MEMORIAL UNIVERSITY

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, November 20 at 1:00 p.m. by WebEx and in-person (Room: C- 2045).

AGENDA

1. **Regrets**
2. **Adoption of the Minutes of June 19, 2024** (pages 3-5)
3. **Business Arising from the Minutes**
4. **Correspondence:** No Correspondence
5. **Reports of Standing Committees**:

A. Undergraduate Studies Committee:

Presented by Shannon Sullivan, Chair, Undergraduate Studies Committee

a) Departments of Biology and Psychology (co-op), Proposal: Individualized Joint Honors Program BIOL and PCOP, approved by the Faculty of Science Undergraduate Committee and present to Faculty Council for information only, Paper 5 A. a. (page 6)
b) Department of Biology, BIOL 3050 Calendar Change Proposal, Paper 5 A. b. (pages 7-11)
c) Department of Biology, BIOL 3709 Proposal Description & PRs, Paper 5 A. c. (pages 12-16)
d) Department of Biology, BIOL 3711 Calendar Change for Consultation, Paper 5 A. d. (page 17-23)
e) Department of Biology, BIOL 3712 Proposal to Cross List OSCS, Paper 5 A. e. (pages 24-28)
f) Department of Biology, BIOL 4050 Proposal Title Change, Paper, 5 A. f. (pages 29-32)
g) Department of Biology, BIOL 4052 Proposal Removal of Activity, Paper 5 A. g. (pages 33-37)
h) Department of Biology, BIOL-STAT Joint Honours Proposal – Remove CHEM 2401, Paper 5 A. h. (pages 38-41)
i) Department of Biology, MNBL Proposal MATH 1006 OSCS 3710, 3711, Paper 5 A. i. (pages 42-46)
j) Department of Computer Science, COMP 2001, 2002, 2003 Prerequisite Change, Paper 5 A. j. (pages 47-52)
k) Department of Computer Science, COMP 2004-2008 PR Restriction, Paper 5 A. k. (pages53-58)
l) Department of Computer Science, COMP Concentrations, Paper 5 A. l. (pages 59-67)
m) Department of Computer Science, COMP Program Eligibility Math Requirement, Paper 5 A. m. (pages 68-72)
n) Department of Computer Science, COMP Program Eligibility Numerical Grade Requirement, Paper 5 A. n. (pages 73-77)
o) Department of Computer Science, COMP Introduction to Human-Computer Interaction, Paper 5 A. o. (pages 78-83)

p) Department of computer Science, COMP CS-Physics Joint program COMP Course Change (joint Major / Joint Honours), Paper 5 A. p. (pages 84-89)

~~q) Department of Mathematics and Statistics, MATH 4130 Prerequisite Changes, Paper 5 A. q. (pages 90-94)~~

~~r) Department of Mathematics and Statistics, MATH 4340 and 4341 Prerequisite change, Paper 5 A. r (pages 95-98)~~

~~s) Department of Mathematics and Statistics, AMAT/COMP, COMP/PMAT, COMP/MATH Joint Major and Honours, Paper 5 A. s. (pages 99-108)~~

~~t) Department of Mathematics and Statistics, ECON – MATH Major Revision, Paper 5 A. t. (pages 109-115)~~

~~u) Department of Mathematics and Statistics, MATH-PHYS Major and Honours Revision, Paper 5 A. u. (pages 116-123)~~

~~v) Department of Mathematics and Statistics, STAT 2500 Course Update, Paper 5 A. v. (pages 124-130)~~

~~w) Department of Mathematics and Statistics, STAT 3521, 3585, 4530 Prerequisite Changes, Paper 5 A. w. (pages131-143)~~

~~x) Department of Psychology, Complete calendar change proposals, Paper 5 A. x. (pages 135-362)~~

B. Graduate Studies Committee:

Presented by Adrian Fiech, Chair, Graduate Studies Committee

a) Department of Biochemistry, Special Topics Course, BIOC-6002, Introduction to Applied Computational Chemistry, approved by the Faculty of Science Graduate Committee and present to Faculty Council for information only, Paper 5 B. a. (pages 363-395)

b) Department of Chemistry, Special Topics Course, CHEM-6496, Advanced Analytical Techniques in Organic Chemistry, approved by the Faculty of Science Graduate Committee and present to Faculty Council for information only, Paper 5 B. b. (pages 395-401)

c) Department of Earth Science, Request for Approval of a Graduate Course EASC 6173; An Introduction to Potential Field, Electrical and Electromagnetic Methods, Paper 5 B. c. (pages 402-405)

d) Department of Mathematics and Statistics, Core Course Proposed Calendar Changes, Paper 5 B. d. (pages 406-408)

e) Department of Psychology, Course deletions, Paper 5 B. e. (pages 409-411)

f) Department of Psychology, Calendar Change to 32.19.1 to add Health and Wellness specialization area, Paper 5 B. f. (page 412)

C. Library Committee: No business

6. Committee Matrix: The committee Matrix is posted on-line (Committees | Faculty of Science | Memorial University of Newfoundland) for your review and approval.

7. IT Structure in Faculty of Science

8. Research Week Activities

9. Report of the Dean

10. Question Period

11. Adjournment

Travis Fridgen, Ph.D.
Interim Dean of Science

MEMORIAL UNIVERSITY

Faculty of Science

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Tel: 709 864 8154 Fax: 709 864 3316
deansci@mun.ca www.mun.ca/science

FACULTY OF SCIENCE
FACULTY COUNCIL OF SCIENCE
Minutes of Meeting of June 19, 2024

A meeting of the Faculty Council of the Faculty of Science was held on Wednesday, June 19, 2024 at 1:00 p.m. via WebEx.

FSC 3067 **Present**

Biochemistry
R. Bertolo, V. Booth, S. Christian

Biology
M. Rise

Chemistry
C. Bottaro, H. Grover, E. Mershrod, S. Pansare

Computer Science
S. Bungay, A. Draskoy, A. Fiech, C. Hyde, T. Tricco

Mathematics & Statistics
C. Cigsar, D. Dyer, R. Haynes, J.C. Loredo-Osti, Armin Hatefi, T. Sheel, A. Shestopaloff, T. Stuckless, S. Sullivan, H. Usefi , Y. Yilmaz

Ocean Sciences
P. Gagnon, J. Wroblewski

Physics & Physical Oceanography
D. Coombs, H. Neilson, I. Saika-Voivod, M. Wilson

Psychology
S. Blandford, D. Hallett, K. Hourihan, C. Thorpe

Dean of Science Office
J. Blundell, J. Bowering, M. Fitzpatrick, T. Fridgen, L. Frizzel, C. Hussey, G. Jackson, J. Kavanagh, P. MacCallum, J. Major, T. Mackenzie, R. Newhook, D. Nichols, N. Squires

Student Representatives
B. Hussey, W. Kinden

Regrets
S. Dufour

FSC 3068 **Adoption of Minutes**
Moved: Minutes of the meeting of April 24,2024 be adopted. (Sullivan/Sheel)
One Abstention. Carried.

FSC 3069 **Business Arising from the Minutes:**
Correspondence was received on May 22, 2024 saying that the government is fully funding the proposal for the PsyD program.

FSC 3070 **Correspondence:** No Report

FSC 3071 **Reports of Standing Committees**:

A. **Undergraduate Studies Committee**:
Presented by Shannon Sullivan, Chair, Undergraduate Studies Committee

a) Department of Mathematics and Statistics – Calendar changes, amended courses MATH 1050 and 1051, (Sullivan/Dyer) **Carried.**
b) Department of Mathematics and Statistics - Calendar changes, amended courses MATH 1000, MATH 1005, MATH 1006, MATH 1090, MATH 109A and 109B, (Sullivan/Dyer) **Carried.**
c) Department of Mathematics and Statistics - Calendar changes, new course: MATH 4342, (Sullivan/Dyer) **Carried.**

B. **Graduate Studies Committee:**
Presented by Adrian Fiech, Chair, Graduate Studies Committee

a) Department of Physics and Physical Oceanography – Special Topics Graduate Course, PHYS 6061 approved by the Faculty Council Graduate Studies Committee and presented to Faculty Council for information only.
b) Department of Mathematics and Statistics – Calendar Changes, amendments in 32.17.2 Specific Requirements for the M.Sc. in statistics (Fiech/Dyer) **Carried.**
c) Department of Mathematics and Statistics – Calendar Changes, amendments for 44.29.5.2 Statistics (Fiech/Dyer) **Carried.**

C. Library Committee: No business

FSC 3072 Report of Dean: No Report

FSC 3073 Question Period:

Regarding the discussion from February's Faculty Council meeting, Shannon Sullivan notified Faculty Council that in a recent Newslines post, the process of switching all emails to Microsoft Outlook is continuing. There was an indication in the Newsline that if you wish to use an alternative plan, an appeal with a rationale can be submitted. Dr. Sullivan contacted the Chief Information Officer about his many concerns with changing to Outlook, faculty being discouraged about using their @mun.ca email addresses, the change in email clients happening during the Fall semester, Dr. Sullivan suggested to the CIO office investigate the types of mail client's faculty are using and try to establish guidance around how to set up the new email around those clients. CIO is very clear that no matter what mail client used should have a two-factor authentication. Email stream from Shannon and CIO.

Adrian Fiech told Faculty Council he is a member of the Academic and Administrative services IT committee. During a meeting in May, Dr. Fiech was reassured that other clients will be permitted.

Erika Merschrod suggested the Dean ask to be notified in advance of this change in mail clients. The Dean reassured the members that he would be.

Dr. Merschrod underlined JC. Loredo-Osti's comment of concerns about other security question being unanswered such as privacy.

FSC 3074 Adjournment:
Meeting adjourned at 1:30 p.m. Moved: Fridgen/Sullivan

Proposal: Individualized Joint Honours Program BIOL and PCOP

Rationale:

Currently there is no Joint Honours program between Biology and Psychology (co-op) Major Programs. As per University Calendar Regulation 4.5.1 Clause 1c “When a student has declared more than one Major in a combination for which no corresponding Joint Honours program exists, that student may obtain permission to complete an Individualized Honours program, on the recommendation of the Head of each Major department. The Individualized Honours program must be approved by the Committee on Undergraduate Studies of the Faculty of Science.”

We therefore propose the following program to be taken by a student, currently enrolled as a double major student in PCOP and BIOL and recently accepted into the honours program in Psychology. This program is based off of (and virtually identical to) the currently active joint program in PSYC and BIOL, with the addition of the Co-Operative Education requirements, and was developed in consultation with both the Departments of Psychology and Biology, the Co-Operative Education Office, and the student.

Proposed Program: Joint Honours in Biology and Psychology (Co-Op)

Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Biology 1001, 1002, 2060, 2250, 2600, 2900; one of 3401, 3402, or 4404; four Biology electives at the 2000, 3000 or 4000 level not including Biology 499A or 499B.
2. Psychology 1000, 1001, 2520 (or 2521), 2910, 2911, 2930, one of the former PSYC 3250, 3800, 3810, 3830, 3840, or 3860; 3900, 4910; one of the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650; one further 4000 level Psychology research experience course.
3. Biology or Psychology 3750, 4701, 499A/B.
4. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
5. Mathematics 1000; Chemistry 1050 (or 1200), 1051 (or 1001), and 2400; Physics 1020 (or 1050) and 1021 (or 1051); Human Biosciences 2001 or the former Biochemistry 2101 or 2201 and Human Biosciences 2003 or the former Biochemistry 3106 or 3206.
6. Fulfill all of the requirements outlined in Calendar Section 11.12.9.1-4 Requirements for Major and Honours in Psychology (Co-Operative)(B.A. or B.Sc.), and Major and Honours in Behavioural Neuroscience (Co-Operative)(B.Sc. only).
7. Other courses, if necessary, to complete at least 120 credit hours of courses.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- X Amended or deleted course(s): *Biology 3050 – Introduction to Microbiology*
- ☐ 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
Biology 3050 Introduction to Microbiology

REVISED COURSE NUMBER AND TITLE
N/A
ABBREVIATED COURSE TITLE
N/A

RATIONALE
Biology 3050 has been a popular course for students in the Biochemistry and Biochemistry (Nutrition) majors, and is a PR for Biology 3052 Food Microbiology, which has also been popular with Biochemistry students. With the phasing in of the Human Biosciences (HUBI) major (and phasing out of Biochemistry), the Biochem PR option for this course (BIOC 2200) is no longer offered. In consultation with Biochemistry, we propose that students take HUBI 2004 and HUBI 2901 in place of BIOC 2200 or BIOL 2250. HUBI 2004 exposes students to the core concepts, and HUBI 2901 ensures the students have adequate lab skills.

The second minor change is the addition of HUBI 2001 to the list of PR, which has replaced BIOC 2201 in the HUBI major. HUBI 2001 and BIOC 2201 are the same course.

ANTICIPATED EFFECTIVE DATE
Fall 2025

CALENDAR CHANGES

BIOL 3050 Introduction to Microbiology is a course in which the basic principles underlying microbial life are studied. Aspects include structure, function, bioenergetics and growth with an emphasis on prokaryotes. Also studied are viruses, microbial diseases, introductory principles of immunology and the control of microorganisms. The laboratory sessions provide training in culture and determinative techniques using microorganisms.

LH: 3
PR: Science 1807 and Science 1808; BIOL 2250 (or Human Biosciences 2004 and Human Biosciences 2901, or Biochemistry 2200) and Human Biosciences 2001 (or Biochemistry 2201).

CALENDAR ENTRY AFTER CHANGES

BIOL 3050 Introduction to Microbiology is a course in which the basic principles underlying microbial life are studied. Aspects include structure, function, bioenergetics and growth with an emphasis on prokaryotes. Also studied are viruses, microbial diseases, introductory principles of immunology and the control of microorganisms. The laboratory sessions provide training in culture and determinative techniques using microorganisms.

LH: 3
PR: Science 1807 and Science 1808; BIOL 2250 (or Human Biosciences 2004 and Human Biosciences 2901, or Biochemistry 2200) and Human Biosciences 2001 (or Biochemistry 2201).

SECONDARY CALENDAR CHANGES
N/A

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page
BIOLOGY 3050

Academic Unit	Email Address	Response/Date
Humanities and Social Sciences	hss@mun.ca	
Business Administration	deanfba@mun.ca	
Education	educdean@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	DeanofMedicine@mun.ca	
Music	kbulmer@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	gcsass@mun.ca	
Science and the Environment	gcsse@mun.ca	
Fine Arts	gcsofa@mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	deanofsass@mun.ca	

LIBRARY REPORT
A library report is not required.

RESOURCE IMPLICATIONS
There are no anticipated resource demands.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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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): *BIOL 3709 – Field Course in Marine Principles & Techniques*
- ☐ 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
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COURSE NUMBER AND TITLE
BIOL 3709 – Field Course in Marine Principles & Techniques

RATIONALE
We are proposing a change in course description and prerequisite structure for BIOL 3709, a course that introduces students to field methods used to study marine environments. In recent years offerings of this course have not followed the structure as detailed in the current course description. Prerequisites have been modified to allow greater access to students.

CALENDAR CHANGES

BIOL 3709 Field Course in Marine Principles and Techniques

~~begins with a two-week field school immediately prior to the beginning of the Fall Semester. In the Fall Semester there are follow-up lectures, readings and submission of reports. The course is designed to introduce the principal marine environments, organisms and techniques.~~ is an approximately 2-week long field course designed to introduce the principal marine environments and organisms of Bonne Bay and nearby intertidal and shoreline ecosystems. Students will use a variety of oceanographic instruments and techniques to gain hands-on field experience, followed by in-lab sample processing, data analysis, and interpretation.
It is strongly recommended that this course be taken before ~~either~~ BIOL ~~3711 or~~ 4810.

PR: Science 1807 and Science 1808; BIOL 2600 ~~and Statistics 2550 (or any of the courses listed in the credit restrictions of Statistics 2550) and permission of the Head of the Department;~~, or OCSC 1000~~,~~ and at least three of OCSC 2000, 2001, 2100, 2200, 2300

CALENDAR ENTRY AFTER CHANGES

BIOL 3709 Field Course in Marine Principles and Techniques

is an approximately 2-week long field course designed to introduce the principal marine environments and organisms of Bonne Bay and nearby intertidal and shoreline ecosystems. Students will use a variety of oceanographic instruments and techniques to gain hands-on field experience, followed by in-lab sample processing, data analysis, and interpretation. It is strongly recommended that this course be taken before BIOL 4810.

PR: Science 1807 and Science 1808; BIOL 2600, or OCSC 1000 and at least three of OCSC 2000, 2001, 2100, 2200, 2300

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

LIBRARY REPORT

Requested _____:

RESOURCE IMPLICATIONS

No resource implications associated with this proposal.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- X Amended or deleted course(s): *BIOL 3711 Principles of Marine Biology*
- ☐ 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

BIOL 3711 Principles of Marine Biology

RATIONALE

The proposed change will remove the laboratory from BIOL 3711, which is a required course in the Joint Major in Marine Biology and the Joint Honours in Marine Biology. In recent years, the number of students interested in registering for the course has increased, but additional students could not be accommodated because the course has a cap based on a laboratory seating restriction. With the exception of one laboratory that involves live animals, laboratory activities in this course have consisted of computer-based analyses of data. During recent remote offerings of this course, it became evident that students are able to work on these laboratory exercises independently as assignments, and upon return to in-person instruction, students have frequently requested to work on these labs from home rather than needing to attend the scheduled laboratory.

Removing the 3h laboratory from this course will allow the course cap to be increased, and will give students greater flexibility in scheduling. Most of the existing laboratory exercises will be retained and used as assignments, so the student experience is not expected to be markedly impacted by this change.

An additional change will remove the mention that this course may be offered as a two-week field course that embodies equivalent instructional time, which allowed the course to be taught at the Bonne Bay Aquarium and Research Station. The course has been offered yearly since 2010, always at the St. John's campus and at full capacity; it has never been offered as a field course. Offering this required course as a field course would make it less accessible to students.

CALENDAR CHANGES

BIOL 3711 Principles of Marine Biology
is an introductory course in biology of the oceans. Introduces students to marine habitats and the organisms that inhabit them, emphasizing functional morphology, physiology, biodiversity, phylogeny, and ecology. Also includes introduction to marine biogeography, conservation, fisheries and pollution.

EQ: Ocean Sciences 3711

~~LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time~~
~~LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time~~
PR: Science 1807 and Science 1808; BIOL 2122, BIOL 2600

CALENDAR ENTRY AFTER CHANGES

BIOL 3711 Principles of Marine Biology
is an introductory course in biology of the oceans. Introduces students to marine habitats and the organisms that inhabit them, emphasizing functional morphology, physiology, biodiversity, phylogeny, and ecology. Also includes introduction to marine biogeography, conservation, fisheries and pollution.

EQ: Ocean Sciences 3711
PR: Science 1807 and Science 1808; BIOL 2122, BIOL 2600

SECONDARY CALENDAR CHANGES

Before:

OCSC 3711 Principles of Marine Biology
is an introductory course in biology of the oceans. Introduces students to marine habitats and the organisms that inhabit them, emphasizing functional morphology, physiology, biodiversity, phylogeny, and ecology. Also includes introduction to marine biogeography, conservation, fisheries and pollution.

EQ: Biology 3711
~~LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time~~
~~LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time~~
PR: Science 1807 and Science 1808; Biology 2122, Biology 2600

After:

OCSC 3711 Principles of Marine Biology
is an introductory course in biology of the oceans. Introduces students to marine habitats and the organisms that inhabit them, emphasizing functional morphology, physiology, biodiversity, phylogeny, and ecology. Also includes introduction to marine biogeography, conservation, fisheries and pollution.

EQ: Biology 3711
PR: Science 1807 and Science 1808; Biology 2122, Biology 2600

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	Yes
Science	deansci@mun.ca	Yes – Dept. Ocean Sciences
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	Yes
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

From: Gagnon, Patrick
Sent: Monday, June 19, 2023 10:10 AM
To: Biology Academic Program Officer
Subject: FW: Consultation request on Calendar Change Proposal - BIOL 3711 Marine Biology
Attachments: BIOL3711_CalendarChange_for Counsultation.docx

Hi Andrew,

Thanks for the opportunity to examine and comment on this calendar change proposal for BIOL 3711.
OSCUP reviewed it and there was no concern or objection.

Thank you
Pat

From: Davis,Erin
Sent: Thursday, May 25, 2023 12:10 PM
To: Biology Academic Program Officer
Subject: FW: Consultation request on Calendar Change Proposal - BIOL 3711 Marine Biology
Attachments: BIOL3711_CalendarChange_for Counsultation.docx

Hi Andrew,

Pharmacy has no concerns and I do not expect this to affect our students or programs.

Thank you for the opportunity to comment on this proposed change.

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: Oldford, Erin
Sent: Friday, May 26, 2023 1:53 AM
To: Biology Academic Program Officer
Subject: Re: Consultation request on Calendar Change Proposal - BIOL 3711 Marine Biology

Hi Andrew

Thank you for the opportunity to review. We see no issues for Business.

Best wishes.

Erin

LIBRARY REPORT

From: Rose, Kathryn
Sent: Thursday, May 25, 2023 11:54 AM
To: Biology Academic Program Officer
Subject: FW: Consultation request on Calendar Change Proposal - BIOL 3711 Marine Biology
Attachments: BIOL3711_CalendarChange_for Counsultation.docx

Good Morning,

Thank you for the opportunity to provide feedback on BIOL3711. These changes will have no impact on
the library. We will continue to support the students and instructors with their research and teaching
requirements, as needed, under existing budgetary allocations.

Kathryn

Kathryn Rose, MLIS, PhD (she/her) | Acting Head, Collection Strategies
Humanities Research Liaison Librarian – History
Memorial University Libraries
St. John's, Newfoundland, A1B 3Y1
+1 709 864-3139
www.library.mun.ca

RESOURCE IMPLICATIONS

The removal of the laboratory component of BIOL 3711 will result in a reduction in space and material usage for the department of Biology.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- **X** Amended or deleted course(s): *OCSC 3712 – Benthic Biology (x-listing from BIOL 3712)*
- ☐ 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
Ocean Sciences 3712 – Benthic Biology

ABBREVIATED COURSE TITLE

Benthic Biology

RATIONALE

We propose a calendar change to cross-list 3712 as an Ocean Sciences course. This is a Bonne Bay field course and has been offered during the Spring semester along with a number of other courses that are cross-listed as Ocean Sciences electives or in some way count for the Marine Biology & Ocean Sciences major programs. Cross-listing this course will give Ocean Science students an additional option for Ocean Sciences electives at the Bonne Bay Aquarium & Research Station.

CALENDAR CHANGES

13.10 Ocean Sciences (new entry)

OCSC 3712 Benthic Biology

examines the biology of the aquatic benthos (bottom-dwelling organisms); their origins, adaptations, life histories and ecological roles. This course may be offered in a usual 13 week semester or as a two-week field course.
CR: the former Biology 3630
EQ: Biology 3712
LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; Biology 2122 and 2600

CALENDAR ENTRY AFTER CHANGES

13.10 Ocean Sciences

OCSC 3712 Benthic Biology

examines the biology of the aquatic benthos (bottom-dwelling organisms); their origins, adaptations, life histories and ecological roles. This course may be offered in a usual 13 week semester or as a two-week field course.
CR: the former Biology 3630
EQ: Biology 3712
LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; Biology 2122 and 2600

SECONDARY CALENDAR CHANGES

Before:

13.2 Biology

BIOL 3712 Benthic Biology

examines the biology of the aquatic benthos (bottom-dwelling organisms); their origins, adaptations, life histories and ecological roles. This course may be offered in a usual 13 week semester or as a two-week field course.
CR: the former Biology 3630
EQ: Ocean Sciences 3712
LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; Biology 2122 and 2600

After:

13.2 Biology

BIOL 3712 Benthic Biology

examines the biology of the aquatic benthos (bottom-dwelling organisms); their origins, adaptations, life histories and ecological roles. This course may be offered in a usual 13 week semester or as a two-week field course.
CR: the former Biology 3630
EQ: Ocean Sciences 3712
LC: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
LH: either three hours of lecture and three hours of laboratory per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; Biology 2122 and 2600

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	Yes
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	Yes
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

LIBRARY REPORT

No library report required for this proposal.

RESOURCE IMPLICATIONS

There are no resource implications associated with this calendar change.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- **X** Amended or deleted course(s): *BIOL 4050 – Advanced Topics in Microbiology*
- ☐ 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
BIOL 4050 – Advanced Topics in Microbiology

REVISED COURSE NUMBER AND TITLE
BIOL 4050 – Applied Microbiology and Infectious Disease

ABBREVIATED COURSE TITLE
Applied Micro & Infect Dis

RATIONALE
The changes proposed here ensure that the title of the course more accurately reflects the content.

CALENDAR CHANGES

BIOL 4050 ~~Advanced Topics in Microbiology~~Applied Microbiology and Infectious Disease

examines the beneficial and harmful properties of microbes including topics on industrial microbiology and the discovery of new antimicrobial agents. The scope within the course ranges from the genetic manipulation of microbes for useful purposes to the isolation of bacteria for applications in various fields. Current issues concerning microbiology and society will also be discussed including the practical applications of microbes and bacterial diseases affecting society.
LH: 3
PR: Science 1807 and Science 1808; BIOL 3050

CALENDAR ENTRY AFTER CHANGES

BIOL 4050 Applied Microbiology and Infectious Disease

examines the beneficial and harmful properties of microbes including topics on industrial microbiology and the discovery of new antimicrobial agents. The scope within the course ranges from the genetic manipulation of microbes for useful purposes to the isolation of bacteria for applications in various fields. Current issues concerning microbiology and society will also be discussed including the practical applications of microbes and bacterial diseases affecting society.
LH: 3
PR: Science 1807 and Science 1808; BIOL 3050

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

RESOURCE IMPLICATIONS

No resource implications are associated with this proposal.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- **X** Amended or deleted course(s): *BIOL 4052 – Fundamentals of Plant Pathology*
- ☐ 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
BIOL 4052 Fundamentals of Plant Pathology

RATIONALE
This change is being proposed in order to increase the accessibility of the course to Biology students at MUN. BIOL 4052 has been taught 3 times in total, twice with the weekly seminar/discussion component (Winter 2021, Winter 2022), and once without it (Winter 2024). The seminar/discussion sessions consisted of students participating in learning activities such as group case studies and poster presentations. During the Winter 2024 semester, the instructor was able to successfully incorporate such activities into the lecture period without compromising the lecture content, and thus the seminar/discussion sessions are not essential for covering the critical material and activities for the course. By dropping this component, students will only need to dedicate 3 hours per week for in-person course activities rather than the current 6 hours per week, and this will make it easier for students to fit the course into their schedules. The enrolment in the course was significantly higher in the Winter 2024 semester (20 students) versus the Winter 2021 and Winter 2023 semesters when the seminar/discussion sessions were included (11 and 6 students, respectively), and this is likely due in part to the increased accessibility of the course without the seminar/discussion component. Without a lab component, the Science 1807 and 1808 prerequisites are not required, hence the prerequisites are being amended here also.

ANTICIPATED EFFECTIVE DATE
Winter 2026

CALENDAR CHANGES

BIOL 4052 Fundamentals of Plant Pathology provides an introduction to the basic concepts used in the study of plant diseases. Topics will include the different causes and types of plant diseases, mechanisms of plant disease development, pathogen interactions with their hosts and host resistance to pathogens, plant disease epidemiology, and disease management practices. The history and social impacts of plant diseases, as well as current issues in plant health such as food security, will also be covered.

~~**OR:** 3 hour seminar/discussion weekly~~
PR: ~~Science~~ 1807 ~~and Science~~ 1808; BIOL 3050

CALENDAR ENTRY AFTER CHANGES

BIOL 4052 Fundamentals of Plant Pathology provides an introduction to the basic concepts used in the study of plant diseases. Topics will include the different causes and types of plant diseases, mechanisms of plant disease development, pathogen interactions with their hosts and host resistance to pathogens, plant disease epidemiology, and disease management practices. The history and social impacts of plant diseases, as well as current issues in plant health such as food security, will also be covered.

PR: BIOL 3050

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

RESOURCE IMPLICATIONS

No resource implications are associated with this proposal.

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):
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- X Amended or deleted program(s): *10.2.11 Biology and Statistics Joint Honours*
- ☐ 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 Programs

PROGRAM TITLE

Biology and Statistics Joint Honours (10.2.11)

RATIONALE

In a previous calendar change CHEM 2401 (Introductory Organic Chemistry II) was removed from the Biology major programs, including most of the joint honours programs. This course was only kept in those programs where CHEM 2401 was required from the side of the other major subject. This proposal removes CHEM 2401 from one such joint honours program that was missed in the previous proposal.

CALENDAR CHANGES

10.2.11 Biology and Statistics Joint Honours

As a component of the Degree Regulations for the Honours Degree of Bachelor of Science, the following courses are required:

5. Chemistry 2400 ~~and 2401~~, Human Biosciences 2001 or the former Biochemistry 2101 or 2201, and Human Biosciences 2003 or the former Biochemistry 3106 or 3206;

6. Biology 2060, 2250, 2600, 2900, one of 3401, 3402, or 4404. In addition, further Biology courses at the 2000, 3000 or 4000 level must be selected by the student in consultation with the supervisor to make up a minimum of 42 credit hours in Biology but not including Biology 499A or 499B;

7. Either Biology 499A/B or Statistics 459A/B; and

8. A computing course. Computer Science 1510 is recommended.

CALENDAR ENTRY AFTER CHANGES

10.2.11 Biology and Statistics Joint Honours

As a component of the Degree Regulations for the Honours Degree of Bachelor of Science, the following courses are required:

5. Chemistry 2400, Human Biosciences 2001 or the former Biochemistry 2101 or 2201, and Human Biosciences 2003 or the former Biochemistry 3106 or 3206;

6. Biology 2060, 2250, 2600, 2900, one of 3401, 3402, or 4404. In addition, further Biology courses at the 2000, 3000 or 4000 level must be selected by the student in consultation with the supervisor to make up a minimum of 42 credit hours in Biology but not including Biology 499A or 499B;

7. Either Biology 499A/B or Statistics 459A/B; and

8. A computing course. Computer Science 1510 is recommended.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

RESOURCE IMPLICATIONS

No resource implications associated with this proposal.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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LIST OF CHANGES

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

- ☐ New course(s):
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- X Amended or deleted program(s): *Marine Biology & Marine Biology (Hons)*
- ☐ 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 Programs

PROGRAM TITLE
Marine Biology Joint Major (10.1.13)
Marine Biology Joint Honours (10.2.25)

RATIONALE

This proposal addresses a small number of relatively minor changes to ensure recently cross-listed courses required for these major programs are counted appropriately. BIOL 3710 & 3711 were recently cross-listed to OCSC 3710 & 3711. The cross-listed versions of these courses were not included in the Marine Biology program regulations leading to difficulties/confusion for students and staff at the registrar's office. The proposed changes will amend the program to eliminate this confusion. Additionally, MATH 1006 (Calculus for Life Sciences) is being added as an alternative to MATH 1000, an appropriate addition given the focus of the Marine Biology programs.

