD; instructors will be also available by appointment.

If you wish to email either instructor, please put the course name/number in the subject line or your email may be deleted automatically as spam. **Do NOT use D2L/Brightspace to send course-related emails**, as it is checked less often and you are unlikely to receive a prompt reply. The instructors will endeavour to reply to emails within 48 hours (excluding weekends and holidays).

EVALUATION

Emigration and Food Traditions (Group Assignment)	25%
Daily Assignments (Individual/Groups)	25%
Creative Media Assignment	20%
Research Paper (5%+5%+20%)	30%
Total:	100%

Daily Assignments (25%)

There will be a daily short assignment, worth 1 to 3%. These will be in the form of:

- A commentary or summary of an assigned reading, website visit or video
- preparation for a site visit and/or to support the experiential learning activity. The expectation is that the assigned activity will be **completed prior to the day of the activity**.
- A short written “impression” on some aspect of the day.
- An organized debate on a topic related to one or more field trips.

Note that the daily assignments may vary depending on the site visits that are organized as the course is set up each year.

Emigration and Food Traditions Presentation (Group Work) (25%)

Groups of 3 to 4 students will be assigned to research one ethnic group/population that has emigrated in relatively large numbers to London, UK. The students will research the history of the migration (when and why did they move?), the current social and economic situation that appears to exist for many who emigrated, and the food traditions of the community. Students will present an overview of the ethnic group’s existence in London; it should include the history, current quality of life indicators, and food traditions (ceremonial/religious etc), that have been maintained or modified after immigrating – plus any other relevant information. The presentation must be aided by Power Point-type slides, and should be 20 to 30 minutes in duration. The presentation will be followed by a short Q & A session with class members. All group members must be actively involved in the presentation.

Creative Education Tool Assignment (20%)

The objective of this assignment is to create some form of **education tool that targets a general audience**. It can be created using any form of visual media. Students can decide on the theme/content, but it should be related broadly to the course content. The instructors would be delighted to help the students narrow the theme for their assignments. When students have picked a theme, it should be approved by one of the instructors. *Students will be reminded of this assignment as the field trips are ongoing, and instructors will identify potential*

themes. *It may be something like an education tool for a new immigrant to show them how to access a service or use public transit, or a video to introduce a new culture to UK school children.*

Grades will be awarded based on the theme and the the degree of thoughtful “engagement” with the assignment (ie. did the student give it a good try, or slap something together at the end of the course).

RESEARCH PAPER (30% Total: 5% outline, 5% full draft, 20% final)

The research paper topic will be decided in consultation with the instructors, based on some aspect of food or nutrition that is related to one or more of the field trips. Examples might include the validity of methods of collecting nutrient intake data by researchers doing community health surveys, or the unique health or nutrient deficiency issues identified within a population. The paper will be 1500 – 2000 words in length, not including references. ***The instructors will assist the students in finding appropriate literature and resources to develop the paper; the paper must be supported by AT LEAST 5 primary research papers.***

The students have the choice of doing the paper in stages, with feedback from the instructors.

Stage 1: An outline of paper including a reference list (5%).

Stage 2: A full draft of the paper will be submitted for review by an instructor to provide feedback (5%).

Stage 3: Full paper submission (20%)

Alternatively, if students do not want to take advantage of feedback from the instructors, the full paper is worth 30% of the course grade.

Late Assignments

Assignments that are not submitted by the due date will be accepted up until the last day of classes, but will be graded out of 80% of the original value. Assignments will not be accepted after the last day of classes, and will be graded as zero.

Additional Policies / Supports

Standard as per the Faculty of Science guidelines – will be added in full to the final course syllabus.

HuBi 4701 Examples of Field Experiences

(to be finalized during the course preparation in 2024)

- **Chinatown** – Food as medicine focus – will provide some background on traditional dietary practices for health and medicinal foods. When in Chinatown, students will seek out shops to observe whether they can find evidence of stores supporting medicinal food practices.
- **Jewish Museum** – Organize a tour that provides an overview of Kosher Food Laws and history of kosher eating. Follow it up with eating at a well-known Jewish restaurant.
- **Halal Eating** – Provide background on Islamic Food Laws; looking for a resource for an overview of Halal eating (<https://halalfoodguy.co.uk/about-me/>)
- **Other ethnic communities** that may be included in the field experiences (all have concentrated areas in London): Caribbean, West African, South Asian (subdivided by country or religion), other Asian groups (Thai, Korean, Vietnamese....).
- **Waitrose Kitchens** - Cooking class (multiple offerings of various types of ethnic dishes) with an underlying theme of how food practices may have had to be modified with the move to a new country.
- **Docklands Museum of London** – The “Sugar Triangle”– what is the sugar triangle and how did it support the economies of Britain and America, and even Newfoundland. Supported by resources available from Docklands Museum and online from the Museum of America History and the British Museum.
- **Museum of Brands** – How the most popular food products have evolved in the UK over the past 100 years. Demonstrates the rise in processed and ultra-processed foods as a growing part of the British diet.
- **Hampton Court – Tudor Kitchens** – Historical look at food available and preparation
- **The British Library Food Series** (<https://www.bl.uk/events/food-season>) – Annual series of talks and events that usually include one or two on cultural aspects of food.
- **The New Spitalfields Fruit and Vegetable Wholesale Market** – What specialty items are destined for specific communities? One branch of the market business is focused on public outreach and collaborates with City Harvest London to handle and distribute donated food

Consultation request - two new Human Biosciences course

You forwarded this message on 9/19/2023 4:07 PM

HUBI 4700 Field Stud Nutr Health.pdf759 KB HUBI 4701 Food Culture and Health.pdf762 KB

Good Afternoon,

I have attached two proposals for new courses in the Human Biosciences program for your review; both courses include a stay at the Harlow Campus.