CALENDAR CHANGES

10.1.13.1 Admission Requirements

4. Mathematics 1000 or 1006;

10.1.13.2 Program of Study

2. Mathematics 1000 or 1006;

8. Biology 1001, 1002, 2060, 2122, 2250 (or Human Biosciences 2004 or the former Biochemistry 2200 or 2100), 2600, and 2900~~, 3710, and 3711~~;

9. Ocean Sciences 1000, 2000, 2001, 2100, and at least one of 2500 or 4500 (or Biology 3709 or 4710);

10. Biology 3710 and 3711 or Ocean Sciences 3710 and 3711

11~~0~~. Additional courses to complete the required 60 combined credit hours in Biology and Ocean Sciences with a minimum of 27 credit hours in each subject (except Biology 2040, 2041, 2120, 3053, and 3820). A minimum of 6 credit hours in Biology at the 3000/4000 level and 12 credit hours in Ocean Sciences at the 3000/4000 level is required; and

12~~1~~. Other courses as necessary to complete the minimum of 120 credit hours required for the General Degree of Bachelor of Science.

10.2.25 Marine Biology Joint Honours

2. Mathematics 1000 or 1006;

8. Biology 1001, 1002, 2060, 2122, 2250 (or Human Biosciences 2004 or the former Biochemistry 2100 or 2200), 2600, and 2900~~, 3710, and 3711~~;

9. Ocean Sciences 1000, 2000, 2001, 2100, 2300 and at least one of 2500 or 4500 (or Biology 3709 or 4710);

10. Additional courses to complete a required 69 combined credit hours in Biology and Ocean Sciences with a minimum of 30 credit hours in either subject (except Biology 2040, 2041, 2120, 3053, and 3820). A minimum of 9 credit hours in Biology at the 3000/4000 level and 15 credit hours in Ocean Sciences at the 3000/4000 level is required;

11. Biology 3710 and 3711 or Ocean Sciences 3710 and 3711, & Biology 499A/B or Ocean Sciences 499A/B ~~Either Biology 499A and 499B or Ocean Sciences 499A and 499B~~; and

12.A sufficient number of elective courses to bring the degree total to 120 credit hours.

CALENDAR ENTRY AFTER CHANGES

10.1.13.1 Admission Requirements

4. Mathematics 1000 or 1006;

10.1.13.2 Program of Study

2. Mathematics 1000 or 1006;

8. Biology 1001, 1002, 2060, 2122, 2250 (or Human Biosciences 2004 or the former Biochemistry 2200 or 2100), 2600, and 2900;

9. Ocean Sciences 1000, 2000, 2001, 2100, and at least one of 2500 or 4500 (or Biology 3709 or 4710);

10. Biology 3710 and 3711 or Ocean Sciences 3710 and 3711

11. Additional courses to complete the required 60 combined credit hours in Biology and Ocean Sciences with a minimum of 27 credit hours in each subject (except Biology 2040, 2041, 2120, 3053, and 3820). A minimum of 6 credit hours in Biology at the

3000/4000 level and 12 credit hours in Ocean Sciences at the 3000/4000 level is required; and

12. Other courses as necessary to complete the minimum of 120 credit hours required for the General Degree of Bachelor of Science.

10.2.25 Marine Biology Joint Honours

2. Mathematics 1000 or 1006;

8. Biology 1001, 1002, 2060, 2122, 2250 (or Human Biosciences 2004 or the former Biochemistry 2100 or 2200), 2600, and 2900;

9. Ocean Sciences 1000, 2000, 2001, 2100, 2300 and at least one of 2500 or 4500 (or Biology 3709 or 4710);

10. Additional courses to complete a required 69 combined credit hours in Biology and Ocean Sciences with a minimum of 30 credit hours in either subject (except Biology 2040, 2041, 2120, 3053, and 3820). A minimum of 9 credit hours in Biology at the 3000/4000 level and 15 credit hours in Ocean Sciences at the 3000/4000 level is required;

11. Biology 3710 and 3711, or Ocean Sciences 3710 and 3711, & Biology 499A/B or Ocean Sciences 499A/B; and

12.A sufficient number of elective courses to bring the degree total to 120 credit hours.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Email Address	Response Received?
St. John's Campus		
Humanities and Social Sciences	hss@mun.ca	
Business Administration	eoldford@mun.ca	
Education	efurey@mun.ca	
Engineering and Applied Science	engrconsult@mun.ca	
Human Kinetics and Recreation	hkrdean@mun.ca	
Medicine	deanofmedicine@med.mun.ca	
Music	musicdean@mun.ca	
Nursing	deanNurse@mun.ca	
Pharmacy	pharminfo@mun.ca	
Science	deansci@mun.ca	
Social Work	adeanugradswk@mun.ca	
Library	univlib@mun.ca	
Grenfell Campus		
Arts and Social Science	kjacobse@grenfell.mun.ca	
Science and the Environment	ssedean@grenfell.mun.ca	
Fine Arts	pride@grenfell.mun.ca	
Marine Institute		
	miugconsultations@mi.mun.ca	
Labrador Institute		
Arctic and Subarctic Studies	ashlee.cunsolo@mun.ca	

RESOURCE IMPLICATIONS

No resource implications associated with this proposal.

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
- X Amended or deleted course(s): COMP 2001, 2002, 2003
- ☐ 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

COMP 2001 Object-Oriented Programming and Human-Computer Interaction
COMP 2002 Data Structures and Algorithms
COMP 2003 Computer Architecture

RATIONALE

We have observed that students who score below 65% in COMP1001 and COMP1002 tend to fail one of COMP2001, 2002 or 2003 on first attempt. Those who scored 65% or above tend to pass all three courses at first attempt. Since all these courses are foundational we determined that students should master those first year courses to a sufficient degree before approaching the second year courses.

We therefore currently require that students admitted into a CS program achieve a minimum of 65% or higher in both COMP1001 and COMP1002. However the observation is independent of program, therefore we propose to change the prerequisite requirements to the courses themselves to reflect this.

We are proposing changing the prerequisites for COMP 2001, 2002 and COMP2003 to require all students, regardless of program, obtain a minimum of 65% in COMP1001 and COMP1002. This will result in fair and equitable access to the courses, as well as a higher rate of success for students completing them.

We are also proposing removing Computational Chemistry as one of the programs included in the COMP 2003 course restriction because this course is not actually required for the Computational Chemistry program, it was added in error.

ANTICIPATED EFFECTIVE DATE

Fall 2025

CALENDAR CHANGES

COMP 2001 Object-Oriented Programming and Human-Computer Interaction

advances from Introduction to Programming and studies object-oriented programming. Additional topics include event-driven programming, program correctness and simple

refactoring, as well as interfaces and human-computer interaction. A brief overview of programming languages is also provided.
CR: the former COMP 2710
LH: 3
PR: ~~COMP 1001; COMP 1003; and acceptance into a major, minor or honours program in Computer Science or Computational Chemistry~~ A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science, Computational Chemistry or Data Science

COMP 2002 Data Structures and Algorithms

covers fundamental data structures, algorithms and algorithm design techniques. A problem-driven course, it focuses on computational problem solving from designing an efficient algorithm to implementing it using appropriate data structures.
CR: the former COMP 2711
LH: 3
PR: ~~COMP 1001; COMP 1002 or Mathematics 2320; COMP 1003; Mathematics 1000; and acceptance into a major, minor or honours program in Computer Science or Computational Chemistry~~ A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science, Computational Chemistry or Data Science

COMP 2003 Computer Architecture

introduces computer architecture at the digital logic implementation level, at the instruction set level, and at the level where programming languages are translated into the underlying machine instructions.
CR:the former COMP 3724
LH: 3
PR: ~~COMP 1001; COMP 1002 or Mathematics 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science or Computational Chemistry~~ A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science

CALENDAR ENTRY AFTER CHANGES

COMP 2001 Object-Oriented Programming and Human-Computer Interaction

advances from Introduction to Programming and studies object-oriented programming. Additional topics include event-driven programming, program correctness and simple refactoring, as well as interfaces and human-computer interaction. A brief overview of programming languages is also provided.
CR: the former COMP 2710
LH: 3
PR:A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science, Computational Chemistry or Data Science

COMP 2002 Data Structures and Algorithms

covers fundamental data structures, algorithms and algorithm design techniques. A problem-driven course, it focuses on computational problem solving from designing an efficient algorithm to implementing it using appropriate data structures.
CR: the former COMP 2711
LH: 3
PR: A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science, Computational Chemistry or Data Science

COMP 2003 Computer Architecture

introduces computer architecture at the digital logic implementation level, at the instruction set level, and at the level where programming languages are translated into the underlying machine instructions.
CR:the former COMP 3724
LH: 3
PR:A minimum 65% in COMP 1001; a minimum 65% in COMP 1002 or MATH 2320; COMP 1003; and acceptance into a major, minor or honours program in Computer Science

SECONDARY CALENDAR CHANGES
None

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

RESOURCE IMPLICATIONS

There are no resource implications associated with this change.

CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration—no concerns
Education
Engineering and Applied Science—support change
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library—no impact on Library
Marine Institute
Medicine—no concerns
Music
Nursing—no concerns
Pharmacy—no impact on Pharmacy
Social Work—support change
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences

• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography
• Psychology—change is reasonable

LIBRARY REPORT

No additional requirements.

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
- X Amended or deleted course(s): COMP 2004, 2005, 2006, 2007, 2008
- ☐ 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

COMP 2004 Introduction to Operating Systems

COMP 2005 Software Engineering

COMP 2006 Computer Networking

COMP 2007 Introduction to Information Management

COMP 2008 Social Issues and Professional Practice

RATIONALE

Right now COMP 2004-2008 are reserved for students who have been admitted into either the CS major or minor programs. This means that students admitted in these programs have the first chance to register, and if there is space remaining in courses after a reserved period of time then any student who has satisfied the pre-requisites can register. Minors are required to take COMP 2001, 2002 and 2003 but should not take 2004-2008, only majors should take 2004-2008, and allowing minors to take these courses provides a back door for minors to enroll in more CS majors courses than they need with the hopes of satisfying the requirements for a major.

We are proposing to change COMP 2004-2008 to be restricted to CS majors. This change will give us the option to have a separate minor admission process since we won't need to be concerned about minors taking space in courses required for majors. A separate minor admission process will hopefully result in a lower minimum average required for minor admission than major admission. This change will also prevent the minor being a way for students to try and pick away at courses until they eventually satisfy the major requirements which gives many students a false sense of hope.

CALENDAR CHANGES

COMP 2004 Introduction to Operating Systems

introduces fundamental techniques for interfacing between computer software and hardware platforms, including the composition of, and connections within, a multilevel operating system. Students learn how to design substantial parts of an operating system.
CR: the former COMP 3725
PR: COMP 2002, COMP 2003; and acceptance into the major or honours program in Computer Science

COMP 2005 Software Engineering

introduces students to the different software process models, to project management and the software requirements engineering process, as well as to systems analysis and design as a problem-solving activity.
CR: the former COMP 3716
PR: COMP 2001; and acceptance into the major or honours program in Computer Science

COMP 2006 Computer Networking

introduces students to the use of programming interfaces for computer networking and to understand how the Internet works on the level of protocols. It focuses on the most commonly used of those protocols that are in the vast majority of modern computer systems.
CH: 1
CO: COMP 2004, COMP 2007, COMP 2008
CR: the former COMP 3715
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

COMP 2007 Introduction to Information Management

introduces the basic knowledge needed for managing large volumes of data. It covers topics in information management and database systems from storage and retrieval to security and privacy of data.
CH: 1
CO: COMP 2004, COMP 2006, COMP 2008
CR: the former COMP 3754
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

COMP 2008 Social Issues and Professional Practice

covers ethical and social considerations of computing to provide students with the basis to address these issues by ethical and technical actions. Case studies are used to illustrate ethical and social issues of computing.
CH: 1
CO: COMP 2004, COMP 2006, COMP 2007
CR: the former COMP 2760
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

CALENDAR ENTRY AFTER CHANGES

COMP 2004 Introduction to Operating Systems

introduces fundamental techniques for interfacing between computer software and hardware platforms, including the composition of, and connections within, a multilevel operating system. Students learn how to design substantial parts of an operating system.
CR: the former COMP 3725
PR: COMP 2002, COMP 2003; and acceptance into the major or honours program in Computer Science

COMP 2005 Software Engineering

introduces students to the different software process models, to project management and the software requirements engineering process, as well as to systems analysis and design as a problem-solving activity.
CR: the former COMP 3716
PR: COMP 2001; and acceptance into the major or honours program in Computer Science

COMP 2006 Computer Networking

introduces students to the use of programming interfaces for computer networking and to understand how the Internet works on the level of protocols. It focuses on the most commonly used of those protocols that are in the vast majority of modern computer systems.
CH: 1
CO: COMP 2004, COMP 2007, COMP 2008
CR: the former COMP 3715
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

COMP 2007 Introduction to Information Management

introduces the basic knowledge needed for managing large volumes of data. It covers topics in information management and database systems from storage and retrieval to security and privacy of data.
CH: 1
CO: COMP 2004, COMP 2006, COMP 2008
CR: the former COMP 3754
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

COMP 2008 Social Issues and Professional Practice

covers ethical and social considerations of computing to provide students with the basis to address these issues by ethical and technical actions. Case studies are used to illustrate ethical and social issues of computing.
CH: 1
CO: COMP 2004, COMP 2006, COMP 2007
CR: the former COMP 2760
PR: COMP 2001, COMP 2002; and acceptance into the major or honours program in Computer Science

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

RESOURCE IMPLICATIONS

There are no resource implications associated with this change.

CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration—no concerns
Education
Engineering and Applied Science—support change
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library—no impact on Library
Marine Institute
Medicine—no concerns
Music
Nursing—no concerns
Pharmacy—no impact on Pharmacy
Social Work—support change
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences

• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography
• Psychology—change is reasonable

LIBRARY REPORT

No additional requirements.

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):
- ☐ Amended or deleted course(s):
- X New program(s): Concentrations in Artificial Intelligence, Data-centric Computing, Theory of Computation, Visual Computing and Games
- X Amended or deleted program(s): 11.4.5 Major in Computer Science (Data-centric Computing), Major in Computer Science (Smart Systems), Major in Computer Science (Visual Computing and Games)
- ☐ 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 Programs

PROGRAM TITLE

11.4.5 Major in Computer Science (Data-centric Computing) (B.Sc. only) -- REMOVE

11.4.6 Major in Computer Science (Smart Systems) (B.Sc. only) -- REMOVE

11.4.7 Major in Computer Science (Visual Computing and Games) (B.Sc. only) -- REMOVE

11.4.9 Computer Science Concentrations -- NEW

RATIONALE

We currently offer a “general” major in computer science and three “stream” majors, Data-centric Computing, Smart Systems and Visual Computing and Games. The streams are only available to BSc majors, not to BA majors or honours students. Students must formally declare at most one stream as their program. We propose to move from offering streams to offering concentrations. The motivation is to provide more program flexibility and to widen access whilst still allowing students to demonstrate specialization within computer science. Concentrations can be completed by BA and BSc majors, and by honours students. Students can complete more than one concentration. When applying to graduate, a student who has completed a concentration can expressly state to the Registrar in writing that they are also applying for a concentration designation. We also take this opportunity to add a concentration in a new area, the Theory of Computation.

ANTICIPATED EFFECTIVE DATE

Fall 2025

CALENDAR CHANGES

~~11.4.5 Major in Computer Science (Data-centric Computing) (B.Sc. only)~~
~~As a component of the Degree Regulations for the General Degree of Bachelor of Science a student must successfully complete the following courses:~~

1. ~~Forty-five credit hours in Computer Science courses are required for a major in Computer Science (Data-centric Computing):~~

a. Computer Science 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, and 2008;
b. Computer Science 3202, 3400, 3401 and 4304; and
c. Six additional credit hours in Computer Science courses selected from Computer Science 3019, 4550, 4734, 4750, 4754, 4019. Some of these courses require the completion of prerequisites that are not themselves part of the major.

2. Additional courses required are: Mathematics 1000, 1001, 2000, 2050, and Statistics 2500 or 2550.

It is recommended, but not required, that students take Business 4720.

11.4.6 Major in Computer Science (Smart Systems) (B.Sc. only)

As a component of the Degree Regulations for the General Degree of Bachelor of Science a student must successfully complete the following courses:

1. Forty-five credit hours in Computer Science courses are required for a major in Computer Science (Smart Systems):
   a. Computer Science 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, and 2008;
   b. Computer Science 3200, 3201, 3202 and one of 3301, 3401 or 3550; and
   c. Six additional credit hours in Computer Science courses selected from Computer Science 4301, 4303, 4750, 4766.
2. Additional courses required are: Mathematics 1000, 1001, 2000, 2050, and Statistics 2500 or 2550.

11.4.7 Major in Computer Science (Visual Computing and Games) (B.Sc. only)

As a component of the Degree Regulations for the General Degree of Bachelor of Science a student must successfully complete the following courses:

1. Forty-five credit hours in Computer Science courses are required for a major in Computer Science (Visual Computing and Games):
   a. Computer Science 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, and 2008;
   b. Computer Science 3300, 3301, and 4300;
   c. Six additional credit hours in Computer Science courses selected from Computer Science 3200, 4301, 4302, 4303, 4304; and
   d. Three additional credit hours in Computer Science courses selected from those listed in c. above, or Computer Science 4766, 4768.
2. Additional courses required are: Mathematics 1000, 1001, 2000, 2050, and Statistics 2500 or 2550.

11.4.9 Computer Science Concentrations

While meeting the requirements for a majors or honours program in Computer Science, students may choose to select courses in one of the following formal concentrations which, if completed, will be noted on the student's transcript.

Particular attention should be paid to necessary prerequisites when scheduling courses. Students should consult with the Academic Officer regarding the availability of courses applicable to their chosen concentration.

11.4.9.1 Artificial Intelligence

Students selecting an Artificial Intelligence concentration are required to complete 18 credit hours as follows:

a. Computer Science 3200, 3202
b. Twelve additional credit hours selected from Computer Science 3201, 3401, 3766, 4301, 4303, 4750, 4766, Statistics 4486

11.4.9.2 Data-centric Computing

Students selecting a Data-centric Computing concentration are required to complete 18 credit hours as follows:

a. Computer Science 3400, 3401, 4304, 4754
b. Six additional credit hours selected from Computer Science 3202, 3730, 3731, 3550, 4550, 4734, 4750, Statistics 3530, 4411, 4486

11.4.9.3 Theory of Computation

Students selecting a Theory of Computation concentration are required to complete 18 credit hours as follows:

a. Computer Science 3600, 3602, 4742
b. Nine additional credit hours selected from Computer Science 4741, 4743, 4750, 499A/B (Note: 499A/B are only available to students who have been admitted to the Computer Science honours program), Mathematics 3240, 3300, 3320, 3340, 3370, 4252, 4320, 4321, 4331, 4340, 4341, 4370

11.4.9.4 Visual Computing and Games

Students selecting a Visual Computing and Games concentration are required to complete 18 credit hours as follows:

a. Computer Science 3300, 3301, 4300
b. Nine additional credit hours selected from Computer Science 3200, 3730, 3766, 4301, 4302, 4303, 4304, 4766, 4768

CALENDAR ENTRY AFTER CHANGES

11.4.9 Computer Science Concentrations

While meeting the requirements for a majors or honours program in Computer Science, students may choose to select courses in one of the following formal concentrations which, if completed, will be noted on the student's transcript.

Particular attention should be paid to necessary prerequisites when scheduling courses. Students should consult with the Academic Officer regarding the availability of courses applicable to their chosen concentration.

11.4.9.1 Artificial Intelligence

Students selecting an Artificial Intelligence concentration are required to complete 18 credit hours as follows:

a. Computer Science 3200, 3202
b. Twelve additional credit hours selected from Computer Science 3201, 3401, 3766, 4301, 4303, 4750, 4766, Statistics 4486

11.4.9.2 Data-centric Computing

Students selecting a Data-centric Computing concentration are required to complete 18 credit hours as follows:

a. Computer Science 3400, 3401, 4304, 4754
b. Six additional credit hours selected from Computer Science 3202, 3730, 3731, 3550, 4550, 4734, 4750, Statistics 3530, 4411, 4486

11.4.9.3 Theory of Computation

Students selecting a Theory of Computation concentration are required to complete 18 credit hours as follows:

a. Computer Science 3600, 3602, 4742
b. Nine additional credit hours selected from Computer Science 4741, 4743, 4750, 499A/B (Note: 499A/B are only available to students who have been admitted to

the Computer Science honours program), Mathematics 3240, 3300, 3320, 3340, 3370, 4252, 4320, 4321, 4331, 4340, 4341, 4370

11.4.9.4 Visual Computing and Games

Students selecting a Visual Computing and Games concentration are required to complete 18 credit hours as follows:

a. Computer Science 3300, 3301, 4300
b. Nine additional credit hours selected from Computer Science 3200, 3730, 3766, 4301, 4302, 4303, 4304, 4766, 4768

SECONDARY CALENDAR CHANGES

11.4.11.1 Admission Requirements

In order to be considered for admission to the CICS, an applicant:

1. must be a declared Computer Science Major;
2. must be registered as a full-time student at the time of application;
3. must have successfully completed Computer Science 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 6 credit hours at the 3000 level or beyond prior to the start of the internship;
4. must have completed at least 75 credit hours prior to the start of the internship;
5. must have at least 15 credit hours remaining after the co-operative internship in order to satisfy degree requirements, as described under Major in Computer Science or Honours in Computer Science, at least 3 credit hours of which must be in Computer Science courses. . Course requirements specific to ~~the programs in Data-Centric Computing, Smart Systems, or Visual Computing and Games are not considered if the student would otherwise satisfy the requirements for the Major in Computer Science or the Honours in Computer Science;~~ concentrations are not considered if the student would otherwise satisfy the requirements for the Major in Computer Science or the Honours in Computer Science; and
6. is expected to return to University as a full-time student after the co-operative internship.

In addition to the above, admission is also subject to academic performance.

15.4 Computer Science

www.mun.ca/computerscience

For Departmental Regulations and Course Descriptions, see Faculty of Science section of the Calendar.

The following undergraduate programs are available in the Department of Computer Science:

1. Applied Mathematics and Computer Science Joint Major
2. Computer Internship Option (CIIO)
3. Computer Science Honours (B.A., B.Sc.)
4. Computer Science and Economics Joint Major
5. Computer Science and Geography Joint Honours
6. Computer Science and Geography Joint Major
7. Computer Science and Physics Joint Honours (B.Sc. only)
8. Computer Science and Physics Joint Major (B.Sc. only)
9. Computer Science and Pure Mathematics Joint Honours
10. Computer Science and Pure Mathematics Joint Major
11. Computer Science and Statistics Joint Honours
12. Computer Science and Statistics Joint Major
13. Computer Science (Software Engineering) Honours (B.Sc. only)
14. Major in Computer Science
15. ~~Major in Computer Science (Data-centric (Computing) (B.Sc. only)~~
16. ~~Major in Computer Science (Smart Systems) (B.Sc. only)~~
17. ~~Major in Computer Science (Visual Computing and Games) (B.Sc. only)~~
18. Minor in Computer Science

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration—no concerns
Education
Engineering and Applied Science—support change
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library—no impact on Library
Marine Institute
Medicine—no concerns
Music
Nursing—no concerns
Pharmacy—no impact on Pharmacy
Social Work—support change
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences
• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography

- Psychology—change is reasonable

LIBRARY REPORT
No additional requirements.

RESOURCE IMPLICATIONS
There are no resource implications associated with this change

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):
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- X 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 Programs

PROGRAM TITLE

11.4.1 Admission to Major Programs

RATIONALE

As part of the Computer Science program, students are required to complete Math 1000, 1001, 2000, 2050 and Stats 2550/2500. In order to be eligible for the Computer Science program students are required to complete Math 1000 and either Math 1090 or 1001. For example, sometimes students have completed Math 1000 and 2050 but we do not consider these students eligible. We would like to include Math 2050 and 2000 as options for satisfying the math requirement for computer science program eligibility. This will not change the overall requirements for a CS Major but allow more flexibility for students satisfying the math requirement.

ANTICIPATED EFFECTIVE DATE

Fall 2025

CALENDAR CHANGES

11.4.1 Admission to Major Programs

Admission to the Major programs in the Department of Computer Science is competitive and selective. Students who wish to enter these programs must submit a completed application form to the Department of Computer Science on or before 11:59 p.m. (Newfoundland time) on May 31 for Fall semester registration and on or before 11:59 p.m. (Newfoundland time) on August 31 for Winter semester registration. The online application form is located on the Department of Computer Science's website.

To be eligible for admission students must have normally completed 24 credit hours as listed below:

1. Computer Science 1001, 1002.
2. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses. Critical Reading and Writing (CRW) courses are regulated by the Faculty of Humanities and Social Sciences. Eligible CRW courses are indicated under Faculty of Humanities and Social Sciences, Course Descriptions.

3. ~~Mathematics 1000 and 1001 (or 1090 and 1000).~~ Mathematics 1000 (or 1006) and one of 1090, 1001, 2000, 2050.
4. Six credit hours in other courses.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on academic performance, normally cumulative average and performance in recent courses.

CALENDAR ENTRY AFTER CHANGES

11.4.1 Admission to Major Programs

Admission to the Major programs in the Department of Computer Science is competitive and selective. Students who wish to enter these programs must submit a completed application form to the Department of Computer Science on or before 11:59 p.m. (Newfoundland time) on May 31 for Fall semester registration and on or before 11:59 p.m. (Newfoundland time) on August 31 for Winter semester registration. The online application form is located on the Department of Computer Science's website.

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3. Mathematics 1000 (or 1006) and one of 1090, 1001, 2000, 2050.
4. Six credit hours in other courses.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on academic performance, normally cumulative average and performance in recent courses.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration—no concerns
Education
Engineering and Applied Science—support change
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library—no impact on Library
Marine Institute
Medicine—no concerns
Music
Nursing—no concerns
Pharmacy—no impact on Pharmacy
Social Work—support change
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences
• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography

- Psychology—change is reasonable

LIBRARY REPORT
No additional requirements.

RESOURCE IMPLICATIONS
There are no resource implications associated with this change

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):
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- X 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 Programs

PROGRAM TITLE

11.4.1 Admission to Major Programs

RATIONALE

Students are required to complete 24 credit hours in order to be considered eligible for the Computer Science program. These credit hours are comprised of computer science, math and critical reading and writing courses, as well as electives. There is no requirement for any of these courses to have been completed at Memorial University and there is no requirement that any of these courses have a numerical grade. We would like to add a requirement that students must have received a numerical grade for at least five courses in order to be considered eligible for the program. This change will prevent the situation where a student applies with all transfer credits from another institution and we can't get a sense of their academic ability.

ANTICIPATED EFFECTIVE DATE

Fall 2025

CALENDAR CHANGES

11.4.1 Admission to Major Programs

Admission to the Major programs in the Department of Computer Science is competitive and selective. Students who wish to enter these programs must submit a completed application form to the Department of Computer Science on or before 11:59 p.m. (Newfoundland time) on May 31 for Fall semester registration and on or before 11:59 p.m. (Newfoundland time) on August 31 for Winter semester registration. The online application form is located on the Department of Computer Science's website.

To be eligible for admission students must have normally completed 24 credit hours as listed below:

1. Computer Science 1001, 1002.
2. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses. Critical Reading and Writing (CRW) courses are regulated by the Faculty of Humanities and Social Sciences. Eligible CRW

courses are indicated under Faculty of Humanities and Social Sciences, Course Descriptions.
3. Mathematics 1000 and one of 1090, 1001, 2000, 2050
4. Six credit hours in other courses.

Transfer credits for the above requirements are accepted. A student must have obtained at least five numeric grades in Memorial University courses in order to be considered for admission.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on academic performance, normally cumulative average and performance in recent courses.

CALENDAR ENTRY AFTER CHANGES

11.4.1 Admission to Major Programs

Admission to the Major programs in the Department of Computer Science is competitive and selective. Students who wish to enter these programs must submit a completed application form to the Department of Computer Science on or before 11:59 p.m. (Newfoundland time) on May 31 for Fall semester registration and on or before 11:59 p.m. (Newfoundland time) on August 31 for Winter semester registration. The online application form is located on the Department of Computer Science's website.

To be eligible for admission students must have normally completed 24 credit hours as listed below:

5. Computer Science 1001, 1002.
6. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses. Critical Reading and Writing (CRW) courses are regulated by the Faculty of Humanities and Social Sciences. Eligible CRW courses are indicated under Faculty of Humanities and Social Sciences, Course Descriptions.
7. Mathematics 1000 and one of 1090, 1001, 2000, 2050
8. Six credit hours in other courses.

Transfer credits for the above requirements are accepted. A student must have obtained at least five numeric grades in Memorial University courses in order to be considered for admission.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on academic performance, normally cumulative average and performance in recent courses.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

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Humanities and Social Sciences
Business Administration—no concerns
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Engineering and Applied Science—support change
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library—no impact on Library
Marine Institute
Medicine—no concerns
Music
Nursing—no concerns
Pharmacy—no impact on Pharmacy
Social Work—support change
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences
• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography

- Psychology—change is reasonable

LIBRARY REPORT
No additional requirements.

RESOURCE IMPLICATIONS
There are no resource implications associated with this change

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:

- **X** New course: COMP 3150
- **X** Amended or deleted course(s): COMP 2001
- ☐ 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)
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- ☐ Other:

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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
COMP 3150 – Introduction to Human-Computer Interaction

RATIONALE
Studies in human-computer interaction (HCI) are essential to ensure computer scientists and software engineers are designing systems to be both useful and usable. As technology becomes more integrated into daily life, understanding user interaction is critical for creating interfaces that are intuitive and user-friendly. Our current Computer Science curriculum does not include an HCI course.
The ACM, IEEE-CS, AAAI Joint Task Force on Computer Science Curricula (2023), requires every computer science program to include a set of “core” computer science topics, which includes Human-Computer Interaction. Currently, Human-Computer Interaction is included as a sub-topic of COMP 2001 to satisfy these requirements. However, this typically only accounts for 1-2 weeks of instruction on implementing graphical user interfaces.

As a secondary calendar change we are proposing to update the title and description of COMP 2001 to reflect that object-oriented programming is the focus of that course.

CALENDAR CHANGES
3150 Introduction to Human-Computer Interaction (HCI) focuses on the design, implementation, and evaluation of interactive computing systems. This course introduces the fundamental theories, methods, and research in HCI, with an emphasis on understanding human behaviour while interacting with technology, general knowledge of HCI design issues, and a human-centered approach to software design. Topics include design principles, methods for evaluating interfaces with or without user involvement, and techniques for prototyping and implementing interfaces of various modalities.
PR: COMP 2001

CALENDAR ENTRY AFTER CHANGES
3150 Introduction to Human-Computer Interaction. Human-computer interaction (HCI) focuses on the design, implementation, and evaluation of interactive computing systems. This course introduces the fundamental theories, methods, and research in HCI, with an emphasis on understanding human behaviour while interacting with technology, general knowledge of HCI design issues, and a human-centered approach to software design. Topics include design principles, methods for evaluating interfaces with or without user involvement, and techniques for prototyping and implementing user interfaces of various modalities.
PR: COMP 2001

SECONDARY CALENDAR CHANGES

COMP 2001 Object-Oriented Programming ~~and Human-Computer Interaction~~

advances from Introduction to Programming and studies object-oriented programming and user interfaces. Additional topics include event-driven programming, program correctness and simple refactoring~~, as well as interfaces and human-computer interaction~~. A brief overview of programming languages is also provided.

SECONDARY CALENDAR ENTRY AFTER CHANGES

COMP 2001 Object-Oriented Programming

advances from Introduction to Programming and studies object-oriented programming and user interfaces. Additional topics include event-driven programming, program correctness and simple refactoring. A brief overview of programming languages is also provided.

Updated abbreviated course title: Object-Oriented Programming

Memorial University of Newfoundland
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CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration
Education
Engineering and Applied Science
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library
Marine Institute
Medicine
Music
Nursing—no impact on Nursing
Pharmacy—no impact on Pharmacy
Social Work
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences

• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography
• Psychology

LIBRARY REPORT
No additional requirements.

RESOURCE IMPLICATIONS
This course will be taught by a faculty member with expertise in human-computer interaction. There are no resource implications.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

COMP 3150 – Introduction to Human-Computer Interaction

Course Outline:

- Introduction
  - History of human-computer interaction
- Design principles
  - Pathological designs
  - The psychology of everyday things
  - GUIs and WIMPS
  - Design thinking
  - Ideation
- Human processing
  - Information processing
  - Motor processing
  - Visual attention
- Prototyping
  - Low-fidelity
  - Medium-fidelity
  - High-fidelity
- Evaluation without the user
  - Heuristics
  - Usability inspection
- Evaluation with the user
  - User study design
  - Observational data
  - Quantitative evaluation

    - Qualitative evaluation: surveys, interviews, focus groups, think-aloud protocol
- Input and modalities
    - Indirect input: pointing, cursors, control display gain
    - Direct input
    - Physical and virtual touch
    - Tangible interfaces
    - Gesture
    - Speech
    - Gaze
- Applications
    - Ubiquitous computing
    - Information visualization
    - Computer-supported collaboration
    - Augmented and virtual reality (spatial computing)
    - Accessible technology
    - Games

Proposed Evaluation Scheme:

- Assignments (3) – 15%
- Midterm examination (written) – 20%
- Course Project – 35%
- Final examination (written) – 30%

Textbooks:

- Y. Rogers, H. Sharp, & J. Preece, Interaction Design: Beyond Human-Computer Interaction, 6th Edition, 2023.
- Mackenzie, I. S., Human-Computer Interaction: An Empirical Research Perspective, 2nd Edition, 2024.

Instructor:
Dr. Jay Henderson

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LIST OF CHANGES

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

- ☐ New course(s):
- ☐ Amended or deleted course(s):
- ☐ New program(s):
- X Amended or deleted program(s):
  Computer Science and Physics Joint Major
  Computer Science and Physics Joint Honours
- ☐ 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: _____

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Undergraduate Calendar Change Proposal Form
Senate Summary Page for Programs

PROGRAM TITLE

10.1.6 Computer Science and Physics Joint Major (B.Sc. only)
10.2.17 Computer Science and Physics Joint Honours (B.Sc. only)

RATIONALE

COMP 3731 – Introduction to Scientific Computing is a required course for the Computer Science-Physics joint programs however, this course has not been offered in recent years and is unlikely to be offered in the near future. We are proposing to remove this as a required course and add a requirement for three additional credit hours in Computer Science courses at the 3000-or 4000-level.

We are also proposing to allow Math 1006 as an acceptable option to MATH 1000 for these programs.

Finally, we are proposing to remove a suggestion to take COMP 2500 – Data Analysis with Scripting Languages as an elective for this program because that course also has not been offered in a long time and is unlikely to be offered in the near future.

ANTICIPATED EFFECTIVE DATE

Fall 2025

CALENDAR CHANGES

10.1.6 Computer Science and Physics Joint Major (B.Sc. only)

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Chemistry 1050 and 1051 (or Chemistry 1010, the former 1011, and the former 1031).
2. Thirty-nine credit hours in Computer Science are required for the Joint Major: 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, ~~3731~~ plus ~~9~~ 12 further credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours at the 4000 level.
3. Physics 1050 (or 1020) and 1051 plus at least 30 additional credit hours in Physics including 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3800.
4.
    a. Mathematics 1000 (or 1006) and 1001.
    b. Mathematics 2000, 2050, 2260, 3202.

c. Additional electives to bring the credit hours to 120. ~~Computer Science 2500 and~~ Statistics 2550 ~~are~~ is recommended.

10.2.17 Computer Science and Physics Joint Honours (B.Sc. only)

The following courses are prescribed:

1. Chemistry 1050 and 1051 (or Chemistry 1010, the former 1011, and the former 1031) (or 1200 and 1001).
2.
    a. Computer Science 1001,1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008~~, 3731~~.
    b. ~~Nine~~ Twelve additional credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours in courses at the 4000 level.
3.
    a. Physics 1050 (or 1020) and 1051.
    b. Physics 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3800, and 3820.
    c. Three additional credit hours in Physics at the 4000 level.
4. Physics 490A/B or Computer Science 499A/B.
5.
    a. Mathematics 1000 (or 1006) and 1001.
    b. Mathematics 2000, 2050, 2260, and 3202.
6. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
7. Two electives to bring the total credit hours to 120. ~~Computer Science 2500 and~~ Statistics 2550 ~~are~~ is recommended.

The topic for the honours project or thesis, Computer Science 499A/B or Physics 490A/B, must be chosen with the prior approval of both departments.

CALENDAR ENTRY AFTER CHANGES

10.1.6 Computer Science and Physics Joint Major (B.Sc. only)

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

5. Chemistry 1050 and 1051 (or Chemistry 1010, the former 1011, and the former 1031).
6. Thirty-nine credit hours in Computer Science are required for the Joint Major: 1001, 1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 plus 12 further credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours at the 4000 level.

7. Physics 1050 (or 1020) and 1051 plus at least 30 additional credit hours in Physics including 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3800.
8.
    a. Mathematics 1000 (or 1006) and 1001.
    b. Mathematics 2000, 2050, 2260, 3202.
    c. Additional electives to bring the credit hours to 120. Statistics 2550 is recommended.

10.2.17 Computer Science and Physics Joint Honours (B.Sc. only)

The following courses are prescribed:

8. Chemistry 1050 and 1051 (or Chemistry 1010, the former 1011, and the former 1031) (or 1200 and 1001).
9.
    a. Computer Science 1001,1002, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.
    b. Twelve additional credit hours in Computer Science courses numbered 3000 or higher, including at least 3 credit hours in courses at the 4000 level.
10.
    a. Physics 1050 (or 1020) and 1051.
    b. Physics 2053, 2055, 2750, 2820, 3220, 3400, 3500, 3750, 3800, and 3820.
    c. Three additional credit hours in Physics at the 4000 level.
11. Physics 490A/B or Computer Science 499A/B.
12.
    a. Mathematics 1000 (or 1006) and 1001.
    b. Mathematics 2000, 2050, 2260, and 3202.
13. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
14. Two electives to bring the total credit hours to 120. Statistics 2550 is recommended.

The topic for the honours project or thesis, Computer Science 499A/B or Physics 490A/B, must be chosen with the prior approval of both departments.

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CONSULTATIONS SOUGHT

Academic Advising Centre
Humanities and Social Sciences
Business Administration
Education
Engineering and Applied Science
Grenfell Campus (Arts & Social Sciences)
Grenfell Campus (Science and the Environment)
Grenfell Campus (Fine Arts)
Human Kinetics and Recreation
Library
Marine Institute
Medicine
Music
Nursing—no impact on Nursing
Pharmacy—no impact on Pharmacy
Social Work
Science
• Biochemistry
• Biology
• Chemistry
• Earth Sciences
• Geography
• Mathematics and Statistics
• Ocean Sciences
• Physics and Physical Oceanography

- Psychology

LIBRARY REPORT
No additional requirements.

RESOURCE IMPLICATIONS
There are no resource implications associated with this change

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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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): Mathematics 4130 / Physics 4220: Introduction to General Relativity
- ☐ 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
Mathematics 4130 / Physics 4220: Introduction to General Relativity

RATIONALE
MATH 4130/PHYS4220 (Introduction to General Relativity) was first offered in Winter 2008 and has been taught at least every second year since then. When it was first designed and approved it was given a convoluted prerequisite that involved a either a high level mathematics course (MATH 4230 – Differential Geometry) or a high level physics courses (PHYS 3220 – Classical Mechanics). While the original proposer[1] of this course thought this was a good idea, subsequent experience teaching the course has shown that neither of these is necessary for students to succeed.
Hence, we propose to loosen and simplify the prerequisites. Eliminating the unnecessary prerequisites will make the course accessible to a broader group of students.

This change has been approved by both the Department of Mathematics and Statistics and the Department of Physics and Physical Oceanography.

ANTICIPATED EFFECTIVE DATE
Fall 2025

CALENDAR CHANGES

MATH 4130 Introduction to General Relativity studies both the mathematical structure and physical content of Einstein's theory of gravity. Topics include the geometric formulation of special relativity, curved spacetimes, metrics, geodesics, causal structure, gravity as spacetime curvature, the weak-field limit, geometry outside a spherical star, Schwarzschild and Kerr black holes, Robertson-Walker cosmologies, gravitational waves, an instruction to tensor calculus, Einstein's equations, and the stress-energy tensor.
~~**CO:** MATH 4230~~
EQ: Physics 4220
PR: MATH 2260 and 3202 ~~and one of Physics 3220 or MATH 4230 or permission of the Head of Department.~~

PHYS 4220 Introduction to General Relativity studies both the mathematical structure and physical content of Einstein's theory of gravity. Topics include the geometric formulation of special relativity, curved spacetimes, metrics, geodesics,

[1] Who happens to be the same person who is now proposing this revision!

causal structure, gravity as spacetime curvature, the weak-field limit, geometry outside a spherical star, Schwarzschild and Kerr black holes, Robertson-Walker cosmologies, gravitational waves, an introduction to tensor calculus, Einstein's equations, and the stress-energy tensor.
~~CO: Mathematics 4230~~
EQ: Mathematics 4130
PR: Mathematics 2260 and 3202 ~~and one of PHYS 3220, Mathematics 4230 or waiver approved by the instructor~~

CALENDAR ENTRY AFTER CHANGES

MATH 4130 Introduction to General Relativity
studies both the mathematical structure and physical content of Einstein's theory of gravity. Topics include the geometric formulation of special relativity, curved spacetimes, metrics, geodesics, causal structure, gravity as spacetime curvature, the weak-field limit, geometry outside a spherical star, Schwarzschild and Kerr black holes, Robertson-Walker cosmologies, gravitational waves, an instruction to tensor calculus, Einstein's equations, and the stress-energy tensor.
EQ: Physics 4220
PR: MATH 2260 and MATH 3202

PHYS 4220 Introduction to General Relativity studies both the mathematical structure and physical content of Einstein's theory of gravity. Topics include the geometric formulation of special relativity, curved spacetimes, metrics, geodesics, causal structure, gravity as spacetime curvature, the weak-field limit, geometry outside a spherical star, Schwarzschild and Kerr black holes, Robertson-Walker cosmologies, gravitational waves, an introduction to tensor calculus, Einstein's equations, and the stress-energy tensor.
EQ: Mathematics 4130
PR: Mathematics 2260 and 3202

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CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	"HSS has no concerns with the proposed revisions."

Academic Unit	Response Received
Business Administration	No response
Education	No response
Engineering and Applied Science	"... no impact on our programs. We are happy to support this change."
Human Kinetics and Recreation	No response
Marine Institute	No response
Medicine	"...there are no concerns with the proposed prerequisite changes."
Music	"...we see no impact on our students and have have no concerns. "
Nursing	No response
Pharmacy	"There is no impact on the School of Pharmacy."
Science	
Biochemistry	No response
Biology	No response
Chemistry	No response
Computer Science	No response
Earth Sciences	No response

Academic Unit	Response Received
Mathematics and Statistics	Proposing Department
Ocean Sciences	No response
Physics and Physical Oceanography	Co-proposing Department
Psychology	No response
Social Work	No response
Library	“This change will have no impact on the library.”
Grenfell - Arts and Social Science	No response
Grenfell - Science and the Environment	No response
Grenfell - Fine Arts	No response
Labrador Institute	No response

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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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): MATH 4340 and MATH 4341
- ☐ 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
MATH 4340 Combinatorial Analysis and MATH 4341 Combinatorial Designs

RATIONALE
The creation of Math 4342 Advanced Graph Theory has inspired a desire to make all of the 4th year combinatorics courses more accessible. To that end, we increase the list of 3rd year combinatorics courses that can be used as prerequisites for MATH 4340 and MATH 4341.

ANTICIPATED EFFECTIVE DATE
Fall 2025

CALENDAR CHANGES
MATH 4340 Combinatorial Analysis

continues most of the topics started in 3340 with further work on distributions, recurrence relations and generating functions. Generating functions are used to solve recurrence relations in two variables. Also included is a study of Polya's theorem with applications.

PR: MATH 2000 and one of MATH 3240 or 3340

MATH 4341 Combinatorial Designs

includes the study of finite fields, Latin squares, finite projective planes and balanced incomplete block designs.

PR: One of MATH 3240, 3320 or 3340

CALENDAR ENTRY AFTER CHANGES

MATH 4340 Combinatorial Analysis

continues most of the topics started in 3340 with further work on distributions, recurrence relations and generating functions. Generating functions are used to solve recurrence relations in two variables. Also included is a study of Polya's theorem with applications.

PR: MATH 2000 and one of MATH 3240 or 3340

MATH 4341 Combinatorial Designs

includes the study of finite fields, Latin squares, finite projective planes and balanced incomplete block designs.

PR: One of MATH 3240, 3320 or 3340

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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CONSULTATIONS SOUGHT
??

LIBRARY REPORT
??

RESOURCE IMPLICATIONS
There will be no resource implications.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page
Joint Major and Joint Honours in
Computer Science and Mathematics

LIST OF CHANGES

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

- ☐ New courses
- ☐ Amended or deleted course(s):
- ☐ New programs(s)
- X Amended or deleted program(s):

AMAT/COMP and COMP/PMAT Joint Major/Honours (deleted)
-> COMP/MATH Joint Major/Honours (added)

- ☐ 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 and Labrador
Undergraduate Calendar Change Proposal Form
Senate Summary Page for Programs
Mathematics Major and Honours Degrees

OLD PROGRAMS (to be deleted)
Joint Major in Applied Mathematics and Computer Science (BSc)
Joint Major in Computer Science and Pure Mathematics (BSc)
Joint Honours in Computer Science and Pure Mathematics (BSc)

NEW PROGRAMS (to be added)
Joint Major in Computer Science and Mathematics (BSc)
Joint Honours in Computer Science and Mathematics (BSc)

RATIONALE

Last year there was a major revision to the undergraduate programs in the Department of Mathematics and Statistics. In particular the former Applied and Pure Mathematics degrees were replaced with a Mathematics Major and a Mathematics Honours degree. As a result, the joint degrees now also need updating. This proposal replaces the former Joint Major in Applied Mathematics and Computer Science and Computer Science/Pure Mathematics with a single Joint Major in Computer Science and Mathematics. Similarly, the Joint Honours in Computer Science and Pure Mathematics is replaced with a single Joint Honours in Computer Science and Mathematics. Previously there was no official Applied Mathematics/Computer Science Honours, though several students had completed this degree as an Individualized Honours.

Both the new MATH Major and the COMP Major are built around fixed sets of core courses (11 for MATH, 9 for COMP[1]) plus choices of higher-level courses (4 for MATH, 6 for COMP) to bring the requirements up to 15. Similarly, the Honours degrees have core courses (14 for MATH, 9 for COMP), the honours project (2 courses) plus choices of higher-level courses (9 for MATH, 10 for COMP). The new joint degrees are then naturally constructed by defining a new combined core along with choices to make up the balance. Numerical constraints to this construction include:

[1] For convenience of discussion, the three one-credit courses COMP 2006/7/8 will be treated as a single course. These are the only non-three-credit hour courses in the degree and it is easier to write about numbers of courses rather than credit hours.

1) a Joint Major should contain 12-15 courses from each subject,
2) a Joint Honours should contain at least 12 courses from each subject with a combined requirement of at least 28 courses,
3) extra Faculty of Science regulations mean that at least another 5 courses will be required to complete any degree: i) an English course, ii) a CRW course, iii) two courses from another science and iv) one course from another science and
4) a standard degree is 40 courses.

Hence, including all requirements, a Joint Major will require at least 29 courses and a Joint Honours will require at least 33. At the same time there can be many different flavours of a computer science/mathematics degree. While we maintain a solid core in each area, we also aim to maintain enough flexibility to allow students to adapt the degree to both their interests and the rapidly evolving developments at the interface of these fields.

Comparing the number of courses in the new and old degrees it can be seen that the old degrees were overloaded and in particular the old Honours degree could not be completed in four years by a student who took only 10 courses per year. Further, the old Majors were both close to the maximum number of courses allowed for a joint Major and in fact were almost (bar one course in COMP) identical to the corresponding Double Majors (where a student takes all requirements for both degrees). The new degrees have more reasonable requirements.

	AMAT/COMP Major	COMP/PMAT Major	COMP/MATH Major	COMP/PMAT Honours	COMP/MATH Honours
COMP/MATH Courses	15/14	15/14	12/12	15/20 + 2	13/13 + 6
STAT Courses	1 recommended	1	1	1	1
Other Courses	5	5	5	5	5
Total Courses	34/35	35	30	43!	38

Finally, note that both of the (non-joint) mathematics and computer science degrees have a statistics requirement. Computer Science requires 2500 (Stats for Business and Arts Students) or 2550 (Statistics for Science Students) while Mathematics requires 2410 (Introduction to Probability Theory). The joint degrees give a choice between 2550 and 2410. However, 2550 (or 2500) is a prerequisite for many 3000 and 4000 level Computer Science courses (and one Mathematics course) while many further Statistics courses may require either or both of these courses. Hence, we include a note in the Statistics requirement to warn students that this is a potentially significant choice.

These changes have been approved by both Departments.

ANTICIPATED EFFECTIVE DATE

These programs will be available for students from September 2025.

CALENDAR CHANGE

From the current calendar, delete the following sections:

~~**10.1.1 Applied Mathematics and Computer Science Joint Major**~~

~~As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:~~

~~1) Computer Science 1001, 1003, 2002, 2002, 2003, 2004, 2005, 2006, 2007, 2008, plus 18 further credit hours in Computer Science courses numbered 3000 or higher~~

~~2) Mathematics 1000, 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3100, 3132, 3161, 3202, 4160 and 4190.~~

~~In addition, Statistics 2550 is highly recommended.~~

~~**10.1.7 Computer Science and Pure Mathematics Joint Major**~~

~~As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:~~

~~1. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.~~
~~2. Eighteen additional credit hours in Computer Science courses numbered 3000 or higher.~~
~~3. Mathematics 1000, 1001, 2000, 2030 (or the former 2130) 2050, 2051, 2260, 2320, 3000, 3202, 3320, 3340 and Statistics 2550.~~
~~4. Nine additional credit hours in courses numbered 3000 or higher offered by the Department of Mathematics and Statistics, excluding the former Mathematics 3330.~~

~~**10.2.18 Computer Science and Pure Mathematics Joint Honours**~~

~~As a component of the Degree Regulations for the Honours Degree of Bachelor of Science, the following courses are required:~~

~~At least 51 credit hours in Computer Science courses are required including the following:~~

~~1. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.~~
~~2. Excluding 499A/B, twenty-one additional credit hours from courses numbered 3000 or higher, at least six credit hours of which must be in courses at the 4000 level.~~

~~The following courses in Mathematics and Statistics are required:~~

~~1. Mathematics 1000, 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3001, 3202, 3210, 3320, 3340, Statistics 2550.~~
~~2. Either Mathematics 4000 or 4001.~~
~~3. Excluding the former Mathematics 3330, the former 4399, and 439A/B, fifteen additional credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or higher including at least nine credit hours from courses numbered 4000 or higher and at least nine credit hours in Pure Mathematics courses.~~
~~4. An Honours Dissertation (either Computer Science 499A/B or Mathematics 439A/B) with the topic chosen in consultation with both departments.~~

~~**Note:**~~

~~There is an Undergraduate Advisor in each Department. These advisors should be consulted on all academic matters.~~

Then add the following sections (number as appropriate).

10.1.X Computer Science and Mathematics Joint Major

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
2. Six credit hours in a science other than Computer Science or Mathematics.
3. Three further credit hours in a science other than Computer Science, Mathematics or the science chosen in the previous clause.
4. Mathematics 1000 (or 1006) , 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000.
5. Nine further credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or above including at least three numbered 4000 or above.
6. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.

7. Twelve further credit hours in Computer Science numbered 3000 or above including at least three numbered 4000 or above.
8. Statistics 2410 or 2550. In making this choice, students should be aware that several further COMP or MATH courses have 2550 as a prerequisite. STAT courses may require either or both. Students wishing to maintain flexibility should take both courses.

10.2.X Computer Science and Mathematics Joint Honours

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
2. Six credit hours in a science other than Computer Science or Mathematics.
3. Three further credit hours in a science other than Computer Science, Mathematics or the science chosen in the previous clause.
4. Mathematics 1000 (or 1006), 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3001.
5. Nine further credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or above including at least three numbered 4000 or above.
6. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.
7. Fifteen further credit hours in Computer Science numbered 3000 or above including at least six numbered 4000 or above.
8. Twelve further credit hours chosen from courses offered by the Departments of Computer Science or Mathematics and Statistics numbered 3000 or above including at least six numbered 4000 or above.
9. Statistics 2410 or 2550. In making this choice, students should be aware that several further COMP or MATH courses have 2550 as a prerequisite. STAT courses may require either or both. Students wishing to maintain flexibility should take both courses.
10. An Honours Dissertion (either Computer Science 499A/B or Mathematics 409A/B) with the topic chosen in consultation with both departments.

CALENDAR ENTRY AFTER CHANGES

10.1.X Computer Science and Mathematics Joint Major

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
2. Six credit hours in a science other than Computer Science or Mathematics.
3. Three further credit hours in a science other than Computer Science, Mathematics or the science chosen in the previous clause.
4. Mathematics 1000 (or 1006), 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000.
5. Nine further credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or above including at least three numbered 4000 or above.
6. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.
7. Twelve further credit hours in Computer Science numbered 3000 or above including at least three numbered 4000 or above.
8. Statistics 2410 or 2550. In making this choice, students should be aware that several further COMP or MATH courses have 2550 as a prerequisite. STAT courses may require either or both. Students wishing to maintain flexibility should take both courses.

10.2.X Computer Science and Mathematics Joint Honours

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
2. Six credit hours in a science other than Computer Science or Mathematics.
3. Three further credit hours in a science other than Computer Science, Mathematics or the science chosen in the previous clause.
4. Mathematics 1000 (or 1006), 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3001.
5. Nine further credit hours in courses offered by the Department of Mathematics and Statistics numbered 3000 or above including at least three numbered 4000 or above.
6. Computer Science 1001, 1003, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.
7. Fifteen further credit hours in Computer Science numbered 3000 or above including at least six numbered 4000 or above.
8. Twelve further credit hours chosen from courses offered by the Departments of Computer Science or Mathematics and Statistics numbered 3000 or above including at least six numbered 4000 or above.
9. Statistics 2410 or 2550. In making this choice, students should be aware that several further COMP or MATH courses have 2550 as a prerequisite. STAT

courses may require either or both. Students wishing to maintain flexibility should take both courses.

10. An Honours Dissertion (either Computer Science 499A/B or Mathematics 409A/B) with the topic chosen in consultation with both departments.

SECONDARY CALENDAR CHANGES

Changes

11.4 Computer Science

~~1. Applied Mathematics and Computer Science Joint Major~~
8. Computer Science and ~~Pure~~ Mathematics Joint Honours
9. Computer Science and ~~Pure~~ Mathematics Joint Major

11.9 Mathematics and Statistics

~~2. Applied Mathematics and Computer Science Joint Major (B.Sc. only)~~
7. Computer Science and ~~Pure~~ Mathematics Joint Honours (B.Sc. only)
8. Computer Science and ~~Pure~~ Mathematics Joint Major (B.Sc. only)

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	
Business Administration	
Education	
Engineering and Applied Science	
Human Kinetics and Recreation	
Marine Institute	
Medicine	
Music	
Nursing	
Pharmacy	
Science	
Biochemistry	
Biology	

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

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page
Joint Major in Economics and Mathematics

LIST OF CHANGES

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

- ☐ New courses
- ☐ Amended or deleted course(s):
- ☐ New programs(s)
- X Amended or deleted program(s):

AMAT/ECON and ECON/PMAT Joint Majors (deleted)
-> ECON/MATH Joint Major (added)

- ☐ 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 and Labrador
Undergraduate Calendar Change Proposal Form
Senate Summary Page for Programs
Mathematics Major and Honours Degrees

OLD PROGRAMS (to be deleted)
Joint Major in Applied Mathematics and Economics (BSc)
Joint Major in Economics and Pure Mathematics (BSc)

NEW PROGRAMS (to be added)
Joint Major in Economics and Mathematics (BSc)

RATIONALE

Last year there was a major revision to the undergraduate programs in the Department of Mathematics and Statistics. In particular the former Applied and Pure Mathematics degrees were replaced with a Mathematics Major and a Mathematics Honours degree. As a result, the joint degrees now also need updating. This proposal replaces the former Joint Major in Applied Mathematics/Economics and Economics/Pure Mathematics with a single Joint Major in Economics and Mathematics.

Both the new Mathematics Major and the Economics Major are built around fixed sets of core courses (11 for MATH, 9 for ECON) plus choices of higher-level courses (4 for MATH, 5 for ECON) to bring the requirements up to 15 for MATH and 14 for ECON. The new joint degrees are constructed by defining a new combined core along with choices to make up the balance. Numerical constraints to this construction include:

1) a Joint Major should contain 12-15 courses from each subject,
2) extra Faculty of Science regulations mean that at least another 5 courses will be required to complete any degree: i) an English course, ii) a CRW course, iii) two courses from another science and iv) one course from another science.

Hence, including all requirements, a Joint Major will require at least 29 courses. At the same time this degree needs to maintain the flexibility necessary to cover either the material of the old AMAT/ECON or the old ECON/PMAT as well as hybrids of these degrees and any new developments that may occur at the interface of these subjects.

The core MATH courses in the new degree are those in the Mathematics major with the replacement of MATH 3030 (Mathematical Inquiry II) with MATH 3100 (Introduction to Dynamical Systems) which is central enough to Economics that it was part of both of the old joint Majors. The core ECON courses are exactly those of the Economics major. The extra choice courses are reduced to 5 in ECON and 2 in MATH, resulting in 14 from

ECON and 13 from MATH. There are also two required STAT courses (as required by the regular economics major). Combined with the standard Faculty of Science requirements, this results in a total of 34 required courses for the degree compared to 32 and 33 in the old joint degrees.

This proposal was co-developed by the Department of Economics and the Department of Mathematics and Statistics. It has been passed at Departmental meetings of both units.

ANTICIPATED EFFECTIVE DATE
This program will be available for students from September 2025.

CALENDAR CHANGE

From the current calendar, delete the following sections:

~~**10.1.2 Applied Mathematics and Economics Joint Major**~~

~~As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:~~

1. ~~Mathematics 1000, 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3100, 3202, Statistics 2550.~~
2. ~~Either Mathematics 3132 and 4131 or 3161 and 4160.~~
3. ~~A computing course early in the program is required. Computer Science 1510 is highly recommended.~~
4. ~~Economics: 1010 (or the former 2010), 1020 (or the former 2020), 2550, 3000, 3001, 3010, 4550, 4551.~~
5. ~~Eighteen further credit hours chosen from among the various Economics courses in consultation with the Head of the Department or delegate, including at least 9 credit hours at the 4000 level.~~

~~**10.1.10 Economics and Pure Mathematics Joint Major**~~

~~As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:~~

1. ~~Mathematics 1000, 1001, 2000, 2030 (or the former 2130), 2050, 2260, 2320, 3000, 3100, 3202, 3320, Statistics 2550 and one 4000 level Mathematics course.~~
2. ~~A computing course early in the program is required. Computer Science 1510 is highly recommended.~~
3. ~~Economics: 1010 (or the former 2010), 1020 (or the former 2020), 2550, 3000, 3001, 3010, and 6 credit hours from either 3550 and 3551, or 4550and 4551.~~

4. ~~Eighteen further credit hours chosen from among the various Economics courses in consultation with the Head of the Department or delegate, including at least 9 credit hours at the 4000 level.~~

Then add the following section (number as appropriate).