Human Biosciences 4700 (Field Studies in Nutrition and Health) has been previously reviewed as a Special Topics course (Bioc 4242); This proposal is to regularize the course after two successful offerings.

Human Biosciences 4701 Food, Culture and Health is a new course. It was created to take greater advantage of resources in and around the Harlow campus and will allow students to complete two courses during their stay in the UK.

I would appreciate receiving your feedback by Oct 17.

Comments should be sent to biocDHundergrad@mun.ca

Thank you very much!

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland

phone 709 864-8533 fax: 709 864-2422

Wed 9/20, 9:40 AM

HUBI 4700 Field Stud Nutr Health.pdf^{759 KB}HUBI 4701 Food Culture and Health.pdf^{762 KB}

Thank you for the opportunity to review these course change proposals. These changes should not impact pharmacy students or programs and therefore we have no concerns.

Erin

--

Erin Davis, BSc(Pharm), PharmD

Associate Professor | [School of Pharmacy](#)

Associate Dean, Undergraduate | [School of Pharmacy](#)

Chair, Committee on Undergraduate Studies | [School of Pharmacy](#)

Clinical Assistant Professor | [Faculty of Medicine, Discipline of Family Medicine](#)

Memorial University of Newfoundland and Labrador

School of Pharmacy

Health Sciences Centre

300 Prince Phillip Dr. | Rm H3443

St. John's NL | A1B 3V6

T 709 864 8815 | F 709 864 6941

Wed 9/20, 1:13 PM

Hi All,

I fully support these courses. These are an excellent learning tool for students. The schedule and the learning objectives are fully laid out as are the examining procedures.

I also teach at our Harlow campus during the spring semester. As we move forward with these courses I think just a few things may need to be considered - Biology/Ocean Sciences also teaches in spring (2 courses 2 weeks each) Usually starting last week of April/first week of May. Will these courses run at the same time, after, or maybe before? It may be a consideration for available space for students and instructors as we develop more courses at Harlow. Is there a minimum enrollment needed for these courses to go ahead? In our Biology/OS courses we usually need a minimum of 11-12 to make travel costs (mainly buses) work for the

students.

I look forward to seeing these courses coming to fruition and becoming a staple of the Harlow campus.

Iain McGaw

--

Professor
Department of Ocean Sciences
0 Marine Lab Road
Memorial University
St John's, NL
Canada
A1C 5S7
Tel: 709 864-3272
Fax: 709 864-3220

BiocDHundergrad

Hi Iain,

Thanks for your supportive feedback on the new course proposals.

We have tentatively booked space for the courses in May, but because the new course hasn't been approved yet in any form, we haven't completely figured out the timing or manpower aspects of the offerings. The Admin staff at Harlow is working on space allocation for the Spring 2024 courses now, so Biology should reach out to Beau if you haven't already done so.

Cheers,

Janet

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland

phone 709 864-8533 fax: 709 864-2422

Oldford, Erin

Thu 9/21, 10:26 AM

Thank you for opportunity to review your proposal.

We think it is very relevant and innovative, and we commend you for your efforts. We see no direct impacts on Business, but we are certain there will be positive impacts on students as well as other units.

One minor point:

I did notice that HUBI 4700 includes a description in “resources” to explain that it is cost neutral to the faculty. I don’t see that section in HUBI 4701 and I am thinking that it should be there.

Best,

ERIN OLDFORD, PhD (she/her)
Associate Dean of Undergraduate Programs and
Accreditation,
Associate Professor of Finance, and
Faculty Advisor to The Fund
Faculty of Business Administration
Memorial University of Newfoundland
St. John’s, Newfoundland & Labrador
www.business.mun.ca

Fri 9/22, 12:55 PM

Hi Erin,

Thank you for reviewing our proposals, and noting the oversight of the resource statement. I will add it before it goes forward for approval.

Regards,

Janet

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland

phone 709 864-8533 fax: 709 864-2422

BiocDHundergrad

Pike, April

Thu 9/21, 4:44 PM

Thank you for this opportunity.

I do not have any concerns with the courses however, would remove the clause (ie. did the student give it a good try, or slap something together at the end of the course).

Regards,

April

Fri 9/22, 12:53 PM

Hi April,

Thank you for reviewing the new course proposals. I agree with your suggestion and will remove the phrase in the next version of the proposal.

.....
Janet Brunton, PhD
Professor and Deputy Head (Undergraduate)
Department of Biochemistry
Memorial University of Newfoundland

phone 709 864-8533 fax: 709 864-2422

From: Dold, Patricia <pdold@mun.ca>
Sent: Friday, September 29, 2023 12:30 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>
Subject: Re: Consultation request - two new Human Biosciences courses

Dear Colleagues,

HSS supports these two new courses.

P Dold

Associate Dean, Curriculum and Programs