10.1.X Economics and Mathematics Joint Major

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses including at least 3 credit hours in English courses.
2. One of Computer Science 1001 or Computer Science 1510.
3. Statistics 2550 (or 2500) plus a further three credit hours in Statistics.
4. Three credit hours in a science subject other that Computer Science, Economics, Mathematics or Statistics plus a further three credit hours in either that same science subject or Computer Science.
5. Economics: 1010 (or the former 2010), 1020 (or the former 2020), 2550, 3000, 3001, 3010, 3550, 4550 and at least one of 3551 or 4551.
6. Fifteen further credit hours chosen from courses offered by the Department of Economics numbered 3000 or above. At least 6 must be in courses numbered 4000 or above. These courses should be chosen in consultation with the Head of Department or delegate.
7. Mathematics 1000 (or 1006), 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3100, 3202.
8. Six further credit hours chosen from courses offered by the Department of Mathematics and Statistics numbered 3000 or above. At least 3 must be in courses numbered 4000 or above.

CALENDAR ENTRY AFTER CHANGES

10.1.X Economics and Mathematics Joint Major

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses including at least 3 credit hours in English courses.
2. One of Computer Science 1001 or Computer Science 1510.
3. Statistics 2550 (or 2500) plus a further three credit hours in Statistics.

4. Three credit hours in a science subject other that Computer Science, Economics, Mathematics or Statistics plus a further three credit hours in either that same science subject or Computer Science.
5. Economics: 1010 (or the former 2010), 1020 (or the former 2020), 2550, 3000, 3001, 3010, 3550, 4550 and at least one of 3551 or 4551.
6. Fifteen further credit hours chosen from courses offered by the Department of Economics numbered 3000 or above. At least 6 must be in courses numbered 4000 or above. These courses should be chosen in consultation with the Head of Department or delegate.
7. Mathematics 1000 (or 1006), 1001, 2000, 2030 (or the former 2130), 2050, 2051, 2260, 2320, 3000, 3100, 3202.
8. Six further credit hours chosen from courses offered by the Department of Mathematics and Statistics numbered 3000 or above. At least 3 must be in courses numbered 4000 or above.

SECONDARY CALENDAR CHANGES

Science Side:

11.9 Mathematics

~~3. Applied Mathematics and Economics Joint Major (BSc only)~~
11. Economics and ~~Pure~~ Mathematics Joint Major (BSc only)

HSS Side:

15.5 Economics

15.5.7.2 Bachelor of Science

Programs for Joint Majors in Economics and Computer Science, ~~Pure Mathematics, Applied~~ Mathematics or Statistics, and a Joint Major in Statistics and Economics (Co-operative) are found under the heading Faculty of Science, Joint Program Regulations in the entry for the Faculty of Science.

A student who wishes to take a Joint Major in Economics and Computer Science, Mathematics or Statistics must arrange a program in consultation with the heads of the respective departments and comply with the General Regulations for the Majors Degrees.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

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

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

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page
Joint Major and Joint Honours in Mathematics and Physics

LIST OF CHANGES

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

- ☐ New courses
- ☐ Amended or deleted course(s):
- ☐ New programs(s)
- X Amended or deleted program(s): AMAT/PHYS Joint Major/Honours -> MATH/PHYS Joint Major/Honours
- ☐ 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 and Labrador
Undergraduate Calendar Change Proposal Form
Senate Summary Page for Programs
Mathematics Major and Honours Degrees

PROGRAM TITLE
Joint Major in Applied Mathematics and Physics (BSc)
Joint Honours in Applied Mathematics and Physics (BSc)

REVISED PROGRAM TITLE
Joint Major in Mathematics and Physics (BSc)
Joint Honours in Mathematics and Physics (BSc)

RATIONALE

Last year there was a major revision to the undergraduate programs in the Department of Mathematics and Statistics. In particular the former Applied and Pure Mathematics degrees were replaced with a Mathematics Major and a Mathematics Honours degree. As a result, the joint degrees now also need updating. While the names change, the changes to the course requirements are fairly minor and mainly reflect changes in the corresponding Major/Honours degrees.

Starting with the Joint Major the specific changes are:

1) We update to match the core requirements those of the new Mathematics Major. Hence, we add MATH2030 (Mathematical Inquiry I) which is a central course in the Mathematics degrees. This replaces MATH3001 (Real Analysis II) which continues to be required for the Honours Mathematics degree but not the Major.
2) On the Physics side, a choice is added between PHYS3800 (Computational Physics) and PHYS3900 (Experimental Physics I). This is in line with the existing requirements for the joint Honours in Applied Mathematics and Physics (which we are retaining for the updated degree). As this is an extra course on the Physics side, regulation 6 (on extra choice courses) is updated to reflect this.
3) With MATH 2030 now required, the complicated “Writing course” regulation is no longer necessary. It is removed.
4) The computer science requirement is updated to reflect the fact that most students now take COMP1001.

For the Joint Honours, we update the name, the computer science requirement, change one required third year course (3230: Classical Mechanics II) to a choice of any third year physics course and finally change the Applied Mathematics Honours project

419A/B to the Mathematics Honours Project 409A/B. As for all Joint Honours degrees, the course requirements are quite high (36 or 37 in this case depending on the choice of the extra science courses) and so there is very little room for modification. For this reason, MATH2030 is not added to the Honours degree except as a recommendation.

In both cases, the preamble is also updated to the “As a component of the Degree Regulation…” style instead of the previous “Required courses are…”. As a knock-on this has changed the wording of regulation 9 in the honours degree.

For the additional credit hours that may be selected from either Department the language is updated and coordinated to specify that the courses can come from any offered by the two Departments. This is mainly to clarify that on the math/stats side both MATH and STAT courses are allowed. Previously the joint major restricted to Applied Mathematics courses while the Honours was intended to allow anything offered by either Department, but perhaps the language was unclear.

This proposal was co-developed by the Department of Mathematics and Statistics and the Department of Physics and Physical Oceanography. It has been passed at Departmental meetings of both units.

ANTICIPATED EFFECTIVE DATE
These programs will be available for students from September 2025.

CALENDAR CHANGE

10.1.3 ~~Applied~~ Mathematics and Physics Joint Major

~~Required course for this degree are:~~ As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses including at least 3 credit hours in English courses.
2. ~~A computing course. Computer Science 1510 is recommended.~~ One of Computer Science 1001, Computer Science 1510, Engineering 1020 or an equivalent course in computer programming.
3. Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen ~~then Computer Science~~ ~~1510~~ then a Computer Science course from the second requirement 10.1.3.2 may be counted as 3 of those hours).
4. Mathematics 1000 (or 1006), 1001, 2000, 2030, 2050, 2051, 2260, 2320, 3000, ~~3001,~~ 3132, 3202.
5. Physics 1050 (or 1020), 1051, 2053, 2055, 2750 (or 2056), 2820, 3220, 3400, 3500, 3750 and one of 3800 or 3900.

6. Mathematics 3161 or Physics 3820.
7. ~~At least 15~~ Twelve additional credit hours chosen from ~~Mathematics and Physics~~ courses numbered 3000 or above that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. ~~At least 3 hours are required from Mathematics and 3 hours are required from Physics.~~ At least 3 credit hours must be selected from courses offered by each Department.
8. ~~A writing course. Any one of Mathematics 2030 (or the former 2130), Physics 3900, Mathematics 419A/B, or Physics 490A/B is acceptable.~~

~~The last requirement does not have to be met independently of the other regulations. For example, it can be satisfied by choosing Physics 3900 as a 3000+ elective in clause 8. above.~~

10.2.2 ~~Applied~~ Mathematics and Physics Joint Honours

~~The following courses are required:~~ As a component of the Degree Regulations for the Honours Degree of Bachelor of Science, the following courses are required:

1) Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.
2) ~~A computing course. Computer Science 1510 or 1001 is recommended.~~ One of Computer Science 1001, Computer Science 1510, Engineering 1020 or an equivalent course in computer programming.
3) Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen ~~then Computer Science~~ ~~1510~~ then a Computer Science course from the second requirement 10.2.2.2 may be counted as 3 of these hours).
4) Mathematics 1000 (or 1006), 1001, 2000, 2050, 2051, 2260, 2320, 3000, 3001, 3132, 3202, 3210.
5) Physics 1050 (or 1020), 1051, 2053, 2055, 2750 (or 2056), 2820, 3220, ~~3230,~~ 3400, 3500, 3750, ~~and~~ one of 3800 or 3900, and a further three credit hours numbered 3000 or higher.
6) One of Mathematics 3161 or Physics 3820 and one of Mathematics 4160 or Physics 4820.
7) Physics 490A/B or Mathematics ~~419~~409A/B.
8) Twelve additional credit hours chosen from courses numbered 4000 or higher that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. At least 3 credit hours must be selected from courses offered by each Department. ~~in each of Mathematics and Physics.~~

9) ~~Twelve credit hours in applicable elective courses.~~ Mathematics 2030 (or the former 2130) is recommended.

The topic for the Honours project or thesis, Mathematics ~~419~~409A/B or Physics 490A/B, must be chosen with the prior approval of both departments.

CALENDAR ENTRY AFTER CHANGES

10.1.3 Mathematics and Physics Joint Major

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the following courses are required:

1) Six credit hours in Critical Reading and Writing (CRW) courses including at least 3 credit hours in English courses.
2) One of Computer Science 1001, Computer Science 1510, Engineering 1020 or an equivalent course in computer programming.
3) Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen then a Computer Science course from the second requirement 10.1.3.2 may be counted as 3 of these hours).
4) Mathematics 1000 (or 1006), 1001, 2000, 2030, 2050, 2051, 2260, 2320, 3000, 3132, 3202.
5) Physics 1050 (or 1020), 1051, 2053, 2055, 2750 (or 2056), 2820, 3220, 3400, 3500, 3750 and one of 3800 or 3900.
6) Mathematics 3161 or Physics 3820.
7) Twelve additional credit hours chosen from courses numbered 3000 or above that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. At least 3 credit hours must be selected from courses offered by each Department.

10.2.2 Mathematics and Physics Joint Honours

As a component of the Degree Regulation for the Honours Degree of Bachelor of Science, the following courses are required:

1) Six credit hours in Critical Reading and Writing (CRW) courses including at least 3 credit hours in English courses.
2) One of Computer Science 1001, Computer Science 1510, Engineering 1020 or an equivalent course in computer programming.
3) Six credit hours in a science other than Mathematics or Physics (if Computer Science is chosen then a Computer Science course from the second requirement 10.2.2.2 may be counted as 3 of these hours).
4) Mathematics 1000 (or 1006), 1001, 2000, 2050, 2051, 2260, 2320, 3000, 3001, 3132, 3202, 3210.

5) Physics 1050 (or 1020), 1051, 2053, 2055, 2750 (or 2056), 2820, 3220, 3400, 3500, 3750, one of 3800 or 3900, and a further three credit hours numbered 3000 or higher.
6) One of Mathematics 3161 or Physics 3820 and one of Mathematics 4160 or Physics 4820.
7) Physics 490A/B or Mathematics 409A/B.
8) Twelve additional credit hours chosen from courses numbered 4000 or higher that are offered by the Department of Mathematics and Statistics or the Department of Physics and Physical Oceanography. At least 3 credit hours must be selected from courses offered by each Department.
9) Mathematics 2030 (or the former 2130) is recommended.

The topic for the Honours project or thesis, Mathematics 409A/B or Physics 490A/B, must be chosen with the prior approval of both departments.

SECONDARY CALENDAR CHANGES

11.9 Mathematics and Statistics

4. ~~Applied~~ Mathematics and Physics Joint Honours (B.Sc. only)
5. ~~Applied~~ Mathematics and Physics Joint Major (B.Sc. only)

11.11 Physics and Physical Oceanography

1. ~~Applied~~ Mathematics and Physics Joint Honours
2. ~~Applied~~ Mathematics and Physics Joint Major

SECONDARY CALENDAR ENTRIES AFTER CHANGES

11.9 Mathematics and Statistics

4. Mathematics and Physics Joint Honours (B.Sc. only)
5. Mathematics and Physics Joint Major (B.Sc. only)

11.11 Physics and Physical Oceanography

1. Mathematics and Physics Joint Honours
2. Mathematics and Physics Joint Major

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT

Academic Unit	Response Received
Humanities and Social Sciences	
Business Administration	
Education	
Engineering and Applied Science	
Human Kinetics and Recreation	
Marine Institute	
Medicine	
Music	
Nursing	
Pharmacy	
Science	
Biochemistry	
Biology	
Chemistry	
Computer Science	

Academic Unit	Response Received
Earth Sciences	
Mathematics and Statistics	
Ocean Sciences	
Physics and Physical Oceanography	
Psychology	
Social Work	
Library	
Grenfell - Arts and Social Science	
Grenfell - Science and the Environment	
Grenfell - Fine Arts	
Labrador Institute	

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- X Amended or deleted course(s):
- ☐ 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
STAT 2500 Statistics for Business and Arts Students

REVISED COURSE NUMBER AND TITLE
STAT 2500 Statistical Foundations for Data Analytics

ABBREVIATED COURSE TITLE
Stat Foundations D Analytics

RATIONALE
STAT 2500 is one of our service courses that is included in many programmes. It has been offered with minimal changes through the years. However, the field has changed. We live in the information age, and our ability to collect data has evolved radically. Individuals are exposed to large amounts of data daily in their professional lives. This requires developing skills appropriate for analyses that use new technologies. We consider that a first course in statistics should also provide the foundations for data analytics and include an extended section in exploratory data analysis using state-of-the-art software and techniques. The restructured STAT 2500 aims to do that by reorganising the content and increasing the emphasis on exploratory data analysis while preserving as much as possible of the original content. We consider that the restructured course promotes statistics literacy and helps develop the students' analytics skills.

ANTICIPATED EFFECTIVE DATE
September 2025

CALENDAR CHANGES

i) 13.9.2 Statistics Courses (St. John's Campus Section)

STAT 2500 ~~Statistics for Business and Arts Students~~ Statistical Foundations for Data Analytics covers ~~descriptive statistics (including histograms, stem-and-leaf plots and box plots), elementary probability, random variables, the binomial distribution, the normal distribution, sampling distribution, estimation and hypothesis testing including both one and two sample tests, paired comparisons, correlation and regression, related applications.~~ fundamental concepts such as population, sample, probability, random variables, and their distributions, enabling students to grasp modern data analytics. The course also includes various exploratory data analysis and visualization techniques using specialized statistical software such as R. Additional topics include point and

interval estimation, hypothesis testing for one or more populations, and a brief overview of correlation and simple linear regression.

CR: STAT 2550, the former 2510, Psychology 2910, 2925 and the former 2900
LH: one 90 minute lab per week. ~~Statistical computer package will be used in the laboratory, but no prior computing experience is assumed~~ Lab computations are done with appropriate statistical software such as R, although no prior statistics computing experience is assumed.
PR: 3 credit hours in Mathematics or Statistics courses, or a combination of placement test and high school Mathematics scores acceptable to the Department

ii) 13.22 Mathematics and Statistics (Grenfell Campus Section)

STAT 2500 ~~Statistics for Business and Arts Students~~ Statistical Foundations for Data Analytics covers ~~descriptive statistics (including histograms, stem-and-leaf plots and box plots), elementary probability, random variables, the binomial distribution, the normal distribution, sampling distribution, estimation and hypothesis testing including both one and two sample tests, paired comparisons, correlation and regression, related applications.~~ fundamental concepts such as population, sample, probability, random variables, and their distributions, enabling students to grasp modern data analytics. The course also includes various exploratory data analysis and visualization techniques using specialized statistical software such as R. Additional topics include point and interval estimation, hypothesis testing for one or more populations, and a brief overview of correlation and simple linear regression.

CR: STAT 2550, the former STAT 2510, Psychology 2910, ~~Psychology~~ 2925 and the former ~~Psychology~~ 2900
LH: 1.5
PR: 3 credit hours in Mathematics or Statistics courses, or a combination of placement test and high school Mathematics scores acceptable to the School of Science and the Environment

CALENDAR ENTRY AFTER CHANGES

i) 13.9.2 Statistics Courses (St. John's Campus Section)

STAT 2500 Statistical Foundations for Data Analytics covers fundamental concepts such as population, sample, probability, random variables, and their distributions, enabling students to grasp modern data analytics. The course also includes various exploratory data analysis and visualization techniques using specialized statistical software such as R. Additional topics include point and interval estimation, hypothesis testing for one or more populations, and a brief overview of correlation and simple linear regression.

CR: STAT 2550, the former 2510, Psychology 2910, 2925 and the former 2900
LH: one 90 minute lab per week. Lab computations are done with appropriate statistical software such as R, although no prior statistics computing experience is assumed.
PR: 3 credit hours in Mathematics or Statistics courses, or a combination of placement test and high school Mathematics scores acceptable to the Department

ii) 13.22 Statistics Courses (Grenfell Campus Section)

STAT 2500 Statistical Foundations for Data Analytics covers fundamental concepts such as population, sample, probability, random variables, and their distributions, enabling students to grasp modern data analytics. The course also includes various exploratory data analysis and visualization techniques using specialized statistical software such as R. Additional topics include point and interval estimation, hypothesis testing for one or more populations, and a brief overview of correlation and simple linear regression.

CR: STAT 2550, the former 2510, Psychology 2910, 2925 and the former 2900
LH: 1.5
PR: 3 credit hours in Mathematics or Statistics courses, or a combination of placement test and high school Mathematics scores acceptable to the School of Science and the Environment.

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
Appendix Page

CONSULTATIONS SOUGHT
To be done.

Business	Yes/No
Education	Yes/No
Engineering	Yes/No
Grenfell Campus	Yes/No
Human Kinetics and Recreation	Yes/No
Humanities and Social Sciences	Yes/No
Labrador Institute	Yes/No
Marine Institute	Yes/No
Medicine	Yes/No
Music	Yes/No
Nursing	Yes/No
Pharmacy	Yes/No
Registrar's Office	Yes/No
Science	Yes/No
Social Work	Yes/No

LIBRARY REPORT
To be done.

RESOURCE IMPLICATIONS
This is an updated of an existing course. There are no resource implications.

APPENDIX: Sample Course Syllabus/Outline

STAT 2500 – Statistical Foundations for Data Analytics

Calendar description.

STAT 2500 Statistical Foundations for Data Analytics covers fundamental concepts such as population, sample, probability, random variables, and their distributions, enabling students to grasp modern data analytics. The course also includes various

exploratory data analysis and visualization techniques using specialized statistical software such as R. Additional topics include point and interval estimation, hypothesis testing for one or more populations, and a brief overview of correlation and simple linear regression.

CR STAT 2550 and former STAT 2510, Psychology 2910, 2925 and the former 2900
LH One 90 minute lab per week. Lab computations are done with appropriate statistical software such as R, although no prior statistics computing experience is assumed

PR 3 credit hours in Mathematics or Statistics courses, or a combination of placement test and high school Mathematics scores acceptable to the Department

Course outline

1) Exploratory data analysis
   a) Population, sample and random sampling
   b) Data types
   c) Summary statistics
   d) Data inspection and diagnostics

2) Basic concepts in probability
   a) Principles of probability
      i) Random experiment
      ii) Sample space and events
      iii) Ven and tree diagrams
      iv) Probability of an event
      v) Conditional probability
      vi) Law of Total Probability
      vii) Bayes' Theorem
   b) Discrete probability models and enumeration techniques
   c) Continuous probability models
   d) Random variables and probability functions
   e) Expected values, means and variances
   f) Median, quartiles, and quantiles
   g) Bivariate expected values, covariance, and correlation

3) Univariate families of distributions
   a) Bernoulli and binomial distributions
   b) Poisson distribution
   c) Geometric distribution
   d) Discrete uniform distribution
   e) Continuous uniform distribution
   f) Exponential distribution
   g) Normal (Gaussian) distribution
   h) Distributions of the sample mean, variance, and related ones.

4) Data visualization and statistical graphics
   a) Strip charts and dot plots
   b) Boxplots
   c) Stem-and-leaf plots
   d) Histograms and density estimators
   e) Pie charts and bar charts
   f) Multiple boxplots
   g) QQ-plots
   h) Scatterplots

5) Statistical inference
   a) Point estimation
   b) Interval estimation
   c) Hypotheses testing: one- and two-sample tests
   d) Testing the mean of more than two samples
   e) Linear correlation
   f) Simple linear regression

Textbook

• Course notes posted in Brightspace.

Reference texts

- AA Agresi, C Franklin and B Klingenberg, *Statistics: The art and science of learning from data*, 4th ed, Pearson.
- JT McClave, PG Benson and T Sincick, *Statistics for business economics*, Pearson. Ch 1–8,11.
- A Holmes, B Illowsky and S Dean, *Introductory business statistics*, OpenStax. Ch 1– 10,13
- WW Piegorsch. *Statistical data analytics*, Wiley. Ch 1–6.

Evaluation scheme

Type of evaluation	*Number*	*Weight*
Online quizzes	5	30%
Term exam	1	20%
Final exam	1	50%
Lab quizzes	6	6% (bonus)

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Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- X Amended or deleted course(s):
- ☐ 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: _____

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Undergraduate Calendar Change Proposal Form
Senate Summary Page for Courses

COURSE NUMBER AND TITLE
STAT 3521 Regression
STAT 3585 Computational Statistics
STAT 4530 Survey Sampling

RATIONALE
The Statistics 2530 course is added as a prerequisite option for the Statistics 3521 and 3585 courses. Data Science majors can fulfill their program requirements by taking either Statistics 2560 or Statistics 2530. Students who choose Statistics 2530 in place of Statistics 2560 will meet the same prerequisite requirements for Statistics 3521 and 3585.

The prerequisite for Statistics 4530 is changed from Stat 3411 to Stat 2410. Recently, the 3411 prerequisite has been waived for students with Statistics 2410. This has been successful and so we now consider 2410 a sufficient prerequisite for Statistics 4530.

ANTICIPATED EFFECTIVE DATE
September 2025

CALENDAR CHANGES – Section 13.9.2 Statistics Courses

STAT 3521 Regression covers inferences in linear regression analysis including estimation, confidence and prediction intervals, hypotheses testing and simultaneous inference; matrix approach to regression analysis, multiple linear regression, multicollinearity, model building and selection, polynomial regression, qualitative predictor variables.
PR: Mathematics 2050 and either STAT 3411 or both Mathematics 1001 and one of STAT 2501 or 2530 or 2560 or the former 2511

STAT 3585 Computational Statistics is an introduction to modern computational statistics, using a programming language which implements S. Emphasis will be placed on the development of algorithms and programs for generating random numbers, numerical techniques and programs for graphical exploratory data analysis, implementing specialized statistical procedures, Monte Carlo simulation and resampling.
PR: STAT 2410, and either STAT 2530 or STAT 2560

STAT 4530 Survey Sampling covers basic concepts, simple random sampling, unequal probability sampling and the Horvitz-Thompson principle, sufficiency, design

and modelling in sampling, ratio and regression estimators, stratified and cluster sampling, methods for elusive and/or hard-to-detect populations.
PR: STAT ~~3411~~ 2410

CALENDAR ENTRY AFTER CHANGES – Section 13.9.2 Statistics Courses

STAT 3521 Regression covers inferences in linear regression analysis including estimation, confidence and prediction intervals, hypotheses testing and simultaneous inference; matrix approach to regression analysis, multiple linear regression, multicollinearity, model building and selection, polynomial regression, qualitative predictor variables.
PR: Mathematics 2050 and either STAT 3411 or both Mathematics 1001 and one of STAT 2501 or 2530 or 2560 or the former 2511

STAT 3585 Computational Statistics is an introduction to modern computational statistics, using a programming language which implements S. Emphasis will be placed on the development of algorithms and programs for generating random numbers, numerical techniques and programs for graphical exploratory data analysis, implementing specialized statistical procedures, Monte Carlo simulation and resampling.
PR: STAT 2410, and either STAT 2530 or STAT 2560

STAT 4530 Survey Sampling covers basic concepts, simple random sampling, unequal probability sampling and the Horvitz-Thompson principle, sufficiency, design and modelling in sampling, ratio and regression estimators, stratified and cluster sampling, methods for elusive and/or hard-to-detect populations.
PR: STAT 2410

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Appendix Page

CONSULTATIONS SOUGHT
To be done.

Business	Yes/No
Education	Yes/No
Engineering	Yes/No
Grenfell Campus	Yes/No
Human Kinetics and Recreation	Yes/No
Humanities and Social Sciences	Yes/No
Labrador Institute	Yes/No
Marine Institute	Yes/No
Medicine	Yes/No
Music	Yes/No
Nursing	Yes/No
Pharmacy	Yes/No
Registrar's Office	Yes/No
Science	Yes/No
Social Work	Yes/No

LIBRARY REPORT
To be done.

RESOURCE IMPLICATIONS
There are no resource implications.

Department of Psychology
Proposed Calendar Changes
October 2024

Contents

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form

Part I: Program Regulations

1. Changes to Program Regulations

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Senate Summary Page for Programs

1.Program Regulations

PROGRAM TITLE
11.12 Psychology

RATIONALE
This is a substantial change to the structure of the Psychology program. The current program includes some bottlenecks in requirements that can lead to significant delays in degree completion for students who experience issues with one or more courses at the 2000 level. It also does not make the most efficient use of teaching resources as multiple versions of similar content are offered, including one course for Majors and one for non-Majors. Also, Majors also are not exposed to most area-specific content until the 3000 level, and some interesting course offerings have usage limitations for Majors, so that they only can be taken as electives.

The revised program will remove redundancies in instruction by eliminating the non-Majors version of several courses, and instead offering one combined course. This will allow Majors to access more specific area content beginning at the 2000 level, and will remove usage limitations for some course offerings that previously could only be used as electives for Majors. The above will allow for the creation of new course offerings for Majors at the 3000 level, which will be offered on a rotation basis, and will improve the diversity of offerings in all areas of Psychology. The revised program also opens up additional courses at the 2000 level to broaden the offerings for Psychology Minors, including a few specific courses that are requirements for other programs (e.g., some Linguistics students require a course in Human Cognition for eligibility for graduate programs; we previously had not offered such a course for non-Majors in well over a decade).

ANTICIPATED EFFECTIVE DATE
2025-2026 Academic Calendar

CALENDAR CHANGES

11.12.3 Admission to Honours Programs

The Honours programs in the Department of Psychology are designed for students who would like to concentrate their studies or pursue graduate work. Students who wish to be admitted to these programs must submit an application to the Department of Psychology by March 15th for Fall semester registration. This form is available on the Department of Psychology website in the Winter semester. To be eligible for admission, students must have successfully completed Psychology 2910, 2911, ~~2520 or 2521~~, ~~and~~ 2930, and 3910; ~~and~~ a minimum of 12 credit hours in Psychology 2X21 ~~major (restricted)~~ courses; and a minimum of 9 credit hours in Psychology courses at or above the 3000 level, including at least 3 credit hours in 3X5X courses ~~at the 3000- or 4000-level~~ by the end of the semester in which the student is applying; and have obtained in these courses a grade of "B" or better, or an average of 75% or higher.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on securing a thesis supervisor and academic performance in the above major courses. ~~Once~~ Selected students can enroll in Psychology 499A only after ~~securing a~~ their thesis supervisor is confirmed by the, ~~and providing confirmation of supervision to the~~ Academic Program Officer or Deputy Head, Undergraduate.

Note:
~~Students are strongly advised to enroll in Psychology 3900 in the 3rd year of their program, i.e., in the academic year prior to beginning Psychology 499A.~~

Students are advised to consult the Bachelor of Arts (Honours) Degree Regulations or Degree Regulations for the Honours Degree of Bachelor of Science, as appropriate.

11.12.4 Requirements for a Major in Psychology

Students completing this program cannot receive credit for Psychology 2920. Students who intend to pursue graduate studies should take courses leading to the Honours degree. Regular meetings with the Academic Program Officer are also strongly recommended.

1. Students may Major in Psychology as part of either a B.A. or a B.Sc. program, and should consult the Degree Regulations for the General Degree of Bachelor of Science or the Degree Regulations for the General Degree of Bachelor of Arts, as appropriate. All Majors are required to complete a minimum of 42 credit hours of Psychology as listed below:

   a. Psychology 1000, 1001, ~~2520 (or 2521),~~ 2910, 2911, 2930.

b. Twelve credits hours in any Psychology 2X21.

c. ~~Twelve credit hours in Psychology chosen from the following: 3050, 3100, the former PSYC 3250, 3251, 3350, 3450, 3620, 3650, 3750, or one of 3800, 3810, 3820, 3830, 3840 or 3860.~~ Nine credit hours of Psychology courses at the 3000-level, including at least three credit hours in any Psychology 3X5X, and an additional six credit hours in any 3000-level course in Psychology other than 3550, with no more than three credit hours in any 385X courses.

d. ~~Twelve~~ Six credit hours of 4000-level courses in Psychology, of which ~~at least~~ one must be a research experience course (4X7X) and one must be a selected topics or a seminar course (4X5X).

2. Psychology Majors following the B.Sc. program are also required to successfully complete the following:

a. Mathematics 1000 (or equivalent), Mathematics 1006 or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent).

b. Biology 1001 and 1002.

c. Either Chemistry 1050 and 1051 (or 1200 and 1001 or 1010 and the former 1011); or Physics 1020 (or 1050) and 1021 (or 1051).

Note:
First year students should think carefully about whether Chemistry or Physics best suits their future program needs. Students should examine the prerequisites for upper-level science courses and attempt to take them in their first year.

d. Six credit hours of laboratory courses at the 2000 level or above in one of Biology, Chemistry, Computer Science, Human Biosciences, Ocean Sciences or Physics. Students are advised to consult the Course Descriptions section of the Calendar for their chosen lab courses to ensure pre-requisites are met.

Note:
Biology~~/Psychology~~ 3750, ~~and~~ 4701, and ~~Biology~~ 3053 cannot be used to satisfy the requirement of 6 laboratory credit hours at the 2000 level or above.

3. Psychology Majors following the B.A. program are also required to successfully complete Mathematics 1000 (or equivalent), Mathematics 1006, or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent), and are encouraged to complete at least 6 credit hours in Biology.

11.12.5 Requirements for Honours in Psychology

Students completing this program cannot receive credit for Psychology 2920.

1. Honours students in Psychology should consult Degree Regulations for the Honours Degree of Bachelor of Science or Bachelor of Arts (Honours) Degree Regulations as appropriate. All Honours students are required to successfully complete the 66~~0~~ credit hours of Psychology as listed below:

a. Psychology 1000, 1001, ~~2520 (or 2521),~~ 2910, 2911, 2930, 3550, 39~~0~~10, ~~4910~~, 499A/B

b. Fifteen credit hours in any Psychology 2X21.

c. ~~Eighteen credit hours chosen from the alternatives listed in Clause 1. b. of the requirements for a Major in Psychology~~ A minimum of six credit hours in any Psychology 3X5X, and an additional nine credit hours in any 3000-level course in Psychology other than 3550 or 3910, with no more than three credit hours in any 385X courses.

d. ~~Twelve~~ Nine credit hours of 4000-level courses in Psychology, not including 499A/B, of which ~~at least~~ one must be a research experience course (4X7X) and ~~one~~ two must be ~~a~~ selected topics or ~~a~~ seminar course~~s~~.

2. Honours students must also successfully complete the requirements listed in either Clause 2. or Clause 3., as applicable, of the requirements for a Major in Psychology.

3. Honours students will be required to submit in their graduating year, an undergraduate thesis (Psychology 499A/B) which demonstrates their competence in Experimental Psychology.

4. The overall evaluation of the Honours dissertation (i.e. the Psychology 499A/B grading evaluation) will result in one of the following grades being awarded:

Pass: Indicates performance meets expectations in the formal written report and in classwork.
Fail: Indicates failing performance in the formal written report and/or the classwork.

11.12.6 Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)

Students completing this program cannot receive credit for Psychology 2920.

A program is offered in the Psychology Department to provide an education in Behavioural Neuroscience. Students planning to enroll in the program are advised to consult with the ~~Head of the Department~~ Academic Program Officer at the earliest opportunity because certain course choices may restrict later options. Students who intend to pursue graduate studies should take courses leading to the Honours degree.

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the program for a Major in Behavioural Neuroscience shall include:

1. a. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930, 3800, 38202, and one of 3815~~0~~0, 383051, 384052, or 386053.

   b. Three credit hours in any Psychology 2X21 except 2821. ~~chosen from the following: 3050, 3100, the former 3250, 3251, 3350, 3450, 3620, 3650, 3750.~~

   c. Any research experience course (4X7X) and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854.

2. a. Mathematics 1000 (or equivalent), Mathematics 1006, or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent).

   b. Chemistry 1050 and 1051 (or 1200 and 1001).

   c. Physics 1020 (or 1050) and 1021 (or 1051).

e. Biology 1001 and 1002.

f. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.

3. Eighteen credit hours from the following courses chosen from at least two different sciences:

   a. Biology: Any 2000-, 3000-, or 4000-level course except 2040, 2041, 2120, 3053, or 3820.

   b. Chemistry: 2100, 2210, 2301 (or the former Chemistry 2300), 2302, 2400, 2401, 2610, or any 3000 or 4000 level mathematics course.

   c. Computer Science: Any 2000, 3000, or 4000 level course except the former 2650 and the former 2801.

   d. Human Biosciences: Any 2000-, 3000-, or 4000-level course except the former Biochemistry 2000, 2005, 2010, 2011, 3202, 3402, or 4502.

   e. Ocean Sciences: any 2000-, 3000-, or 4000-level course.

f. Mathematics: 2000, 2050, 2051, 2260, 2320, or any 3000 or 4000 level mathematics course.

g. Medicine 310A/B.

h. Physics: Any 2000, 3000, or 4000 level course except 2150, 2151, 3150, 3151.

Notes:

1. Credit may not be obtained for both Biology 3750 and Psychology ~~3750~~ 2721 ~~or for both Biology 4701 and Psychology 4701~~.

2. The courses listed under Clause 3 may have prerequisites. It is the student's responsibility to ensure that all prerequisites have been met, or that waivers have been obtained, before registering for these courses.

3. When selecting a Psychology 2X21 course to fulfill Clause 1b above, students should consider the prerequisite requirements for their research experience requirement in Clause 1c.

11.12.7 Requirements for Honours in Behavioural Neuroscience (B.Sc. Only)

Students in Behavioural Neuroscience should consult Degree Regulations for the Honours Degree of Bachelor of Science. Students completing this program cannot receive credit for Psychology 2920.

1. Honours students in Behavioural Neuroscience are required to successfully complete the following Psychology courses:

a. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930, 3800, 38202, 39100, ~~and~~ one of 3850, 3851, 3852, or 3853.

~~b. Three credit hours chosen from the following: the former 3250, 38105l, 38305l, 38405l, or 38605l.~~

b. Three credit hours in any Psychology 2X21, except 2821. ~~chosen from the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650, 3750.~~

c. Any research experience course (4X7X) and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854.

d. Psychology 499A/B, an undergraduate thesis to be submitted in their graduating year.

2. Honours students in Behavioural Neuroscience must also successfully complete the requirements listed in Clauses 2. and 3. of the requirements for a Major in Behavioural Neuroscience.

3. In accordance with Academic Standing under the Degree Regulations for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 1. and 3. of the requirements for a major in Behavioural Neuroscience and Clause 1 of the requirements for honours in Behavioural Neuroscience, except those at the 1000 level.

Notes:
1. Non-Psychology courses taken to fulfill the requirements of this Clause for a major in Behavioural Neuroscience are used to calculate eligibility for Honours standing.
2. When selecting a Psychology 2X21 course to fulfill Clause 1b above, students should consider the prerequisite requirements for their research experience requirement in Clause 1c.

11.12.9.2 Program of Study

In addition to the requirements below students must fulfill all requirements for either a Major in Psychology (B.A.), a Major in Psychology (B.Sc.), Major in Behavioural Neuroscience, Honours in Psychology (B.A.), Honours in Psychology (B.Sc.), or Honours in Behavioural Neuroscience. ~~Courses in each program are normally taken in blocks as shown in the appropriate program table~~. Students should consult with a faculty advisor each semester regarding course selection.

Students' status in the program is assessed at the end of each semester. To remain in PCOP, students must receive a passing grade in all required courses, and must maintain an average of at least 65% in all Psychology courses and a cumulative average of at least 65%. A student who fails a required course, fails to maintain an average of 65% in Psychology courses, or fails to maintain a cumulative average of 65%, will be required to withdraw from PCOP. The student in question may apply for readmission in a subsequent year after passing the specified required course(s) previously failed, or re-establishing the required average.

Students are required to successfully complete three work terms.

11.12.10 Suggested ~~Course Sequences~~ Work Term Schedule

Course patterns may vary. Students are encouraged to meet with the undergraduate coordinator early in their program in order to establish a course pattern that meets the requirements as set out in these regulations.

Term:	Fall	Winter	Spring
Year 1	AT 1	AT 2	
Year 2	AT 3	AT 4	WT 1
Year 3	AT 5	AT 6	WT 2
Year 4	AT 7	WT 3	
Year 5	AT 8		
AT = Academic Term; WT = Work Term			

~~11.12.10 Suggested Course Sequences~~

~~The tables below show suggested course sequences for the B.A. in Psychology (Co-operative), the B.Sc. in Psychology (Co-operative), the B.A. Honours in Psychology (Co-operative), the B.Sc. Honours in Psychology (Co-operative), the B.Sc. in Behavioural Neuroscience (Co-operative), and the B.Sc. Honours in Behavioural Neuroscience (Co-operative).~~

~~Course patterns may vary. Students are encouraged to meet with the undergraduate coordinator early in their program in order to establish a course pattern that meets the requirements as set out in these regulations.~~

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~~Suggested Course Sequence for B.A. in Psychology (Co-operative)~~

~~**Term**~~	~~**Suggested Courses**~~
~~**Fall Semester 1**~~	~~Critical Reading and Writing requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Mathematics 1000 or one of Mathematics 1090, 1050, 1051 Psychology 1000~~
~~**Winter Semester 2**~~	~~Critical Reading and Writing requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement One of Mathematics 1000, 1090, 1050 or 1051 (Psychology Majors are required to successfully complete Mathematics 1000 or two of 1090, 1050, 1051 (or equivalent). An Elective or Humanities and Social Sciences requirement can be taken if Mathematics 1000 was taken in Semester 1.) Psychology 1001~~

Suggested Course Sequence for B.A. in Psychology (Co-operative)

Term	Suggested Courses
Fall Semester 3	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 2520 or 2930 Psychology 2910
Winter Semester 4	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 2911 Psychology 2930 or 2520
Spring Work Term 1	Psychology 199W
Fall Semester 5	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology 3000-Level Core
Winter Semester 6	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology 3000-Level Core
Spring Work Term 2	Psychology 299W
Fall Semester 7	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 4000-Level Psychology Selected Topics course
Winter Work Term 3	Psychology 399W
Fall Semester 8	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 4000-Level Psychology Research Experience course

Suggested Course Sequence for B.Sc. in Psychology (Co-operative)

Suggested Course Sequence for B.A. in Psychology (Co-operative)

Term	Suggested Courses
Term	**Suggested Courses**
Fall Semester 1	Biology 1001 Chemistry 1010 (or 1050) or Physics 1020 (or 1050) (Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Critical Reading and Writing requirement Mathematics 1090 or 1000 Psychology 1000
Winter Semester 2	Biology 1002 the former Chemistry 1011 (or 1051) or Physics 1021 (or 1051) Critical Reading and Writing requirement Mathematics 1000 or Elective or Science requirement Psychology 1001
Fall Semester 3	Biology, Chemistry, or Physics Lab Course Elective or Science requirement Elective or Science requirement Psychology 2520 or 2930 Psychology 2910
Winter Semester 4	Biology, Chemistry, or Physics Lab Course Elective or Science requirement Elective or Science requirement Psychology 2911 Psychology 2930 or 2520
Spring Work Term 1	Psychology 199W
Fall Semester 5	Elective or Science requirement Elective or Science requirement Elective or Science requirement Psychology 3000-Level Core Psychology 3000-Level Core
Winter Semester 6	Elective or Science requirement Elective or Science requirement Elective or Science requirement Psychology 3000-Level Core Psychology 3000-Level Core
Spring Work Term 2	Psychology 299W
Fall	Elective or Science requirement

Suggested Course Sequence for B.A. in Psychology (Co-operative)

Term	Suggested Courses
Semester 7	Elective or Science requirement Elective or Science requirement Psychology 4000-Level Psychology Selected Topics
Winter Work Term 3	Psychology 399W
Fall Semester 8	Elective or Science requirement Elective or Science requirement Elective or Science requirement Psychology 4000-Level Psychology Research Experience

Suggested Course Sequence for B.A. (Honours) in Psychology (Co-operative)

Term	Suggested Courses
Fall Semester 1	Critical Reading and Writing requirement B.A. Language Study requirement Elective or Humanities and Social Sciences requirement Mathematics 1000 or one of Mathematics 1090, 1050, 1051 Psychology 1000
Winter Semester 2	Critical Reading and Writing requirement B.A. Language Study requirement Elective or Humanities and Social Sciences requirement One of Mathematics 1000, 1090, 1050 or 1051 (Psychology Majors are required to successfully complete Mathematics 1000 or two of 1090, 1050, 1051 (or equivalent). An Elective or Humanities and Social Sciences requirement can be taken if Mathematics 1000 was taken in Semester 1.) Psychology 1001
Fall Semester 3	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 2520 or 2930 Psychology 2910
Winter Semester 4	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 2911 Psychology 2930 or 2520
Spring	Psychology 199W

Suggested Course Sequence for B.A. (Honours) in Psychology (Co-operative)

Term	Suggested Courses
Work Term 1	
Fall Semester 5	Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology 3000-Level Core Psychology 3000-Level Core Psychology 3900
Winter Semester 6	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology Research Experience course Psychology 4910
Spring Work Term 2	Psychology 299W
Fall Semester 7	Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology 4000-Level Core Psychology Selected Topics course Psychology 499A
Winter Work Term 3	Psychology 399W
Spring (Optional)	Psychology 499A or 499B
Fall Semester 8	Elective or Humanities and Social Sciences requirement Elective or Humanities and Social Sciences requirement Psychology 3000-Level Core Psychology 4000-Level Core Psychology 499B

Suggested Course Sequence for B.Sc. (Honours) in Psychology (Co-operative)

Term	Suggested Courses
Fall Semester 1	Biology 1001 Chemistry 1010 (or 1050) or Physics 1020 (or 1050) (Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Critical Reading and Writing requirement Mathematics 1090 or Mathematics 1000 Psychology 1000

Suggested Course Sequence for B.A. (Honours) in Psychology (Co-operative)

Term	Suggested Courses
Winter Semester 2	Biology 1002 the former Chemistry 1011 (or 1051) or Physics 1021 (or 1051) Critical Reading and Writing requirement Mathematics 1000 or Elective or Science requirement Psychology 1001
Fall Semester 3	Biology, Chemistry, or Physics Lab Course Elective or Science requirement Elective or Science requirement Psychology 2520 or 2930 Psychology 2910
Winter Semester 4	Biology, Chemistry, or Physics Lab Course Elective or Science requirement Elective or Science requirement Psychology 2911 Psychology 2930 or 2520
Spring Work Term 1	Psychology 199W
Fall Semester 5	Elective or Science requirement Elective or Science requirement Psychology 3000-Level Core Psychology 3000-Level Core Psychology 3900
Winter Semester 6	Elective or Science requirement Psychology 3000-Level Core Psychology 3000-Level Core Psychology Research Experience Psychology 4910
Spring Work Term 2	Psychology 299W
Fall Semester 7	Elective or Science requirement Psychology 3000-Level Core Psychology 4000-Level Psychology Selected Topics Psychology 499A
Winter Work Term 3	Psychology 399W

Suggested Course Sequence for B.A. (Honours) in Psychology (Co-operative)

Term	Suggested Courses
-	
Spring (Optional)	Psychology 499A or 499B
Fall Semester 8 -	Elective or Science requirement Elective or Science requirement Psychology 3000-Level Core Psychology 4000-Level Core Psychology 499B

Suggested Course Sequence for B.Sc. in Behavioural Neuroscience (Co-operative)

Term	Suggested Courses
Fall Semester 1	Biology 1001 or Physics 1020 (or 1050) (Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Chemistry 1050 (or 1200) Critical Reading and Writing requirement Mathematics 1090 or Mathematics 1000 Psychology 1000
Winter Semester 2	Biology 1002 or Physics 1021 (or 1051) Chemistry 1051 (or 1001) Critical Reading and Writing requirement Mathematics 1000 or Mathematics 1001 Psychology 1001
Fall Semester 3	BHNR Requirement 1 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Physics 1020 (or 1050) or Biology 1001 (Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Psychology 2521 or 2930 Psychology 2910
Winter Semester 4	BHNR Requirement 2 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Physics 1021 (or 1051) or Biology 1002 Mathematics 1001 or Elective or Science requirement Psychology 2911 Psychology 2930 or 2521
Spring Work Term 1	Psychology 199W

Suggested Course Sequence for B.Sc. in Behavioural Neuroscience (Co-operative)

Term	Suggested Courses
Fall Semester 5	BHNR Requirement 3 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Psychology 3810, 3830, 3840, or 3860 Psychology 3800
Winter Semester 6	BHNR Requirement 4 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Psychology 3000-Level Core Psychology 3820
Spring Work Term 2	Psychology 299W
Fall Semester 7	BHNR Requirement 5 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Elective or Science requirement Psychology Research Experience course
Winter Work Term 3	Psychology 399W
Fall Semester 8	BHNR Requirement 6 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Elective or Science requirement Psychology Selected Topics course

Suggested Course Sequence for B.Sc. (Honours) in Behavioural Neuroscience (Co-operative)

Term	Suggested Courses
Fall Semester 1 -	Biology 1001 or Physics 1020 (or 1050) (Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Chemistry 1050 (or 1200) Critical Reading and Writing requirement Mathematics 1090 or 1000 Psychology 1000
Winter Semester 2 -	Biology 1002 or Physics 1021 (or 1051) Chemistry 1051 (or 1001) Critical Reading and Writing requirement

Suggested Course Sequence for B.Sc. in Behavioural Neuroscience (Co-operative)

Term	Suggested Courses
	Mathematics 1000 or 1001 Psychology 1001
Fall Semester 3 -	BHNR Requirement 1 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Physics 1020 (or 1050) or Biology 1001(Students registered in Physics 1050 must also be registered in Mathematics 1000 (not 1090)). Psychology 2521 or 2930 Psychology 2910
Winter Semester 4 -	BHNR Requirement 2 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Mathematics 1001 or Elective or Science requirement Physics 1021 (or 1051) or Biology 1002 Psychology 2911 Psychology 2930 or 2521
Spring Work Term 1 -	Psychology 199W
Fall Semester 5 -	BHNR Requirement 3 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Psychology 3810, 3830, 3840, or 3860 Psychology 3800 Psychology 3900
Winter Semester 6 -	BHNR Requirement 4 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Psychology 3000-level core Psychology 3820
Spring Work Term 2 -	Psychology 299W
Fall Semester 7 -	BHNR Requirement 5 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Psychology Research Experience course Psychology 499A

Suggested Course Sequence for B.Sc. in Behavioural Neuroscience (Co-operative)

Term	Suggested Courses
Winter Work Term 3	Psychology 399W
Spring (Optional)	Psychology 499A or 499B
Fall Semester 8	BHNR Requirement 6 (BHNR Requirement 1-6 specified in clause 3, Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)). Elective or Science requirement Elective or Science requirement Psychology Selected Topics course Psychology 499B

13.12.1 Non-Restricted Courses

These courses are open to all students who have the appropriate prerequisites. Students who intend to major in Psychology should note the credit restrictions for PSYC 2010, 2100, 2440, 2610, 2810, 2920, and 3640 as taking any of these courses will reduce options in the Majors program

CALENDAR ENTRY AFTER CHANGES

11.12.3 Admission to Honours Programs

The Honours programs in the Department of Psychology are designed for students who would like to concentrate their studies or pursue graduate work. Students who wish to be admitted to these programs must submit an application to the Department of Psychology by March 15th for Fall semester registration. This form is available on the Department of Psychology website in the Winter semester. To be eligible for admission, students must have successfully completed Psychology 2910, 2911, 2930, and 3910; a minimum of 12 credit hours in Psychology 2X21 courses; and a minimum of 9 credit hours in Psychology courses at or above the 3000 level, including at least 3 credit hours in 3X5X courses by the end of the semester in which the student is applying; and have obtained in these courses a grade of “B” or better, or an average of 75% or higher.

Students who fulfill the eligibility requirements compete for a limited number of available spaces. Selection is based on securing a thesis supervisor and academic performance in the above major courses. Selected students can enroll in Psychology 499A only after their thesis supervisor is confirmed by the Academic Program Officer or Deputy Head, Undergraduate.

Note: Students are advised to consult the Bachelor of Arts (Honours) Degree Regulations or Degree Regulations for the Honours Degree of Bachelor of Science, as appropriate.

11.12.4 Requirements for a Major in Psychology

Students completing this program cannot receive credit for Psychology 2920. Students who intend to pursue graduate studies should take courses leading to the Honours degree. Regular meetings with the Academic Program Officer are also strongly recommended.

1. Students may Major in Psychology as part of either a B.A. or a B.Sc. program, and should consult the Degree Regulations for the General Degree of Bachelor of Science or the Degree Regulations for the General Degree of Bachelor of Arts, as appropriate. All Majors are required to complete a minimum of 42 credit hours of Psychology as listed below:

a. Psychology 1000, 1001, 2910, 2911, 2930.

b. Twelve credits hours in any Psychology 2X21.

c. Nine credit hours of Psychology courses at the 3000-level, including at least three credit hours in any Psychology 3X5X, and an additional six credit hours

in any 3000-level course in Psychology other than 3550, with no more than three credit hours in any 385X courses.

d. Six credit hours of 4000-level courses in Psychology, of which one must be a research experience course (4X7X) and one must be a selected topics or a seminar course (4X5X).

2. Psychology Majors following the B.Sc. program are also required to successfully complete the following:

a. Mathematics 1000 (or equivalent), Mathematics 1006, or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent).

b. Biology 1001 and 1002.

c. Either Chemistry 1050 and 1051 (or 1200 and 1001 or 1010 and the former 1011); or Physics 1020 (or 1050) and 1021 (or 1051).

Note:
First year students should think carefully about whether Chemistry or Physics best suits their future program needs. Students should examine the prerequisites for upper-level science courses and attempt to take them in their first year.

d. Six credit hours of laboratory courses at the 2000 level or above in one of Biology, Chemistry, Computer Science, Human Biosciences, Ocean Sciences or Physics. Students are advised to consult the Course Descriptions section of the Calendar for their chosen lab courses to ensure pre-requisites are met.

Note:
Biology 3750, 4701, and 3053 cannot be used to satisfy the requirement of 6 laboratory credit hours at the 2000 level or above.

3. Psychology Majors following the B.A. program are also required to successfully complete Mathematics 1000 (or equivalent), Mathematics 1006, or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent), and are encouraged to complete at least 6 credit hours in Biology.

11.12.5 Requirements for Honours in Psychology

Students completing this program cannot receive credit for Psychology 2920.

1. Honours students in Psychology should consult Degree Regulations for the Honours Degree of Bachelor of Science or Bachelor of Arts (Honours) Degree Regulations as appropriate. All Honours students are required to successfully complete the 66 credit hours of Psychology as listed below:

a. Psychology 1000, 1001, 2910, 2911, 2930, 3910, 3550, 499A/B

b. Fifteen credit hours in any Psychology 2X21.

c. A minimum of six credit hours in any Psychology 3X5X, and an additional nine credit hours in any 3000-level course in Psychology other than 3910 or 3550, with no more than three credit hours in any 385X courses.

d. Nine credit hours of 4000-level courses in Psychology, not including 499A/B, of which one must be a research experience course (4X7X) and two must be selected topics or seminar courses.

2. Honours students must also successfully complete the requirements listed in either Clause 2. or Clause 3., as applicable, of the requirements for a Major in Psychology.

3. Honours students will be required to submit in their graduating year, an undergraduate thesis (Psychology 499A/B) which demonstrates their competence in Experimental Psychology.

4. The overall evaluation of the Honours dissertation (i.e. the Psychology 499A/B grading evaluation) will result in one of the following grades being awarded:

Pass: Indicates performance meets expectations in the formal written report and in classwork.
Fail: Indicates failing performance in the formal written report and/or the classwork.

11.12.6 Requirements for a Major in Behavioural Neuroscience (B.Sc. Only)

Students completing this program cannot receive credit for Psychology 2920.

A program is offered in the Psychology Department to provide an education in Behavioural Neuroscience. Students planning to enroll in the program are advised to consult with the Academic Program Officer at the earliest opportunity because certain course choices may restrict later options. Students who intend to pursue graduate studies should take courses leading to the Honours degree.

As a component of the Degree Regulations for the General Degree of Bachelor of Science, the program for a Major in Behavioural Neuroscience shall include:

1. a. Psychology 1000, 1001, 2822, 2910, 2911, 2930, 3800, 3802, and one of 3850, 3851, 3852, or 3853.

   b. Three credit hours in any Psychology 2X21 except 2821.

c. Any research experience course (4X7X) and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854.

2. a. Mathematics 1000 (or equivalent), Mathematics 1006, or Statistics 1500, or two of Mathematics 1090, 1050, 1051 (or equivalent).

   b. Chemistry 1050 and 1051 (or 1200 and 1001).

c. Physics 1020 (or 1050) and 1021 (or 1051).

d. Biology 1001 and 1002.

e. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.

3. Eighteen credit hours from the following courses chosen from at least two different sciences:

a. Biology: Any 2000-, 3000-, or 4000-level course except 2040, 2041, 2120, 3053, or 3820.

b. Chemistry: 2100, 2210, 2301 (or the former Chemistry 2300), 2302, 2400, 2401, 2610, or any 3000 or 4000 level mathematics course.

c. Computer Science: Any 2000, 3000, or 4000 level course except the former 2650 and the former 2801.

d. Human Biosciences: Any 2000-, 3000-, or 4000-level course except the former Biochemistry 2000, 2005, 2010, 2011, 3202, 3402, or 4502.

e. Ocean Sciences: any 2000-, 3000-, or 4000-level course.

f. Mathematics: 2000, 2050, 2051, 2260, 2320, or any 3000 or 4000 level mathematics course.

g. Medicine 310A/B.

h. Physics: Any 2000, 3000, or 4000 level course except 2150, 2151, 3150, 3151.

Notes:

1. Credit may not be obtained for both Biology 3750 and Psychology 2721.

2. The courses listed under Clause 3 may have prerequisites. It is the student's responsibility to ensure that all prerequisites have been met, or that waivers have been obtained, before registering for these courses.

3. When selecting a Psychology 2X21 course to fulfill clause 1b above, students should consider the prerequisite requirements for their research experience requirement in clause 1c.

11.12.7 Requirements for Honours in Behavioural Neuroscience (B.Sc. Only)

Students in Behavioural Neuroscience should consult Degree Regulations for the Honours Degree of Bachelor of Science. Students completing this program cannot receive credit for Psychology 2920.

1. Honours students in Behavioural Neuroscience are required to successfully complete the following Psychology courses:

a. Psychology 1000, 1001, 2822, 2910, 2911, 2930, 3800, 3802, 3910, and one of 3850, 3851, 3852, or 3853.

b. Three credit hours in any Psychology 2X21, except 2821

c. Any research experience course (4X7X) and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854.

d. Psychology 499A/B, an undergraduate thesis to be submitted in their graduating year.

2. Honours students in Behavioural Neuroscience must also successfully complete the requirements listed in Clauses 2. and 3. of the requirements for a Major in Behavioural Neuroscience.

3. In accordance with Academic Standing under the Degree Regulations for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 1. and 3. of the requirements for a major in Behavioural Neuroscience and Clause 1 of the requirements for honours in Behavioural Neuroscience, except those at the 1000 level.

Notes:

1. Non-Psychology courses taken to fulfill the requirements of this Clause for a major in Behavioural Neuroscience are used to calculate eligibility for Honours standing.

2. When selecting a Psychology 2X21 course to fulfill clause 1b above, students should consider the prerequisite requirements for their research experience requirement in clause 1c.

11.12.9.2 Program of Study

In addition to the requirements below students must fulfill all requirements for either a Major in Psychology (B.A.), a Major in Psychology (B.Sc.), Major in Behavioural Neuroscience, Honours in Psychology (B.A.), Honours in Psychology (B.Sc.), or Honours in Behavioural Neuroscience. Students should consult with a faculty advisor each semester regarding course selection.

Students' status in the program is assessed at the end of each semester. To remain in PCOP, students must receive a passing grade in all required courses, and must maintain an average of at least 65% in all Psychology courses and a cumulative average of at least 65%. A student who fails a required course, fails to maintain an average of 65% in Psychology courses, or fails to maintain a cumulative average of 65%, will be required to withdraw from PCOP. The student in question may apply for readmission in a subsequent year after passing the specified required course(s) previously failed, or re-establishing the required average.

Students are required to successfully complete three work terms.

11.12.10 Suggested Work Term Schedule

Course patterns may vary. Students are encouraged to meet with the undergraduate coordinator early in their program in order to establish a course pattern that meets the requirements as set out in these regulations.

Term:	Fall	Winter	Spring
Year 1	AT 1	AT 2	
Year 2	AT 3	AT 4	WT 1
Year 3	AT 5	AT 6	WT 2
Year 4	AT 7	WT 3	
Year 5	AT 8		
AT = Academic Term; WT = Work Term			

13.12.1 Non-Restricted Courses

These courses are open to all students who have the appropriate prerequisites.

SECONDARY CALENDAR CHANGES

10.2.6 Biochemistry and Psychology (Behavioural Neuroscience) Joint Honours

Note: The last year of admission into the Biochemistry and Psychology (Behavioural Neuroscience) joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Psychology (Behavioural Neuroscience).

Note:

Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required to complete the 120 credit hours in courses required for the degree:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses;

2. Chemistry 1050 and 1051 (or 1200 and 1001), Biology 1001 and 1002, Mathematics 1000 and 1001, Physics 1050, (or 1020), 1051 (or 1021);

3. Biochemistry 2200 (or 2100), 2201, 2901, 3105, 3206;

4. Either Biochemistry 3108 and 3207, or Medicine 310A/B;

5. 9 credit hours to be selected from Biochemistry 3906 or 3907, 4002, 4101, 4102, 4103, 4104, 4105, 4200, 4201, 4210 or 4211, 4230, 4231, 4232-4239;

6. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930, 3800, 38~~20~~02, 391~~0~~0~~0~~;

7. Three credit hours in Psychology chosen from the following: ~~the former PSYC 3250, 3810, 3830, 3840, or 3860~~ 3850, 3851, 3852, 3853;

8. Three credit hours in any Psychology 2X21 course, except 2821, or Psychology 3251 or 3350; ~~chosen from the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650, 3750;~~

9. Any Psychology research experience course and one of Psychology 4850, 4851, 4852, 4853, or 4854;

10. Either Biochemistry 499A/B or Psychology 499A/B; and

11. Chemistry 2301, 2400, 2401.

Notes:

As provided for under the Graduation Requirements for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 3. - 10. above, except those at the 1000 level.

Students in first year intending to follow this program should note the regulations for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

10.2.7 Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) Joint Honours

Note: The last year of admission into the Biochemistry (Nutrition) and Psychology (Behavioural Neuroscience) joint honours program will be in 2023-2024 academic year. In 2024-2025 and beyond, students who are entering the third year of study may apply for the joint honours program in Human Biosciences and Psychology (Behavioural Neuroscience).

Note:

Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses;

2. Chemistry 1050 and 1051 (or 1200 and 1001), Biology 1001 and 1002, Mathematics 1000, Physics 1020 or 1050, and 1021 (or 1051);

3. Biochemistry 2200 (or 2100), 2201, 2600, 2901, 3203, 3206, 3906, Medicine 310A/B, 4300, 4301, 4502;

4. Three credit hours chosen from: Biochemistry 3052, 3108, 3402, 3600, 4002, 4105, 4200, 4230, 4231, 4240, 4241-4249, Biology 3050;

5. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930, 3800, 3802~~0~~, 3910~~0~~;

6. Three credit hours in any Psychology 385X course ~~chosen from the following: the former 3250, 3810, 3830, 3840, or 3860~~;

7. Three credit hours in any Psychology 2X21 course except 2821, or Psychology 3251 or 3350 ~~chosen from the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650, 3750~~;

8. Any Psychology research experience course and one of Psychology 4850, 4851, 4852, 4853, or 4854;

9. Either Biochemistry 499A/B or Psychology 499A/B;

10. Chemistry 2400; and

11. Other courses to complete at least the prescribed minimum of 120 credit hours in courses for the Joint Honours Degree.

Notes:

1. As provided for under the Graduation Requirements for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, or an average of 75% or higher in all the required courses listed in Clauses 3. - 9. above, except those at the 1000 level.

2. Students in first year intending to follow this program should note the regulations as outlined for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

10.2.9 Biology and Psychology Joint Honours

Note: Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Biology 1001, 1002, 2060, 2250, 2600, 2900; one of 3401, 3402, or 4404; four Biology electives at the 2000, 3000 or 4000 level not including Biology 499A or 499B.

2. Psychology 1000, 1001, ~~2520~~ 2821 (or ~~2521~~ 2822), 2910, 2911, 2930, ~~one of the former PSYC 3250, 3800, 3810, 3830, 3840, or 3860~~ three credit hours in any Psychology 385X; 3910~~0~~, 3550 ~~4910~~; ~~one of the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650~~ three credit hours in any other Psychology 2X21 course, except 2821, or Psychology 3251 or 3350; one further 4000 level Psychology research experience course.

3. Biology 3750 or Psychology 2721 ~~3750~~, Biology 4701, Biology or Psychology 499A/B.

4. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.

5. Mathematics 1000; Chemistry 1050 (or 1200), 1051 (or 1001), and 2400; Physics 1020 (or 1050) and 1021 (or 1051); Human Biosciences 2001 or the former Biochemistry 2101 or 2201 and Human Biosciences 2003 or the former Biochemistry 3106 or 3206.

6. Other courses, if necessary, to complete at least 120 credit hours of courses.

10.2.10 Biology and Psychology (Behavioural Neuroscience) Joint Honours

Note:

Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Biology 1001, 1002, 2060, 2250, 2600, 2900; one of 3401, 3402, or 4404; five Biology electives at the 2000, 3000 or 4000 level not including Biology 499A or 499B.

2. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930; ~~one of the former PSYC 3250, 3810, 3830, 3840, or 3860;~~ 3800, 3802~~1~~, 3910~~0~~; three credit hours in any 385X course; ~~one further course in Psychology chosen from the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650, 3750~~; three credit hours in any other Psychology 2X21 course except 2821, or Psychology 3251 or 3350; any research experience course and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854.

3. Biology or Psychology 499A/B.

4. Human Biosciences 2001 or the former Biochemistry 2101 or 2201, Human Biosciences 2003 or the former Biochemistry 3106 or 3206.

5. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses.

6. Mathematics 1000 (or equivalent); Physics 1020 (or 1050) and 1021 (or 1051); Chemistry 1050 (or 1200), 1051 (or 1001), and 2400.

7. Other courses, if necessary, to complete at least 120 credit hours of courses.

Note:

As provided for under the Graduation Requirements for the Honours Degree of Bachelor of Science, Honours students must obtain a grade of "B" or better, OR average of 75% or higher in all the required courses listed in Clauses 1, 2, 3, and 4 above, except those at the 1000 level.

10.2.24 Human Biosciences and Psychology (Behavioural Neuroscience) Joint Honours

Note: Students completing this program cannot receive credit for Psychology 2920.

The following courses (or equivalent) are required:

1. Six credit hours in Critical Reading and Writing (CRW) courses, including at least 3 credit hours in English courses;

2. Chemistry 1050, 1051 (or 1200 and 1001), Biology 1001 and 1002, Mathematics 1006 (or equivalent);

3. Human Biosciences 2001 (or the former Biochemistry 2101 or 2201), 2002 (or the former Biochemistry 2600), 2003 (or the former Biochemistry 3206), 2004 (or the former Biochemistry 2100 or 2200), 2901, 3004, and Medicine 310A/B;

4. An additional 15 credit hours to be selected from Human Biosciences 3001, 3002, 3003, 3101, 3906 or 3907, 4002, 4101, 4102, 4104, 4200, 4201, 4230, 4231, 4232;

5. Human Biosciences 4800 (Capstone);

6. Psychology 1000, 1001, ~~2521~~ 2822, 2910, 2911, 2930, 3800, 3802~~0~~, 3910~~0~~;

7. Three credit hours in any Psychology 385X course ~~chosen from the following: the former PSYC 3250, 3810, 3830, 3840, or 3860~~;

8. Three credit hours in any other Psychology ~~chosen from the following: 3050, 3100, 3251, 3350, 3450, 3620, 3650, 3750~~; 2X21 course except 2821, or Psychology 3251 or 3350

9. Any Psychology research experience course and one of Psychology 4250, 4251, 4850, 4851, 4852, 4853, or 4854;

10. Human Biosciences 499A/B or Psychology 499A/B; and

11. Chemistry 2400.

Students in first year intending to follow this program should note the regulations for admission to Major programs in Psychology and that the deadline for submission of a completed application form to the Department of Psychology is June 1 for the Fall semester.

15.18.9.4 Regulations for the Major in Criminology

1. A Major in Criminology consists of all of the requirements of the Bachelor of Arts program, including a minimum of 42 credit hours in courses as follows, which must include a minimum of 27 credit hours in Criminology courses:

    a. 21 credit hours in:

        i. Criminology 1001 or Sociology 1001 (or the former Sociology 2300 or Police Studies 2300);

        ii. Criminology 2400 (or the former Police Studies 1000 or the former Police Studies 2000);

        iii. Criminology 2200 (or the former Police Studies 2200);

iv. Criminology 3000 (or the former Police Studies 3000);

v. Criminology 3100 (or the former Police Studies 3100) or Law and Public Policy 3315 (or the former Law and Society 3015);

vi. Criminology 3500 (or the former Police Studies 3500);

vii. Criminology 3395 (or the former Police Studies 3395) or Sociology 3395

b. 6 credit hours in two of Criminology 4000 (or the former Police Studies 4000), Criminology 4001 (or the former Police Studies 4001), Criminology 4080 or Sociology 4080, Criminology 4099 (or the former Police Studies 4099) or Sociology 4099, Criminology 4212 (or the former Police Studies 4212) or Sociology 4212;

c. 3 credit hours in one of Law and Society 1000, the former Law and Society 2000, Sociology 2100, or an additional 3 credit hours in Criminology at any level (excluding credit hours used to fulfill other requirements listed here);

d. 3 credit hours in one of Political Science 3010, Statistics 2500, Sociology 3040, or Sociology 3041;

e. 3 credit hours in one of Criminology 3290 or Sociology 3290; Criminology 3306 (or the former Police Studies 3306) or Sociology 3306; or the former Law and Society 3400;

f. 3 credit hours in one of Archaeology 2492 or Psychology ~~2150~~ 3120; and

g. 3 credit hours in one of Anthropology 2414, History 2800, the former Law and Society 3012, Law and Public Policy 3830 (or the former Law and Society 3830), Sociology 3180, or Sociology 4205.

2. A student is expected to enroll in the Criminology section of any applicable crosslisted courses.

3. As per the Degree Regulations, Major Program of Study, students completing a Major in Criminology are ineligible for an interdisciplinary Minor in any program. Credit hours in a course cannot be used to fulfill the requirements of two Major programs, of both a Major and a Minor program, or the program requirements of all three of a Major, diploma and certificate.

4. Students cannot complete both a major and minor in criminology, a major and certificate in criminology, and/or a minor and certificate in criminology.

Students may wish to follow the pattern for the Major in Criminology listed under Suggested Course Pattern for a Major in Criminology (CRIM) below.

Suggested Courses for a Major in Criminology (CRIM)

Level	**Courses**	**Required or Elective Courses**
1000 CRIM/Sociology	Sociology 1000 Criminology 1001 or Sociology 1001 (or the former Sociology 2300 or the former Police Studies 2300)	All courses required
Other 1000 and 2000, or any Criminology	3 credit hours in Criminology at any level (excluding otherwise-noted) Law and Society 1000 the former Law and Society 2000 Sociology 2100	3 credit hours required

Suggested Courses for a Major in Criminology (CRIM)

Level	**Courses**	**Required or Elective Courses**
2000 and 3000 Forensics	Archaeology 2492 Psychology ~~2150~~ 3120	3 credit hours required
2000 and 3000 Criminology	Criminology 2400 (or the former Police Studies 1000 or the former Police Studies 2000) Criminology 2200 (or the former Police Studies 2200) Criminology 3000 (or the former Police Studies 3000) Criminology 3100 (or the former Police Studies 3100) Criminology 3500 (or the former Police Studies 3500 Criminology 3395 (or the former Police Studies 3395) or Sociology 3395	All courses required
2000 and 3000 Methods	Political Science 3010 Sociology 3040 Sociology 3041 Statistics 2500	3 credit hours required
Other 3000	Criminology 3290 or Sociology 3290 Criminology 3306 (or the former Police Studies 3306) or Sociology 3306 Law and Public Policy 3315 (or the former Law and Society 3015)	3 credit hours required

Suggested Courses for a Major in Criminology (CRIM)

Level	Courses	Required or Elective Courses
	Law and Public Policy 3620 or Political Science 3620 (or the former Political Science 3521) the former Law and Society 3400 Law and Public Policy 3825 or Political Science 3825 (or the former Law and Society 2000)	
2000 to 4000 Indigenous/Ethnicity	Anthropology 2414 History 2800 the former Law and Society 3012 Law and Public Policy 3830 or Political Science 3830 (or the former Law and Society 3830) Sociology 3180 Sociology 4205	3 credit hours required
4000	Criminology 4000 (or the former Police Studies 4000) Criminology 4001 (or the former Police Studies 4001) Criminology 4080 or Sociology 4080 Criminology 4099 (or the former Police Studies 4099) or Sociology 4099 Criminology 4212 (or the former Police Studies 4212) or Sociology 4212	6 credit hours required

Suggested Courses for a Major in Criminology (CRIM)

Level	Courses	Required or Elective Courses
4000 Policy	Law and Public Policy 4630 or Political Science 4630	

15.18.10 Minor in Criminology

For a Minor in Criminology, students must complete at least 27 credit hours in Criminology and other designated courses from relevant disciplines as follows:

1. Sociology 1000 (or the former Sociology 2000); Criminology 1001 or Sociology 1001 (or the former Sociology 2300 or the former Police Studies 2300); Law and Society 1000; Criminology 3290 or Sociology 3290; and Criminology 3395 or Sociology 3395 (or the former Police Studies 3395).

2. Any one of Sociology 3040; Sociology 3041, Political Science 3010, or Statistics 2500.

3. At least 3 credit hours at the 2000-level chosen from the following courses: Criminology 2200, Criminology 2400, Criminology 2208 or Sociology 2208, Psychology 2621 ~~2150~~, ~~Psychology 2800~~, Archaeology 2492, Sociology 2100; or other courses approved by the Criminology Undergraduate Program Director as listed in Elective Courses for the Minor in Criminology.

4. At least 3 credit hours at the 3000-level chosen from the following courses: Criminology 3000 or the former Police Studies 3000, Criminology 3100 or the former Police Studies 3100, Criminology 3500 or the former Police Studies 3500,

Psychology 3120, Psychology 3822, ~~3640~~, or Political Science 3620 or Law and Public Policy 3620 (or the former Political Science 3521), or other courses approved by the Criminology Undergraduate Program Director as listed in Elective Courses for the Minor in Criminology.

5. At least 3 credit hours at the 4000 level chosen from the following courses: Criminology 4000, Criminology 4001, Criminology 4099 or Sociology 4099, Criminology 4212 or Sociology 4212, Sociology 4210, or other courses approved by the Criminology Undergraduate Program Director as listed in Elective Courses for the Minor in Criminology.

Credit hours in a course cannot be used to fulfill the requirements of both a Major and a Minor program, or the program requirements of all three of a Major or Minor, diploma, and Certificate.

Elective Courses for the Minor in Criminology (CRIM)

Level	**Courses**
2000	Anthropology 2414 Archaeology 2492 Criminology 2200 Criminology 2208 or Sociology 2208 Criminology 2400 History 2800 the former Law and Society 2000 Psychology ~~2150~~ 2621 ~~Psychology 2800~~ Sociology 2100
3000	Criminology 3000 or the former Police Studies 3000

Elective Courses for the Minor in Criminology (CRIM)

Level	Courses
	Criminology 3100 or the former Police Studies 3100 Criminology 3306 or Sociology 3306 Criminology 3500 or the former Police Studies 3500 the former Law and Society 3012 Law and Public Policy 3315 (or the former Law and Society 3015) Law and Public Policy 3620 or Political Science 3620 (or the former Political Science 3521) the former Law and Society 3400 Law and Public Policy 3825 or Political Science 3825 (or the former Law and Society 2000) Law and Public Policy 3830 or Political Science 3830 (or the former Law and Society 3830) Psychology ~~3640~~ 3120 Psychology 3822 Sociology 3180
4000	Criminology 4000 Criminology 4001 Criminology 4080 or Sociology 4080 Criminology 4099 or Sociology 4099 Criminology 4212 or Sociology 4212 Law and Public Policy 4630 or Political Science 4630 Sociology 4210

Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Cover Page

Part II: New Courses

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1. New Large Lecture-Based PSYC Courses
2. New Restricted PSYC Courses at Advanced Level
3. Appendix Page

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:

X New course(s):

- ☐ 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

1.New Large Lecture-Based PSYC Courses

COURSE NUMBERS AND TITLES

- **i.** PSYC 3020: Adolescent Development
- **ii.** PSYC 3420: Embodied Minds

RATIONALE

The addition of these courses will broaden the course offerings available to anyone who wishes to take additional Psychology courses beyond the 1000 level, including Psychology and Behavioural Neuroscience Majors. These courses will be larger lecture-based course offerings open to any students who have completed the pre-requisites, and present specialized topics in developmental psychology (PSYC 3020) and cognitive psychology (PSYC 3420) at an accessible level.

ANTICIPATED EFFECTIVE DATE

Fall 2025

i. PSYC 3020: Adolescent Development

ABBREVIATED COURSE TITLE
Adolescent Development

CALENDAR CHANGES

13.12.1 Non-Restricted Courses

PSYC 3020: Adolescent Development

explores the understanding of adolescents and young adults from the perspective of developmental psychology. Topics may include (but are not limited to) physical development, advanced cognitive development, identity development, social development, moral development, sexuality, adolescent psychological disorders, and social problems.

PR: PSYC 1000, PSYC 1001

CALENDAR ENTRY AFTER CHANGES

PSYC 3020: Adolescent Development

explores the understanding of adolescents and young adults from the perspective of developmental psychology. Topics may include (but are not limited to) physical development, advanced cognitive development, identity development, social development, moral development, sexuality, adolescent psychological disorders, and social problems.

PR: PSYC 1000, PSYC 1001

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course will be offered on a rotation basis along with other similarly structured courses (i.e., larger lecture courses that only require PSYC 1000 and/or PSYC 1001 as PR, open to both Majors and non-Majors), potentially in one semester in alternate years. Offering this course will not require any additional teaching resources, but will be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

All people in the developmental area (Drs. Drover, Hallett, and Peterson) could teach this course, as well as Dr. Cheryll Fitzpatrick and Dr. Felix Ayesu.

Please see proposed syllabus below.

Course Outline

Psychology 3020

Adolescent Development

Fall Semester 2025/26

PREREQUISITES: PSYC 1000 AND PSYC 1001

TEXTBOOK: Steinberg, L. (2022). *Adolesence* (13th Ed.). New York: McGraw-Hill.

OVERVIEW: This course provides an overview of physical, cognitive and emotional development in adolescence. As this is a course in developmental psychology, the focus is not just on what happens in adolescence, but the processes that explain how we progress from adolescents to adulthood. This is why we call this area is better called "developmental" psychology and not just "child" psychology.

EXTRA CREDIT FOR RESEARCH PARTICIPATION: This class is part of the Psychology Research Experience Pool (PREP), which means you may choose to participate in psychology experiments for bonus credit points. You may earn up to 3% bonus marks for your final grade in this course via PREP. You may view a list of available research experiences at http://mun.sona-systems.com. You will see a link to create a new account. You must use your @mun.ca email address for your PREP account. When you login to the system the first time, you will be provided with some background information on your rights and responsibilities as a student in PREP. Please make sure you read this information (it is available to review at any time in the FAQ section of the website).

It is your choice whether or not to participate in any study. If you do not wish to participate in any studies, you have the option of completing an alternative written assignment to earn the bonus credit points. Each assignment is worth one credit point, and you may choose to do as many assignments as you wish, up to the maximum of 3 credit points. You may also choose to earn your bonus credit points with a combination of study participation and alternative written assignment(s)- the choice is yours. Please contact the PREP administrator (psych@mun.ca) for more information on the alternative assignment—do not ask your course instructor.

Finally, you should know that I, as your course instructor, have very limited access to PREP records. The only information I will be able to access is the total number of credit points earned by students in this course. I do not have access to which studies students have participated in, and will not be able to tell

whether you have earned credit points from Research Participation, Research Observation, or from completing the alternative assignment. If you have any questions about PREP, please email psych@mun.ca.

UNIVERSITY RESOURCES: There are many resources available at the university that can assist you in your studies, including the Writing Centre (http://www.mun.ca/writingcentre/) and the Student Wellness and Counselling Centre (http://www.mun.ca/counselling/). Memorial University is also committed to accommodating students with disabilities. If you are such a student, please make sure you talk with me as well as the Blundon Centre (blundon@mun.ca), as accommodation is coordinated through them.

ACADEMIC INTEGRITY: It is your responsibility to ensure that you are acting in accordance with the standards of academic integrity while in this course. More information about academic integrity can be found in section 6.12 in the University Calendar.

EVALUATION:	Two Midterm Exams (20% each)	40%
	Written Assignment	20%
	Final Exam	40%

Course Outline

TOPIC	READINGS
BIOLOGICAL TRANSITIONS	CHAPTER 1
COGNITIVE TRANSITIONS	CHAPTER 2
SOCIAL TRANSITIONS	CHAPTER 3
FAMILIES	CHAPTER 4
PEER GROUPS	CHAPTER 5
SCHOOLS	CHAPTER 6
WORK, LEISURE, AND MEDIA	CHAPTER 7
IDENTITY	CHAPTER 8
AUTONOMY	CHAPTER 9
INTIMACY	CHAPTER 10
SEXUALITY	CHAPTER 11
ACHIEVEMENT	CHAPTER 12
PSYCHOSOCIAL PROBLEMS IN ADOLESCENCE	CHAPTER 13

ii. PSYC 3420: Embodied Minds

ABBREVIATED COURSE TITLE
Embodied Minds

ANTICIPATED EFFECTIVE DATE
Fall 2025

CALENDAR CHANGES
13.12.1 Non-Restricted Courses

PSYC 3420: Embodied Minds
explores the fascinating interplay between mind and body. Delve into the mind-body problem and learn about how our physical bodies shape thought, feeling, and consciousness. Investigate the intriguing parallels among human minds, artificial intelligence, and animal cognition. Discover practical applications in education and mental health, where understanding the embodied mind can transform teaching methods and therapeutic approaches. Learn how our minds are deeply connected to our bodies and the world around us.

PR: PSYC 1000, PSYC 1001

CALENDAR ENTRY AFTER CHANGES
PSYC 3420: Embodied Minds

explores the fascinating interplay between mind and body. Delve into the mind-body problem and learn about how our physical bodies shape thought, feeling, and consciousness. Investigate the intriguing parallels among human minds, artificial intelligence, and animal cognition. Discover practical applications in education and mental health, where understanding the embodied mind can transform teaching methods and therapeutic approaches. Learn how our minds are deeply connected to our bodies and the world around us.

PR: PSYC 1000, PSYC 1001

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course will be offered on a rotating basis along with other similarly structured courses (i.e., larger lecture courses that only require PSYC 1000 and/or PSYC 1001 as PR, open to both Majors and non-Majors), potentially in one semester in alternate years. Offering this course will not

require any additional teaching resources, but will be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
Ideally, this course will be taught by Heath Matheson, but can potentially be taught by other cognition faculty or instructors with the relevant background.

See proposed syllabus below.

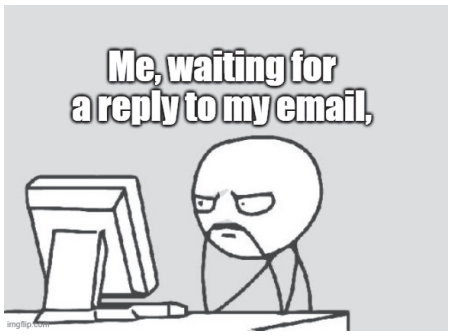
Title: Embodied Minds

Course and Semester: PSYC 3420, LEC

Instructor: Dr. Heath Matheson

Office: SN 3094

Email: hmatheson@mun.ca. Every effort will be made to respond to *most* emails within the week, with the exceptions of evenings, weekends and holidays, and questions regarding issues covered in class. If needed, please see me after class!



Office Hours: By appointment or 1h after class

Class Time: TBA

Class location and delivery mode: TBA, in-person

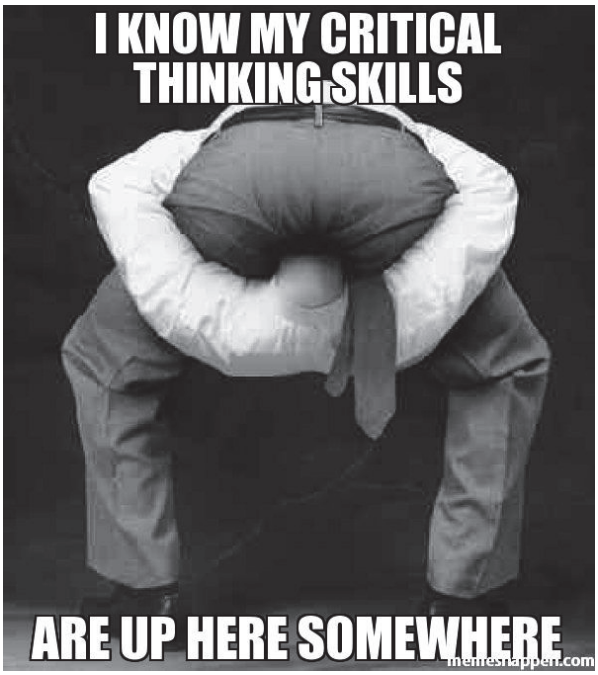
PR: PSYC 1000

TEACHING PHILOSOPHY

Education empowers and protects us. By exposing you to a diversity of ideas and helping you enhance your intellectual skills, education brings opportunity and helps you become a flexible, reflective, and engaged citizen. My overreaching goal is to use the discipline of psychology to promote this.

Equipping you with broad knowledge and helping you to learn to use it creatively is the way I will achieve this goal. In my class I won't simply teach you facts (indeed, the internet can do this if used properly); rather, the main goal is to teach you *skills*—to get you *thinking like a psychologist*. To do so, we will take an approach that mixes both fundamentals and application, encountering history, philosophy, theory, and cutting-edge scientific research from the field; in addition, I will give you opportunities to apply ideas to your personal life and the problems of today's world.

Research psychologists use a wide range of skills, including identifying and reasoning through problems, designing effective experiments and critically evaluating research, ethically interacting with people, performing complex data analysis and interpreting the results, and disseminating and communicating complex ideas. These skills are valuable no matter what you do in your life! Of course, my courses will help you if you pursue further studies in psychology. However, they will do more. Because you cannot predict what skills will be useful or when you might need them, my courses will help you whether you go into law, medicine, public health, education, policy, politics, public service, or private industry. Obtaining broad, generalizable skills is the essence of a liberal arts education and the essence of my teaching philosophy.


I KNOW MY CRITICAL THINKING SKILLS
ARE UP HERE SOMEWHERE
memeshappen.com

COURSE DESCRIPTION AND LEARNING OBJECTIVES

This lecture course explores the fascinating interplay between mind and body. Delve into the mind-body problem and learn about how our physical bodies shape thought, feeling, and consciousness. Investigate the intriguing parallels between human minds, artificial intelligence, and animal cognition. Discover practical applications in education and mental health, where understanding the embodied mind can transform teaching methods and therapeutic approaches. Learn how our minds are deeply connected to our bodies and the world around us. These issues are taught within the context of a 'classic' lecture with multiple choice examinations.

Examples of topics to be studied include:

- What is embodied cognition?
- What does the brain, body, and environment tell us about the mind?
- How do scientists study embodied minds?
- What are the ethics of embodied psychology?

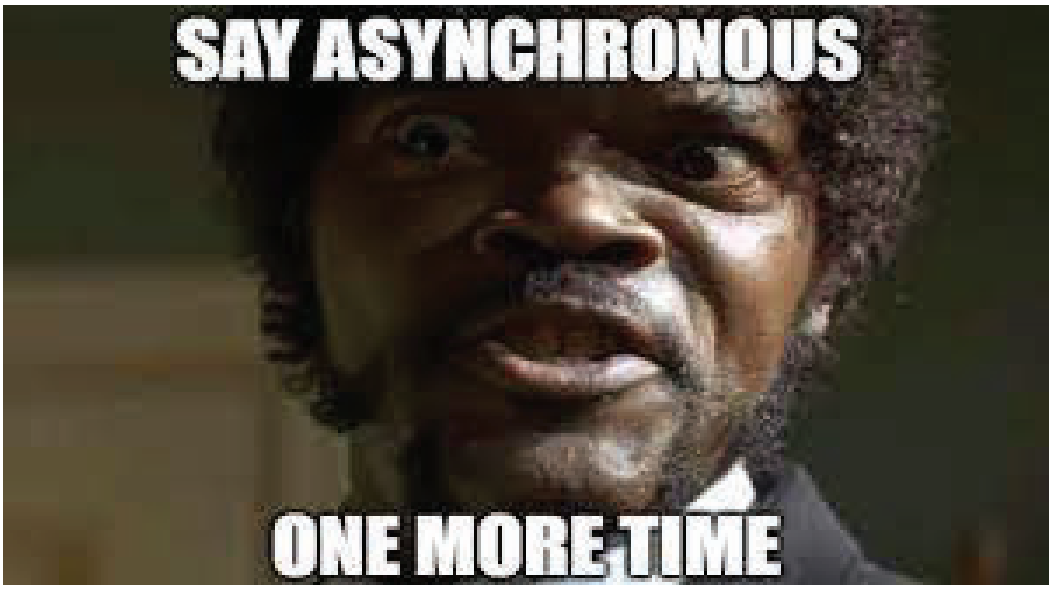
Aligning with my teaching philosophy, the learning objectives are:

- To help you read deeply to obtain baseline factual knowledge from primary sources
    - Weekly readings, reflection documents, and exams will help with this
- To help you develop organizational, creativity, integration, and communication skills
    - Applying embodied principles to your life will help with this

BACKGROUND AND FORMAT

This course is designed to meet your learning needs regarding background knowledge and preparation needed to pursue further studies at university.

In the case of a class disruption or cancellation (e.g. due to job action, Covid), and in the case of revisions to evaluation methods, the instructor or the Head of the department will notify all students registered in the course via the course shell in Brightspace. Any necessary revisions to the evaluation methods will be made in consultation with the students registered in this course. If a student demonstrates that they will be disadvantaged by the change, then, as per 6.7.4 of the University Calendar, accommodations will be made. Recordings will be made only under extreme circumstances.



REQUIRED READINGS

Note that, in designing your learning experience I worked hard to find a technology that a person can use that is relatively inexpensive and therefore accessible and inclusive, useable in diverse environments, allows you to go through the material in a self-paced manner, has opportunities for intermittent assessments, provides a medium for showing complex information (i.e. figures of data), and that can readily be updated or augmented with cutting edge knowledge from the field.

Thus, I will be assigning readings!

WARNING ***By taking this class you consent to the need to read.* WARNING**

TENATIVE SCHEDULE

Date	Topic	Reading/Assignment
January		
6	Introduction	Syllabus
9	Syllabus day!	Syllabus
11	Overview of Embodied cognition	Reading packet 1
13	Key principles and theories	
16	Key principles and theories	
18	Key principles and theories	
20	Body in cognition	Reading packet 2
23	Body in cognition	
25	Body in cognition	
27	Body in cognition	
30	Embodied emotion	Reading packet 3
February		
1	Embodied emotion	
3	Embodied emotion	
6	Embodied emotion	
8	Embodied emotion	
10	Embodied perception	Reading packet 4
13	Embodied perception	
15	Embodied perception	
17	Embodied perception	
20	Embodied language	Reading packet 5
22	Embodied language	
24	Embodied language	
27	Embodied language	
March		
1*	Radical Embodiment	Reading packet 6
3	Radical Embodiment	
6	Radical Embodiment	
8	Radical Embodiment	
10	Ethics and embodied psychology	Reading packet 7

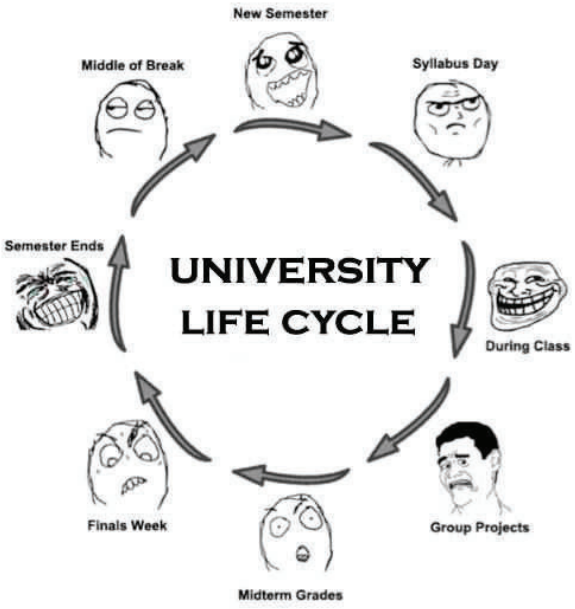
13	Ethics and embodied psychology	
15	Ethics and embodied psychology	
17	Ethics and embodied psychology	
20	Embodied cognition in the clinic	Reading packet 8
22	Embodied cognition in the clinic	
24	Embodied cognition in the clinic	
27	Embodied cognition in the clinic	
29	Applied embodied cognition	Reading packet 9
31	Applied embodied cognition	
April		
3	Applied embodied cognition	
5	Review	

METHOD OF EVALUATION

Evaluation will be based on both your mastery of course content and your engagement with the process of your learning. Content evaluation will consider the quality of the of your knowledge through multiple choice examinations. Process evaluation will consider the quality of the processes engaged to complete the work, for example the timeliness and nature of your involvement in discussions and input on reflection documents.

Your grade will be based on the following:

Module multiple choice examinations (9 exams @ 10% each)	90%
Reflection document	5%
Study log	5%



ASSIGNMENTS

I will assign readings from a small library and/or chapters of texts centred around issues in 'embodied cognition' as it relates to significant domains of cognition. You will read these review/theory papers.

Module multiple choice examinations. There will be multiple choice exams on each module. You will complete these online. Final grade will be proportion of items answered correctly over the term.

*Reflection documents. Y*ou will prepare 5 short reflection posts (~400 words worth 1 % each) in which you will reflect upon or enact an embodied principle within your recent experience. This will further elaborate on the concepts and the importance of them to your personal experiences.). Grade will be based on the quality of your post.

Study log. You will prepare a study log (see assignment appended to this syllabus).

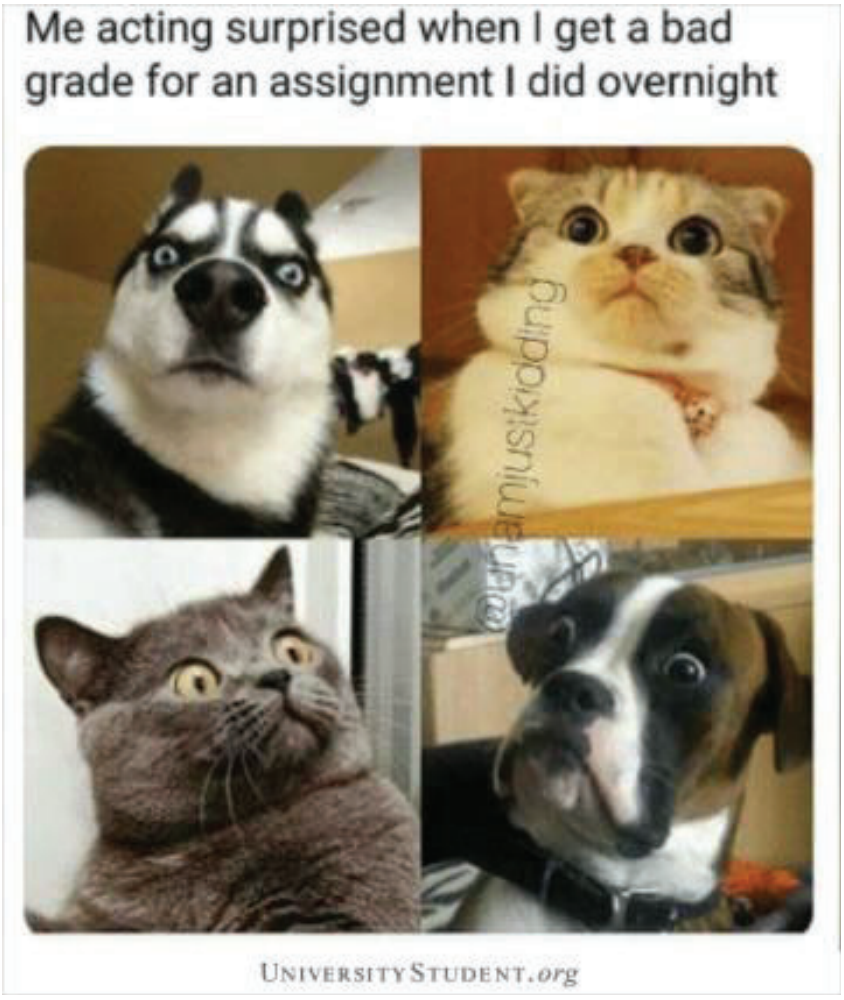
Finally, further bonus points are available! You can earn up to 3% bonus by participating in psychology experiments hosted on PREP. Please do this; it helps science and is a fun experience!

Note, late assignments and missed MC exams and reflection documents will be given a 0. Only PROACTIVE accommodations will be made under exceptional circumstances (e.g. Covid illness). For purposes of equity, no retroactive accommodations will be made.

Please compare the definitions of rubric and instructions. You will find instructions for assignments in class and in the appendices to this syllabus. The rubric is below.

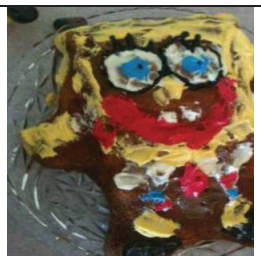
1. ru-bric (n): a guide listing criteria for grading or scoring academic papers, projects, or tests

2. in-struc-tions (n): an outline or manual of technical procedure

3. 

RUBRIC FOR COURSE ASSIGNMENTS

GRADE RANGE	VERBAL DESCRIPTION	GUIDELINES	CORRESPONDING VISUAL METAPHOR IN TERMS OF SPONGEBOB CAKES
A	Excellent	• Considerable evidence of original thinking • Demonstrated outstanding capacity to analyze and synthesize • Outstanding grasp of subject matter • Evidence of extensive knowledge	 "Professional. Outstanding.'
B	Good	• Evidence of grasp of subject matter • Some evidence of critical capacity and analytical ability • Reasonable understanding of relevant issues • Evidence of familiarity with the literature	 "A very lovely amateur's cake. You could open a shop, someday."
C	Satisfactory	• Evidence of some understanding of the subject matter • Ability to develop solutions to simple problems • Benefiting from university experience	 "A cake that looks yummy. I see you made it look like SpongeBob."
D	Marginal pass	• Evidence of minimally acceptable familiarity with the subject matter and the critical and analytical skills of the field	 "I suppose I will eat this but will rather not to be honest"

F	Inadequate	• Insufficient evidence of understanding of the subject matter • Weakness in critical and analytical skills • Limited or irrelevant use of the literature	 "Ew, no. Sorry. Is it even safe?"

This rubric will be used to evaluate the communication assignments and to develop the multiple choice exams.

Academic Support

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 Accommodations for Students with Disabilities Policy (www.mun.ca/policy/site/policy.php?id=239) 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 academic accommodations are provided in a timely manner. You can contact Accessibility Services (Blundon Centre) by emailing blundon@mun.ca.

Academic Offenses

a. Plagiarism: Plagiarism occurs when a student submits or presents work of another person in such a manner as to lead the reader to believe that it is the student's original work; self-plagiarism is the submission of work previously submitted for academic credit without prior written and signed approval of the current course instructor.
Paraphrasing is plagiarism! (Almost certainly, at least). See the writing center and our discussion in class for more information about how to avoid accidental and structural plagiarism.

Using AI tools without proper citation constitutes plagiarism, and your work will be subject to the appropriate Memorial's Academic Misconduct policy. *Original work, completed wholly by you, is expected to be submitted in this course*. The use of an artificial intelligence tool like ChatGPT or ghost-writing services is not permitted. For more information review the library's Academic Integrity and Aritifical Intelligence (AI) and your academic work pages.

b. Cheating: Cheating takes numerous forms and includes, but is not limited to, the following: copying from another student's work or allowing another student to copy from one's own work; obtaining a copy of an examination before it is officially available; misrepresenting or falsifying references, citations, or sources of information; knowingly recording or reporting false or invented empirical or statistical data; and possession of notes, books, diagrams or other aids during examinations that are not authorized by the examiner (See Regulation 39(a)).
Ultimately, it is more valuable to communicate your own ideas poorly than to communicate ideas that aren't yours well!

Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an

academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

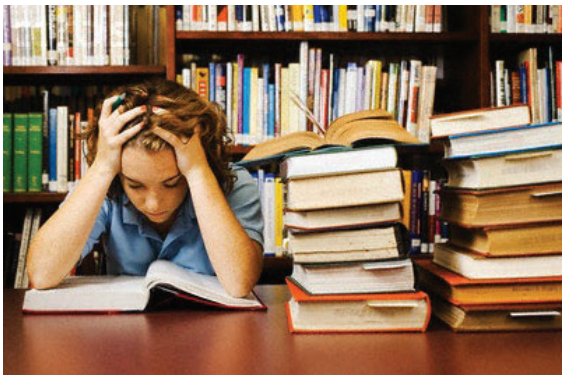
Harassment, Discrimination and Diversity

I am committed to providing a working and learning environment in which all students, staff and faculty are treated with respect and dignity. I acknowledge the right of all individuals in the University community to work or learn without discrimination or harassment because of race, colour, ancestry, place of origin, religion, family status, marital status, physical disability, mental disability, sex, age, sexual orientation, political beliefs or criminal or summary conviction offense unrelated to their employment.

Appendix B: Study Log

The knowledge you gain from this course cannot be uploaded to your brain like you upload files to a computer. *IT JUST CAN'T*. Learning is an ongoing and iterative process—it is a skill.

Learning will cause discomfort. This is how learning starts off:



But this is what it turns into:

This course is designed such that even a certified genius or alien super-intelligence will struggle to pass this course without the motivation and work ethic to do so. Why? Because, rather than being a test of trivia or of innate abilities, the course is designed to help the motivated and talented student develop their skills.

Taking a degree at a university is a lot like signing up for lessons at any club (ski, music, carpentry, cooking, etc.). You get to participate in a community with resources to help you develop your abilities. As the instructor, I am here to help. And like lessons, you will learn well by going to lessons and practicing, exploiting your own motivations and maximizing your own talents. Showing up to classes

does not guarantee you a gold medal, a record deal, a booming business, or an illustrious career as a psychologist, but it does guarantee you the opportunity to develop skill that will help get you there.

But there is more. A major benefit to lifelong learning is that *it helps you achieve overall well-being* by helping you develop skills that keep you a creative and flexible problem solver. And who doesn't want to solve problems? If you ever find yourself asking 'But what is the practical benefit of all of this?' know that there is nothing more practical than being a flexible problem solver.

The learning objective of this assignment is to further develop your engagement skills to encourage life-long learning. You will learn to coordinate your time, reflect on how you are spending it, and what you are getting out of the experience. It is expected that these skills will be generalizable to all areas of learning in your life.

To do so, you will keep a weekly study log, in which you document how you are engaging with this class. Your study log will look like:

	A	B	C
1	**Week**	**Total hours**	**Activity**
2	1	6	read the syllabus
3			read chapter 1 twice
4			learned that perception is not just for my brain's enjoyment
5			recopied my notes
6	2	4.5	read chapter 2
7			found a potental news article
8			started making notes for test yourself 1
9			I am not sure if I think the brain can explain all of what I see, yet
10	3	6	read chapter 3
11			recopied my notes from last week and this week
12			got information about the writing assingment
13			did flashcards with study group
14			maybe my brain is important for perception, I don't know
15			

You will use a spreadsheet software to complete this assignment (e.g. excel, numbers, open office). A description of each heading of your spreadsheet and the expected content is below:

Week – Simply put which week the log is for. You are expected to do this once a week for the term.

Total hours – Give a report of how many hours you spent 'on task'. Here, on task means, reading, re-writing notes, doing searches for the assignments, drafting writing, study group (e.g. testing each other), etc. It is expected that you spend about 2-3 hours studying for each hour of lecture. With 3 hours of lecture a week, this means we should reasonably expect 6-9 hours of on task studying a week.

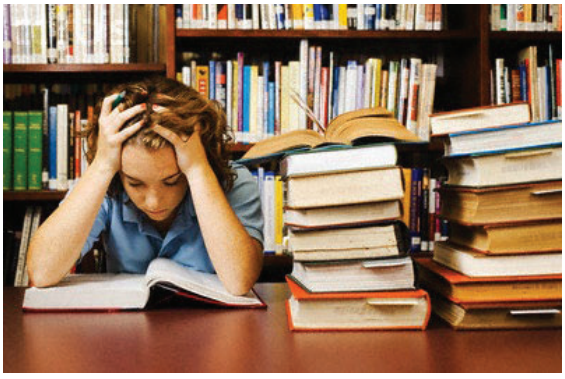
Activity – Give 3 bullet points describing what your main activities were. We will go over some handy study tips in class that you can use to populate this list. Additionally, give 1 bullet point describing something that you have learned or experienced that really stands out. Simply reflect on what has been covered and summarize your interaction with that material.

This assignment will be based *primarily* on the number of hours you report spending on task. Please save the file as 'YourLastName.csv'.

Appendix C: Using psychology to study Psychology…

…or…

How to go from here…



…to here…

…in 6 easy steps for the low low price of $0.00

One of the advantages of studying psychology is that it is a scientific discipline that researches learning and therefore reveals the ways in which we should study it. That is, there is a vast literature on the psychology of learning and memory and as students we benefit from applying it to our own practice. Like in all areas of life, people seek 'magic bullets' that will help them overcome problems, and in education people tend to look for new technologies, classroom design elements, or sometimes even drugs. *However, decades of research show that effective educational interventions are simple habits.*

Research on the 'testing effect' or 'retrieval practice' clearly shows that *the best way to learn new material is not by re-studying the material, but by testing yourself on it*. That is, passively exposing yourself over and over again to the material will not result in learning. By giving yourself opportunities to generate recently learned information during a self-imposed 'test', you participate more actively in encoding the knowledge. Doing this across all the material you encounter allows you to exploit 'elaborate rehearsal', allows for opportunities for feedback, and increases the number of associations you make between the material you are trying to learn and previously learned material (exploiting the network of associations that is semantic memory). These associations are how knowledge is created in the brain. Finally, doing this throughout the length of the course will allow you to exploit 'the spacing effect', in which material is better learned when it is spaced out and revisited it new ways. All of this benefits your ability to demonstrate the knowledge later and to combine it in new and exciting ways to solve creative problems.

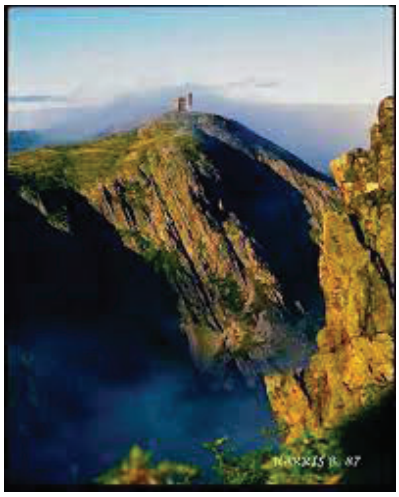
Based on the psychological literature, here are the 6 concrete things you should do to learn:

1. After reading a chapter (or section of a chapter), try to rewrite the main points of the material in your own words (i.e. conduct a 'free recall test' and exploit the 'testing effect'). You won't be able to recall everything, so go back to the material, find what you have left out, and start over. Repeat this until you feel you can freely recall the main points of the chapter (or section).
2. Stop to do the test yourself questions (i.e. exploit the testing effect). These questions force you to generate more specific answers which benefits encoding. Ideally, you will do this with a partner who can provide feedback on your answers. Repeat this until you can answer all of the questions meaningfully. For maximum benefit, write out your responses.
3. Attend class and take notes, transcribing the discussions in class in your own words. This will expose you to alternative formats of the information (i.e. 'elaborative rehearsal'), for instance by reading something from the text, hearing it discussed auditorially from multiple perspectives, and seeing it presented visually in videos or pictures.
4. After class, try to rewrite the main points of the class in your own words (i.e. conduct a free recall test again). Expect the same benefits as with the textbook material.
5. Space your self-tests in increasing intervals (i.e. 'the spacing effect'). That is, don't simply generate the material once and move one. Generate the material immediately after a section, then again a day or two after that, then again a week or two after that. (Note that the ideal

spacing might depend on you as an individual, so play around with different timings and see what works best).

6. When you encounter a reference to a previously learned concept or topic, make sure you can generate a description of that topic and relate it to what is currently being discussed (i.e. exploit associations in semantic memory). If not, revisit the earlier material and repeat.

Practicing these methods will practically *guarantee* you learn the material in depth and ensure success in the class. Also, these strategies will work for any class! We will do some exercises in class that promote these habits and will give you some experiences with them if you have not had them before. However, ultimately these are empowering habits that are in your control. The expectation of university educators is that you spend 2-3 hours studying *per hour* you spend in lecture. Of course, these methods appear to require greater effort than simply re-reading the material, watching it in a pre-recorded video or a lecture, or taking a memory drug. However, with these methods, you should find that each hour you spend will greatly enhance not only your depth of learning, but your learning efficiency as well. Once you are succeeding with these methods, you can spend much less time on material and learn it way better than the old habit if simply re-studying. Ultimately, you will find yourself more confident in the material, less stressed in assessments, and with more time for other activities. You can go for a nice excursion (see below for a nearby option)! It is a win-win!



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

2.New Restricted PSYC Courses at Advanced Levels

COURSE NUMBER AND TITLE

- **i.** PSYC 3151: Applying Behavioural Insights
- **ii.** PSYC 3152: Interpersonal Relationships
- **iii.** PSYC 3452: Cognitive Neuroscience
- **iv.** PSYC 3651: Clinical Psychology
- **v.** PSYC 3751: Animal Communication
- **vi.** PSYC 3752: Animal Cognition
- **vii.** PSYC 4471: Research Experience in Cognitive Neuroscience

RATIONALE

The addition of these courses will broaden the course offerings available to Psychology and Behavioural Neuroscience Majors. These courses present more specialized topics in cognitive psychology (PSYC 3452, PSYC 4471), social psychology (PSYC 3151, PSYC 3152), clinical health/wellness psychology (PSYC 3651) and animal behaviour (PSYC 3571, PSYC 3752) at an advanced level.

ANTICIPATED EFFECTIVE DATE

Fall 2025

i. PSYC 3151: Applying Behavioural Insights

ABBREVIATED COURSE TITLE
Applying Behav Insights

CALENDAR CHANGES

13.12.2 Majors Courses

PSYC 3151 Applying Behavioural Insights

will explore behavioural insights and nudges and the methods of how to apply them to alter behaviour, based on social psychology and decision science. This course will involve lectures, assignments, readings, discussions, case studies, and group-work. Example topics include social norms, heuristics, biases, motivation, persuasion, intervention design, and choice architecture.
PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES

PSYC 3151 Applying Behavioural Insights

will explore behavioural insights and nudges and the methods of how to apply them to alter behaviour, based on social psychology and decision science. This course will involve lectures, assignments, readings, discussions, case studies, and group-work. Example topics include social norms, heuristics, biases, motivation, persuasion, intervention design, and choice architecture.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course will be offered on a rotating basis along with other similarly structured courses (i.e., lecture courses of ~40 students who are Psychology or Behavioural Neuroscience Majors), potentially in one

semester in alternate years. Offering this course will not require any additional teaching resources, but will be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
This course can be taught Marty Day, and Laura Fallon, but could potentially be taught by other social faculty or instructors with the relevant background.

A proposed syllabus is below.

Applying Behavioural Insights and Nudges
(Psychology 3X5X)
Syllabus

i.

Instructor: Dr. Martin Day

Office: **SN 2073**

Office Hours: (insert), or by appointment.

Please contact me if this time does not fit with your schedule –
we can definitely find a time to meet.

Email: mvday@mun.ca

Generally, I aim to respond to e-mail the same day or within 24hrs. Occasionally there may be 24-48hr delays (e.g., weekends, evenings).

Teachng Assistant: (insert)

Email: (insert)

COURSE INFORMATION

Class Sessions: (insert)

Location: (insert)

Website: Brightspace

COURSE OVERVIEW

Welcome to Applying Behavioural Insights!

How do you get people to waste less energy, save more money, and eat healthier? How do you encourage people to vote, stay in school, stop smoking, and drive safer? How do you effectively "nudge" people to achieve personal and societal goals? Behavior change and policy improvements are notoriously difficult to achieve. However, in this course you will learn about a promising set of new methods that uses relevant social psychology and decision science to help people achieve a variety of goals that we are committed to in theory. This course primarily involves learning 1) the relevant psychological concepts useful for nudging and motivating behavior, and 2) what we know about how to apply this knowledge to change behavior. This will be accomplished through lectures, assignments, discussions, case studies, readings, and group-work. Some examples of social psychological and decision making topics include: norms, heuristics, biases, moral foundations, group identity, prospect theory, time-discounting, persuasion, social contagion, and choice architecture.

By the end of the semester you should be familiar with a wide range of concepts from social psychology and decision science that are relevant for behavioral analysis and intervention. Moreover, you should have the knowledge and working ability needed to critique and analyze real world problems and propose testable solutions. By succeeding in this class you will gain introductory skills in behavioral analysis and implementation that are applicable beyond the classroom (e.g., that can be useful to improve programs, policies, environments, messaging, and organizational practices). You will also have gained experience applying the concepts learned in this course to your own life.

REQUIRED READING

Book: Kahneman, D. (2010). *Thinking fast and slow.*

Additional required reading, including links, can be found in the Reading List below.

COURSE STRUCTURE

1) Primary lectures will generally introduce a broad topic, or related topics.

2) Secondary lectures will usually follow-up the primary lectures by providing an opportunity to discuss, practice, and apply the material. This will involve participating in a variety of activities, case studies, discussion of readings, and assignments.

Because of holidays and breaks, **Primary lectures and Secondary lectures will switch between Mondays and Wednesdays**. Please see the Course Schedule for full details. Attendance in all lectures is required. The assigned readings for each topic should be read prior to Secondary lectures.

GRADING SCHEME

Assignments	35%
Midterm	30%
Project Write-up & Poster	25%
Participation Activities	10%
Total	100%

COURSE COMPONENTS

Midterm Exam:

The midterm exam will assess your understanding of the material covered in the first seven weeks of the course. The format will mostly be short-answer and scenario-based. For example, you will be provided with information about several dilemmas and you will be asked to analyze behavioral aspects of these problems or design solutions. There may also be a small number of multiple choice questions. The exam is intended to give you mid-course feedback on your understanding of the material and especially on its application.

If you must miss a midterm, a make-up midterm will only be provided if you contact me with an approved extenuating circumstance (mainly severe illnesses, or religious holidays), preferably in advance. A personal trip, vacation, or job-recruitment, do not constitute an extenuating circumstance. This policy applies to the other course components as well.

Assignments, Project Write-up, and Poster:

Your project for this course is to propose an intervention to bring about a change in social behavior – presumably the reduction of harmful behavior and/or the promotion of beneficial behavior. This will be from the perspective of an organization (not-for profit, government entity, or business). You will work on this project in groups of no more than 4, over the second part of the semester.

Assignments:

The assignments begin on (insert date) and are designed to prepare and guide you through the intervention process. In Assignment 1, you will practice the diagnosis stage of the behavioral methodology learned in class (DDDT). In Assignment 2, you will use the DDDT method to analyze and critique several policies designed to change behavior (e.g., what they get right, what they overlook). In Assignment 3, you will choose one of two societal problems to practice the full DDDT framework. Note: The remaining assignments (#'s 4-6) will involve group-work. In Assignment 4, you and your group will select the context and define the target behavior you seek to change. In Assignment 5 your group will diagnose the cognitive and social processes relevant to the target behavior. In Assignment 6, your group will design your intervention. Assignment 7 is an individual assignment in which you will have the opportunity to apply concepts from class to your own life, and test whether they are effective.

Instructions for each assignment will be posted on the course website well in advance of the deadlines. All assignments should be submitted via the course website.

Late Policy: Any written assignments (including those below) submitted after the deadline will be marked down 10% each day, for up to 5 days. Papers submitted more than 5 days late will not be marked (i.e., will receive 0%).

Participation Activities:

You are encouraged to come to every class if possible. ☺ The success of this course depends on the participation of everyone. You will be expected to play an active role in classroom activity.

Course participation will be based on your completion of class-relevant activities mostly during class time (e.g., completion of group and class discussions, review activities, demonstrations, exercises, etc). There will be many participation activities throughout the term, 8 of which will be assessed. There will also be an online course survey. The participation activities are worth 1% each, and the survey is worth 2%, to a maximum of 10%. Assessments will be pass/fail (i.e., they will be based only on whether an activity was completed or not).

Project Write-Up:

Together, your group will submit 1 write-up that should be 10-12 pages long and will follow a similar format as the assignments. It will include a section defining the problem, diagnosing the problem, describing the design, and testing the design. In addition, the final write-up will include a feasibility analysis of your group project and a critique section. Some components of the project write-up will be completed through your work on the assignments. However, you will also be expected to respond to feedback provided on your assignments, and from your fellow students in the poster session, and refine your intervention project.

More specific details of the write-up, as well as a grading rubric for the write-up, will be released later in the course. The same late policy will apply as for the assignments.

Project Poster: There will also be a poster session based on your group project. This informal event gives all groups the opportunity to showcase their final project to the instructor and class, and receive final feedback. The poster session will be held on (insert date), during class time. Your group will also be expected to provide constructive feedback on three other posters as part of your participation in this event.

COURSE EXPRECTATIONS

1. Preparation and Attendance

You are expected to come to each lecture and be prepared. Out of respect to your fellow students and teaching staff, you are expected to come to each lecture on time and stay for the entire period.

2. Course Content

You should find this course to be exciting, interesting, and fun (!) but doing well will involve a significant effort on your part. This course will involve new material as well as terminology and concepts that you may be familiar with.

A common mistake in this class is for students to think they are familiar with the material, but realize (sometimes too late) that they do not have a complete grasp of the concepts when it comes to applying the material. Application is a major component of this course. To excel, you will need to complete the readings thoroughly, and think about how to apply this information; you will need to attend and actively participate in lectures and discussions, and you will need to complete all coursework on schedule. There will also be opportunities to practice the material covered in lecture, which will greatly increase your ability to correctly apply the material and succeed in this course.

3. Lecture Notes

Students are expected to take notes during the lecture as the lecture slides are rarely complete. The basic lecture slides will be provided on the course website, typically the evening before a lecture (by 9pm). The basic lecture slides are not a substitute for coming to class and students are responsible for any course material covered in lecture and not provided in the uploaded lecture slides. If you miss a class, please contact one of your classmates to obtain the notes. If you have questions, I am happy to meet with you.

4. Academic Integrity

Plagiarism, or any other type of unethical academic behavior will not be tolerated. All course work (e.g., critical analysis, research proposal) must be based on your own ideas and thoughts. Whenever you use ideas that are not your own, give credit where due, and cite accordingly.

Plagiarism is a major academic offense. For a full definition, please see Plagiarism among Academic Offences: https://www.mun.ca/regoff/calendar/sectionNo=GRAD-0029

Memorial Policy: Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

ChatGPT/Generative AI Policy: Students are not allowed to use generative AI programs (e.g., Chat GPT) to assist with the completion of written work for this course (e.g., Assignments). Any such use (including paraphrasing generative text) will be considered an academic offense. To clarify, it is acceptable to use spell-check and grammar check programs (i.e., for correction purposes, but not for creation of ideas/literature search purposes). These assignments are designed, in part, to help give you practice generating ideas, applying your critical thinking skills, and discovering and understanding the academic literature.

Some important tips:

Direct quotes should be used rarely, if at all, but are permissible. In general, describe other people's research results, theories, or arguments in your own words, and include a citation to the original source. For example, do not quote one or two sentences that describe the results of a study. Instead, if the finding is important to include, provide your understanding of the study result in your own words and cite the authors of the original ideas. If you must use a direct quote, be sure to put the text in quotation marks and include a page number in your citation.

To be clear: cite the source of any research finding, theory, or argument, even if you have rewritten it significantly using your own words. Simply changing wording order or replacing a couple words with synonyms is not acceptable. Sometimes it may be unclear whether a source is directly responsible for your own thinking/writing. It is best to double-check your source. When in doubt, err on the side of caution by citing the source.

5. Collaboration

Some parts of this course will involve collaboration and some parts will involve completely individual work without collaborating with other students. Assignments #1-#3 are to be written and completed individually, and involve choosing your own contexts. These assignments will give you individual practice honing the methodology learned in class. Although not necessary, you are allowed to talk about your ideas on the first 3 assignments and edit each other's work. The midterm will be completed individually. Students may study and review for the midterm with other students if they wish. Assignments #4-#7 and the poster will be completed in groups. These elements of class will necessarily involve collaboration with your group members and will give you practice applying the material with others. Part of the group

write-up will be completed as a group, and part independently. If you have any questions or concerns about individual work or collaboration, do not hesitate to contact the Instructor.

6. Accommodations

Students in need of accommodations according to University Regulations should contact me to make arrangements for course materials and assigned work. If accommodations are needed, please speak with me within the first couple weeks of class or before any due date. Failure to do so may result in my inability to respond in a timely manner. All discussions will remain confidential.

Memorial Policy: Memorial University of Newfoundland is committed to supporting inclusive education based on the principles of equity, accessibility and collaboration. Accommodations are provided within the scope of the University Policies for the Accommodations for Students with

Disabilities (www.mun.ca/policy/site/policy.php?id=239). Students who may need an academic accommodation are asked to initiate the request with the Glenn Roy Blundon Centre at the earliest opportunity (www.mun.ca/blundon).

Land Acknowledgement

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

COURSE SCHEDULE

Date	Class	Lecture Type	In-Class Topic	Readings	Due dates
Sep 7 (TH)	1	Primary	Intro: central course themes and outline		
Sep 12 (T)	2	Primary	A behavioral methods approach		
Sep 14 (TH)	3	Secondary	Practicing the behavioral method	Readings 1	Online Survey Due (TBD)
Sep 19 (T)	4	Primary	Bounded Rationality I		
Sep 21 (TH)	5	Secondary	Bounded Rationality I	Readings 2	Assignment 1 (TBD)
Sep 26 (T)	6	Primary	Bounded Rationality II		

Sep 28 (TH)	7	Secondary	Bounded Rationality II	Readings 3	Assignment 2 (TBD)
Oct 3 (T)	8	Primary	Behavior Change		
Oct 5 (TH)	9	Secondary	Behavior Change	Readings 4	
Oct 10 (T)			**Thanksgiving Break**No Lecture**		
Oct 12 (TH)	10	Primary	*Guest Speaker*		
Oct 17 (T)	11	Primary	Designing Better Policies		
Oct 19 (TH)	12	Secondary	Designing Better Policies	Readings 5	Assignment 3 (TBD)
Oct 24 (T)	13	Primary	Moral Decision Making		
Oct 26 (TH)	14	Secondary	Moral Decision Making	Readings 6	Assignment 4 (TBD)
Oct 31 (T)	15	Primary	Group Dynamics, Conflict, & Decision Making		
Nov 2 (TH)	16	Secondary	Group Dynamics, Conflict, & Decision Making	Readings 7	Assignment 5 (TBD)
Nov 7 (T)	17	Primary	Marketplace of Ideas & Persuasion	Readings 8	Assignment 5 (TBD)
Nov 9 (TH)	18	Secondary	Discussion & Midterm Prep		
Nov 14 (T)	19		**Midterm**		
Nov 16(TH)	20	Secondary	Marketplace of Ideas & Persuasion		
Nov 21 (T)	21	Primary	Environmental Behaviours		Assignment 6 (TBD)
Nov 23(TH)	22	Secondary	Final project preparation		
Nov 28 (T)	23	Secondary	Application & Conclusion	Readings 9	Assignment 7 (TBD)
Nov 30(TH)	24	Secondary	Poster Presentations		
			Final Write Up		(TBD)

**Please note that either the schedule or the assigned readings may be adjusted as the term progresses. If changes are made, an updated schedule will be posted on the Course Website.

READING LIST

Readings 1) A Behavioral Methods Approach

Datta, S. & Mullainathan, S. (2012). Behavioral design: A new approach to development policy. Center for Global Development, *Policy Paper 16,* 1-33.

Campbell, D. T. (1969). Reforms as experiments. *American psychologist*, *24*, 409-429.

Readings 2) Bounded Rationality I

Kahneman, D. (2010). *Thinking fast and slow*, Chapters 1-3, 5, 8-9, 11-12.

Readings 3) Bounded Rationality II

Kahneman, D. (2010). *Thinking fast and slow*, Chapters 25-28

Readings 4) Behavior Change

Miller, D. T., & Prentice, D. A. (2012). Psychology of behavior change. In Shafir, E. (Ed.). *The behavioral foundations of public policy* (pp.301-309). Princeton University Press.

Tyler, T. (2012). The psychology of cooperation: Implications for public policy. In Shafir, E. (Ed.). *The behavioral foundations of public policy* (pp.77-90). Princeton University Press.

Kerr, S. (1995). On the folly of rewarding A while hoping for B. *Academy of Management Executive*, *9*, 7-14.

Useful Reference:

Prentice, D. A. (2012). The psychology of social norms and the promotion of human rights. In R. Goodman, D. Jinks, & A. K. Woods (Eds.), *Understanding social action, promoting human rights* (pp. 22-46). New York: Oxford University Press.

Readings 5) Designing Better Policies

Kahneman, D. (2010). *Thinking fast and slow*, Chapter 13

Lowenstein, G., John, L., & Volpp, K. G. (2012). Using decision errors to help people help themselves. In Shafir, E. (Ed.). *The behavioral foundations of public policy* (pp.361-379). Princeton University Press.

Sunstein, C. (2013). *Simpler*. Chapter 7

Readings 6) Moral Decision Making

Haidt, J. (2007). The new synthesis in moral psychology. *Science, 316,* 998-1002.

Useful Reference:

Day, M., Fiske, S., Downing, E., & Trail, T. (2014). Shifting liberal and conservative attitudes using moral foundations theory. *Personality and Social Psychology Bulletin.*

Readings 7) Group Dynamics, Conflict, & Decision Making

Dixon et al., (2012). Beyond prejudice: Are negative evaluations the problem and is getting us to like one another more the solution? *Behavioral and Brain Sciences*. pp. 1-11.

Useful References:

Paluck, E.L., & Shepherd, H. (2012). The salience of social referents: A field experiment on collective norms and harassment behavior in a school social network. *Journal of Personality and Social Psychology, 103*, 899-915.

Readings 8) Marketplace of Ideas & Persuasion

Heath, C., & Heath, D. 2007. *Made to Stick: Why Some Ideas Survive and Others Die.* Random House. Introduction & Chapter 1 (pp.3-62).

Useful Reference:

Petty, R. E., & Brinol, P. (2010). Attitude change. In R. F. Baumeister, & E. J. Finkel (Eds.), *Advanced social psychology: The state of the science*, (pp.217-259). Oxford University Press.

Readings 9) Applying Behavioral Principles to Ourselves

Mullainathan, S., & Shafir, E. (2013). Scarcity in everyday life (pp.205-225). *Scarcity: Why having too little means so much*. Henry Holt and Co.: New York

ii. PSYC 3152: Interpersonal Relationships

ABBREVIATED COURSE TITLE
Interpersonal Relationships

CALENDAR CHANGES
13.12.2 Majors Courses

PSYC 3152 Interpersonal Relationships

aims to better understand the processes underlying dyadic relationships and interactions, as well as knowledge of others, perception of others, and attributions. It also investigates verbal and nonverbal communication processes, self-concept, self-esteem, intimacy, and control and interpersonal power in romantic and non-romantic relationships. Finally, it discusses the foundations of functional and dysfunctional communication and how to develop healthy communication skills.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES
PSYC 3152 Interpersonal Relationships

aims to better understand the processes underlying dyadic relationships and interactions, as well as knowledge of others, perception of others, and attributions. It also investigates verbal and nonverbal communication processes, self-concept, self-esteem, intimacy, and control and interpersonal power in romantic and non-romantic relationships. Finally, it discusses the foundations of functional and dysfunctional communication and how to develop healthy communication skills.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotating basis along with other similarly structured courses (i.e., lecture courses of ~40 students who are Psychology or Behavioural Neuroscience majors), potentially in one semester in alternate years. Offering this course would not require any additional

teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
This course can be taught by Stéphane Dandeneau or Chris Quinn-Nilas, but could potentially be taught by other faculty or instructors with the relevant background.

A proposed syllabus is below.

PSYC 3152
Interpersonal Relationships

Instructor:
Office:
Office Hours:
Email:

Teaching Assistants:

LAND ACKNOWLEDGMENTS

I acknowledge the land on which we gather and learn at Memorial University as the ancestral homelands of the Beothuk, whose culture has now been erased forever. I also acknowledge the island of Ktaqmkuk *[uk-dah-hum-gook]* (Newfoundland) as the unceded, traditional territory of the Beothuk and the Mi'kmaq. I acknowledge Labrador as the traditional and ancestral homelands of the Innu of Nitassinan *[ne-tass-eh-nen]*, the Inuit of Nunatsiavut and the Inuit of NunatuKavut.

OVERVIEW OF COURSE

This course aims to understand better the processes underlying dyadic relationships and interactions, as well as knowledge of others, perception of others, and attributions. It also investigates verbal and nonverbal communication processes, self-concept, self-esteem, and intimacy, control and interpersonal power in romantic and non-romantic relationships. Finally, we discuss the foundations of functional and dysfunctional communication and how to develop healthy communication skills.

PREREQUISITE

PSY2100 Social Psychology

COURSE OBJECTIVES

General objectives

In general, the course aims to understand the processes underlying dyadic relationships and interactions and to become familiar with the concepts, models, theories and research on social perception, interpersonal communication and functional and dysfunctional relationships.

Specific objectives

Knowledge of the internal and external factors that influence dyadic relationships at different stages of the development of friendship, love and intimacy.

Knowledge of the factors that promote the maintenance of different types of dyadic relationships and those that promote satisfaction.

Knowledge of verbal and nonverbal communication characteristics that influence social perception and make dyadic interactions functional or dysfunctional.

Knowledge of the role of relationships and interactions in developing and confirming self-concept and self-esteem.

INSTRUCTIONAL CONTINUITY

In the event of any disruptions during this semester, this course will transition to remote delivery through the course shell on Brightspace for the duration of the interruption. In the case of a class disruption or cancellation and the case of revisions to evaluation methods, the instructor or the Head of the department will notify all students registered in the course via the course shell in Brightspace. Any necessary revisions to the evaluation methods will be made in consultation with the students registered in this course. If a student demonstrates that they would be disadvantaged by the change, then accommodations will be made as per 6.7.4 of the University Calendar.

REQUIRED READING

Textbook: Miller, R. S. Perlman, D. & Brehm, S. S. (2022). *Intimate Relationships, 9th edition.* Boston: McGraw-Hill.

Additional reading will be available on the course website.

EVALUATION COMPONENTS

Evaluation	Weight
Midterm 1	25%
Midterm 2	35%
Final Research Paper	
Locating article	0%
Article summary	10% (individual)
Summary document	10% (team)
Oral presentation	10 % (team) + 10% (Individual component)

Midterms:

The midterm tests will assess your understanding of the material covered in this course (lectures and course readings). The first midterm will assess content from lectures X-XX. The second midterm will cover lectures X-XX. The midterms are not cumulative, and the format will be multiple-choice.

If you miss a midterm, a make-up midterm will only be provided if you contact me with an approved extenuating circumstance (e.g., severe illness), preferably in advance of the midterm **but at least within 24 hours after the scheduled test**. This policy applies to other course components as well.

FINAL PAPER

- The final paper is a long-term project that will be divided into several intermediate stages. It will touch on themes that are complementary to the lectures and readings. The paper will be equivalent to **40%** of the entire grade, of which 20% will be allocated to the team evaluation and 20% allocated to the individual evaluation.

- The objectives of this work are:
    - to familiarize yourself with the discipline of interpersonal relationships through
        - available periodic resources
        - models and theories relating to specific themes
        - the research methodologies used
        - application contexts
    - to exercise a critical point of view
    - to put into practice certain theoretical notions seen in class through experimentation in a small working group
    - to stimulate effective knowledge-sharing
    - to vary teaching strategies by integrating research, analysis, communication and peer teaching work

- No change of oral presentation date will be granted without supporting medical documentation indicating that a student member of the team was unable to attend class.

- The proposed themes for teamwork are:
    - **Relationships and the Internet**
    - **Sexuality**
    - **Jealousy and betrayal**
    - **Relationships at work**

STEP 1: IDENTIFYING, PRESENTING AND CHOOSING AN ITEM

- Teams of 4 to 5 people will be formed in the first class and the themes assigned to each team. From the first week, each member of the team will have to identify **4 articles** related to your theme in

specialized journals dealing with interpersonal relationships. You will have to read the articles that you have identified and choose one to propose to the group.

- You will have to present one of these articles to your team during the second class, on DATE HERE. Each team member will then have 5 minutes to summarize the article to his or her colleagues and present the strengths and limitations noted. The presentations of each team member should allow the informed choice of one of the proposed articles to develop *your session project together.*

- Keep the notices of the articles that you have identified. As a team, you will pool your resources to create a bibliography that will eventually be appended to your final work.

- Step 1 of the work is not assessed.

STEP 2: ARTICLE SUMMARY

- The article chosen by the team will be summarized. Each team member will submit their own abstract of the article. The abstract will be 2-3 pages long, double-spaced. It will be accompanied by a title page, and a reference page for the articles you have identified. Make sure that one member of the group submits a copy of the chosen article with their abstract.

- The summary of the article will be worth 10% of the final grade.

- The due date for the summary is DATE HERE.

- The correction criteria for the summaries will be:
    - 8% - quality of the synthesis (presentation of essential concepts, correct understanding of concepts, theories, methodology, results, discussion)
    - 2% - compliance with instructions:
        - Word file, APA standards for text and references (Times New Roman font, 12 point, double spaced, 1 inch margins)
        - Title page with your name and registration number, the date of submission, the reference of the summary article, as well as the names of the team members
        - APA reference page for the 4 articles you found and the summary article.

STEP 3: SUMMARY DOCUMENT

- The team will produce a summary document for the team, which must be submitted on the same day as the oral presentation, i.e. DATE HERE.

- The document will be subject to team evaluation and worth 10% of the final grade.

- The final 8-10 page document (excluding the inclusion of acetates and the bibliography) will follow the same guidelines as the article summary and will address the following elements:
    - 8% - Analysis and synthesis of the article:
        - General summary of the article

        - How the article topic applies to everyday life
        - Critique of the study and suggestions for future research
        - Presentation of two studies that would allow future research to be addressed
    - 2% - Presentation material and bibliography:
        - Transparencies of the oral presentation (e.g. PowerPoint document 6 per page)
        - APA reference page for articles referenced by all group members.

STEP 4: ORAL PRESENTATION

- Finally, the paper will be the subject of a 30-minute oral presentation in front of the class, followed by a 5-10 minute question period. Oral presentations will take place on DATE HERE.

- The oral presentation will be worth 20% of the final grade. The share allocated to the team evaluation will be worth 10% .

- The evaluation criteria for oral presentations are:
    - quality of the synthesis (presentation of essential concepts, correct understanding of concepts, theories, methodology, results, discussion)
    - relevance of the examples and the links made with everyday life
    - rigorous and relevant critiques of the study, suggestions for future research
    - originality and creativity of the proposed studies
    - communication effectiveness (clarity, style, structure, visual support, language)
    - compliance with instructions (compliance with the plan, time management, sharing of speaking time)

Late policy

Any assignment submitted after the deadline will be marked down 10% each day for which it is late, up to a maximum of 5 days. Assignments submitted more than 5 days late will not be marked and will receive 0.

COURSE EXPECTATIONS

Academic Integrity Plagiarism or any other type of unethical academic behaviour will not be tolerated. All coursework (e.g., critical analysis, research proposal) must be based on your own ideas and thoughts. Whenever you use ideas that are not your own, give credit where due and cite accordingly.

Plagiarism is a major academic offence. For a full definition, please see the following document: http://www.mun.ca/psychology/undergrad/Plagiarism.pdf

Memorial Policy: Students are expected to adhere to those principles which constitute proper academic conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or

expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

How NOT to plagiarize:

Direct quotes should be used rarely, if at all, but are permissible. In general, describe other people's research results, theories, or arguments in your own words, and include a citation to the original source. For example, do not quote one or two sentences describing a study's results. Instead, if the finding is important to include, provide your understanding of the study result in your own words and cite the authors of the original ideas. If you must use a direct quote, put the text in quotation marks and include a page number in your citation.

To be clear: cite the source of any research finding, theory, or argument, even if you have rewritten it significantly using your own words. Simply changing the wording or replacing a few words with synonyms ***is not acceptable***. Sometimes it may be unclear whether a source is directly responsible for your thinking/writing. It is best to double-check your source. When in doubt, err on caution by citing the source.

Accommodations

According to University Regulations, students needing accommodations should contact me to make arrangements for course materials and assigned work. If accommodations are needed, please speak with me within the first couple of weeks of class or before any due date. Failure to do so may result in my inability to respond in a timely manner. All discussions will remain confidential.

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

Generative AI and AI-assisted technologies

Generative AI and AI-assisted technologies, such as chat GPT, are allowed in this course for writing assignments. However, it is the student's responsibility to ensure that the written work submitted 1) addresses the goals of the writing assignment, 2) contains reliable information with sound sources, and 3) is well written for clarity, format, organization of thoughts and transitions between ideas.

Should a student use AI and/or AI-assisted technologies, the following declaration should be inserted in the document. Failure to do so could result in a grade reduction (to be determined based on the severity of the case) due to academic dishonesty. Please note that this declaration does not excuse the use of inaccurate or false citations/references or the inclusion of plagiarized materials.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, [NAME TOOL / SERVICE] was used to [REASON]. After using this tool/service, the content was reviewed and edited as needed, and I take full responsibility for the content of the written work.

Course Schedule

Date	Course content	Reading
Week 1	Course 1: Introduction to Interpersonal Relationships • Presentation of the course plan • Presentation of the discipline • Interpersonal, proximal and intimate relationships • Team formation and theme selection	Chapter 1
Week 2	Lesson 2: The Science of Interpersonal Relationships • Developing the research question • Correlational, experimental and developmental methods • Data Types • Interpretation and integration of results *** Presentation of the articles to the group	Chapter 2
Week 3	Lesson 3: Interpersonal Attraction • Situational and psychological determinants of attraction: familiarity, reciprocity, similarity, and physical appearance	Chapter 3
Wee k4	Lesson 4: Social perception • Formation of impressions of others and attributions • Authenticity and effectiveness of social perceptions: the role of prejudices, biases and errors • perception , schemas, self-esteem, self-concept confirmation, self-presentation	Chapter 4
Week 5	Lesson 5: Interpersonal Communication • Verbal and non-verbal communication • Functional and dysfunctional communication. ***Submission of the article summary	Chapter 5
Week 5	Lesson 6: Growing and Maintaining a Relationship • Interdependence Theory	Chapter 6

	• Self-disclosures, trust, commitment and conflict • Influence of environmental factors	
Week 7	Lesson 7: MIDTERM 1	Chap. 1 - 6
Week 8	Lesson 8: Friendship • Attributes of friendship • Rules of friendship • Developmental perspective	Chapter 7
Week 9	Lesson 9: Love • Love versus friendship • Triangular Theory of Love ***Oral presentations: relationships and the internet	Chapter 8
Week 10	Lesson 10: Conflicts • Conflict, breakup, separation and divorce • Violence, harassment and assault ***Oral presentations, 2 groups: sexuality and betrayal 1	Chapter 11
Week 11	Lesson 11: Control, Power and Social Influence • Reciprocity and fairness • Bases of power and consequences of power • Types of social influence ***Oral presentations, 2 groups: jealousy and betrayal 2	Chapter 12
Week 12	Lesson 12: Acceptance and Jealousy • Relational evaluation , "hurt feelings", ostracism , jealousy ***Oral presentations: relationships at work	Chapter 10
Week 13	Lesson 13: Securing the Future of a Relationship • Satisfaction in the couple	Chapter 14

	• Therapeutic intervention	
	FINAL EXAM	Chap. 7 - 14

*Please note that the schedule or the readings may be adjusted as the term progresses. If changes are made, they will be announced, and an updated schedule will be posted on the course website.

BIBLIOGRAPHY

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Watzlawick, P., Helmick-Beavin, J. & Jackson, D. (1972). *A Logic of Communication* . Paris: Éditions du Seuil.

Wiseman, R.S. (1980). Crisis theory and the process of divorce. In J. M. Henslin (Ed.) *Marriage and Family in a Changing Society* . NY: The Free Press.

iii. PSYC 3452: Cognitive Neuroscience

ABBREVIATED COURSE TITLE
Cognitive Neuroscience

CALENDAR CHANGES

13.12.2 Majors Courses

PSYC 3452 Cognitive Neuroscience

is an introduction to the experimental study of how the brain gives rise to the mind. We will explore the neural mechanisms that support the various cognitive processes covered in Introduction to Human Cognition, such as selective attention and perception, language, decision making, and consciousness. There will be a particular focus on the experimental techniques that allow us to make observations about the brain and make connections between the brain, cognition, and behaviour.

PR: PSYC 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES

PSYC 3452 Cognitive Neuroscience

is an introduction to the experimental study of how the brain gives rise to the mind. We will explore the neural mechanisms that support the various cognitive processes covered in Introduction to Human Cognition, such as selective attention and perception, language, decision making, and consciousness. There will be a particular focus on the experimental techniques that allow us to make observations about the brain and make connections between the brain, cognition, and behaviour.

PR: PSYC 2421,2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotation basis along with other similarly structured courses (i.e., lecture courses of ~40 students who are Psychology or Behavioural Neuroscience majors), potentially in one

semester in alternate years. Offering this course would not require any additional teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

This course can be taught by Blaire Dube, Heath Matheson, Jonathan Fawcett, but could potentially be taught by other cognition faculty or instructors with the relevant background.

A proposed syllabus is below.

PSYC 3452 – Cognitive Neuroscience

Date/Time/Location

Instructor:

Name
Email:
Office:
Office Hours:
Prerequisites: PSYC 2910, PSYC 2911, PSYC 2930, PSYC 2421, and admission to a Major in Psychology or Behavioural Neuroscience

TA:

Important Dates

Course Overview and Objectives

Cognitive Neuroscience is a rapidly growing field that sits at the intersection of psychology and neuroscience, fusing studies of human cognition and behavior with an interest in understanding the inner workings of the brain. The goal of this course is to provide an introduction to this fascinating field. Students will be introduced to the wide array of cutting-edge methodological techniques used in cognitive neuroscience, including neuroimaging (e.g., fMRI, EEG, TMS), patient studies, and behavioral approaches. We will explore how these approaches have enriched our understanding of human cognition, examining topics such as perception, object recognition, attention, memory, language, and social cognition.

Format

The course will be delivered in person, with lecture slides posted before each class. The lectures will cover content from the assigned textbook chapter, with a particular emphasis on concepts deemed especially important or relevant. Lectures will also cover other topics, like discussing a relevant research article or study, examining research methods in Cognitive Neuroscience, looking at and understanding data, and discussing real issues in the field of Cognitive Neuroscience.

Class Cancellations: Please consult official MUN communications (e.g., www.mun.ca, MUNSafe app, Twitter, etc.) for updates on weather-related campus closures. If class is cancelled due to campus closure, then class topics may be shifted to the next class; review classes may be eliminated if necessary. If campus is closed on the date of a midterm, then the midterm will be held on the next class date. For any other possible cancellations, you will be notified via an announcement on the course Brightspace page.

In the case of disruption or cancelation, and in the case of revisions to evaluation methods, the instructor or the Head of the department will notify all students registered in the course via the course shell in Brightspace. Any necessary revisions to the evaluation methods will be made in consultation with the students registered in this course. If a student demonstrates that they would be disadvantaged by the change, then, as per 6.7.4 of the University Calendar, accommodations will be made.

Textbook

The recommended textbook for this course is:

> Gazzaniga, M. S., Ivry, R. B., & Mangun, G. R. (2018). *Cognitive Neuroscience: The Biology of the Mind* (**5th ed**.). New York: W.W.Norton

Evaluation

Research Report: Pre-Registration		**40%**
Exams (3): *2 in class, 1 during formal exam period*	20% each	**60%**
PREP Participation Bonus (up to 3%)		

Assignments & Tests

Research Report (40%): You will prepare a document called a ***pre-registration***, which is a type of preliminary version of a scientific manuscript. Pre-registrations are becoming more common, particularly as Open Science initiatives start to gain traction. A scientific pre-registration allows researchers to propose and document (or "register") an experiment they are planning on conducting. The goal is to make important decisions about the project (like detailed hypotheses) and how data will be treated *before the analysis stage.* This reduces researcher degrees of freedom, enhances science transparency, and ensures that projects are well thought-out before data collection begins.

You will propose an experiment that makes use of one of the methodologies that we cover in class. Your report will include a background section including a brief review of the existing literature and your proposed research question, detailed hypotheses, a detailed methodology section, and a section describing the implications and limitations of your work. More information about this report will be discussed in class and available on Brightspace.

Exams (60%): There will be three exams consisting of multiple choice and short answer questions. Two of these exams will be in-class, and one will be during the formal exam period scheduled by the Registrar's Office.

PREP: You may choose to participate in psychology experiments for bonus credit points. You may earn up to 3% bonus marks through PREP, but **at least 2% must come from in-person experiments** (only 1% may be obtained through online studies). You can view a list of available research experiences at http://mun.sona-systems.com. You will see a link to create a new account. Use your @mun.ca email address when you make your account. When you login for the first time, you will be provided with some background information on your rights and responsibilities as a student in PREP.

It is your choice to participate in any study. If you do not wish to participate in research, then you have the option of completing an alternative written assignment to earn the bonus credit points. Each assignment is worth one credit point, and you may choose to do as many as you wish, up to a maximum of 3. You may also choose to earn your bonus credit points with a combination of study participation and alternative written assignment(s). The choice is yours. Please contact Marilyn Simms (psych@mun.ca) for more information about the alternative assignment. Do not ask me, as I have very little to do with PREP/alternative assignments.

On that note, I have very limited access to PREP records. The only information I will get is the total number of credit points you've earned for the course. I cannot access which studies you've participated in, or whether your credit points have come from research participation or alternative assignment. Your grade cannot exceed 100% in this course.

Conduct

It is very easy to distract others in class if you are doing something that is not class related. Please keep cell phones out of sight during class (and please keep them silent)**.** If you must take or make an important call or text, then please leave the room to do so. Laptops/tablets are permitted, but if you feel the need to use your computer for anything unrelated to class (checking e-mail, social networking, etc.), please leave the room to do so. **You will not be permitted access to cell phones or laptops during exams.** (Students who may need additional technological accommodations in class or during exams should contact the Blundon Centre and the course instructor; see below.)

Academic Integrity: Students are expected to adhere to principles of academic integrity. **I**f you are uncertain about how to properly cite original sources in academic writing, please contact the instructor or TA for additional assistance before you submit a written assignment for evaluation. Please see the University Calendar Section 6.12 regarding policies related to academic misconduct. **Cheating is not worth the risk to your academic career. If you're ever feeling so stressed that a few extra points in this course seem worth risking so much, please consider talking to me, your TA, or campus counseling services (see below).**

Use of AI: The use of generative AI and AI-assisted technologies, such as chat GPT, is allowed in this course for writing assignments. However, it is the responsibility of the student to ensure that written work submitted 1) addresses the goals of the writing assignment, 2) contains

reliable information with sound sources, and 3) is well written with respect to clarity, format, organization of thoughts and transitions between ideas.

It is also required that should a student use AI and/or AI-assisted technologies that the following declaration be inserted at the beginning of the document. Failure to do so could result in a reduction of grade (to be determined based on the severity of the case) as a result of academic dishonesty. Please note that this declaration does not excuse the use of inaccurate or false citations/references, or the inclusion of plagiarized materials.

Declaration of generative AI and AI-assisted technologies in the writing process:

During the preparation of this work [NAME TOOL / SERVICE] was used to [REASON]. After using this tool/service, the content was reviewed and edited as needed and I take full responsibility for the content of the written work.

Accessibility and Equity

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 (www.mun.ca/policy/site/policy.php?id=239) 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 (Blundon Centre) by emailing blundon@mun.ca.

Please contact the course instructor privately to discuss any accommodations you may require in the classroom. Remember that the Blundon Centre requires advance registration for exam-writing accommodations (at least 2 weeks prior to mid-terms and 4 weeks prior to final exams), and you will be expected to write exams at the regular class location for the standard duration if you do not register to write with the Blundon Centre.

Additional Supports: Memorial University offers a broad range of supports, many of which are listed at www.mun.ca/currentstudents/student/ and https://munsu.ca/resource-centres/. In particular, you might want to make use of:

- *The Commons* (QEII library) provides access to print, electronic and technology resources (including free internet access).
- *The Counselling Centre* (UC-5000) helps students develop their personal capabilities, ranging from study strategies to assisting distressed students.
- *Student Life* (ASK, UC-3005) answers questions about such things as courses, housing, books, financial matters and health.
- *The Writing Centre* (SN-2053, https://www.mun.ca/writingcentre/) is a free facility for students and helps them become better writers and critical thinkers.

- *The MUN Campus Food Bank* (Global Learning Centre) is open for all MUN students, employees, and pensioners dealing with food insecurity (https://www.mun.ca/campusfoodbank/About_Us.php)
- Free *Microsoft Office 365* download (https://my.mun.ca/)
- *NL Public Libraries* (https://nlpl.ca/use-the-library/free-internet-and-computers.html) also provide off-campus access to print, electronic and technology resources (including free internet access).

Tentative Schedule of Lecture Topics and Readings

Date	Topic	Reading
September		
Weds, Sept 4	Introduction & Assignment Review	Syllabus
Fri, Sept 6	Overview of the brain	Chapter 2
Mon, Sept 9	Methods	Chapter 3
Weds, Sept 11	Methods	Chapter 3
Fri, Sept 13	Methods	Chapter 3
Mon, Sept 16	Perception	Chapter 5
Weds, Sept 18	Perception	Chapter 5
Fri, Sept 20	Object Recognition	Chapter 6
Mon, Sept 23	Object Recognition	Chapter 6
Weds, Sept 25	*Review for Midterm 1*	
Fri, Sept 27	**MIDTERM 1**	
Mon, Sept 30	No classes	
October		
Weds, Oct 2	Attention	Chapter 7
Fri, Oct 4	Attention	Chapter 7
Mon, Oct 7	Learning and Memory	Chapter 9
Weds, Oct 9	Learning and Memory	Chapter 9
Fri, Oct 11	Learning and Memory	Chapter 9
Mon, Oct 14	No classes	
Weds, Oct 16	Motor Control	Chapter 8
Fri, Oct 18	Motor Control	Chapter 8
Mon, Oct 21	Motor Control	Chapter 8
Weds, Oct 23	Emotion	Chapter 10
Fri, Oct 25	Emotion	Chapter 10
Mon, Oct 28	*Review for Midterm 2*	
Weds, Oct 30	**MIDTERM 2**	
November		
Fri, Nov 1	Language	Chapter 11
Mon, Nov 4	Language	Chapter 11
Weds, Nov 6	No classes	
Fri, Nov 8	Language and Hemispheric Specialization	Chapter 4
Mon, Nov 11	Cognitive Control	Chapter 12
Weds, Nov 13	Cognitive Control	Chapter 12
Fri, Nov 15	Cognitive Control	Chapter 12
Mon, Nov 18	Social Cognition	Chapter 13
Weds, Nov 20	Social Cognition	Chapter 13
Fri, Nov 22	Consciousness	Chapter 14
Mon, Nov 25	Consciousness	Chapter 14
Weds, Nov 27	Consciousness	Chapter 14
Fri, Nov 29	*Final Exam review*	
Mon, Dec 2	*Last day of classes*	

Please Note: The instructor reserves the right to make changes to the schedule for any reason.

iv. PSYC 3651 Clinical Psychology

ABBREVIATED COURSE TITLE
Clinical Psychology

CALENDAR CHANGES

13.12.2 Majors Courses

PSYC 3651 Clinical Psychology

provides an exploration into the foundational principles, theories, and practices that define the field of clinical psychology. This course offers students an overview of the theoretical frameworks and practical applications used in understanding and treating psychological disorders. Specific emphasis will be placed on current evidence-based practices in the field as well as clinical psychology's role within the broader context of mental health care.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES

PSYC 3651 Clinical Psychology

provides an exploration into the foundational principles, theories, and practices that define the field of clinical psychology. This course offers students an overview of the theoretical frameworks and practical applications used in understanding and treating psychological disorders. Specific emphasis will be placed on current evidence-based practices in the field as well as clinical psychology's role within the broader context of mental health care.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

SECONDARY CALENDAR CHANGES
n/a

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotation basis along with other similarly structured courses (i.e., lecture courses of ~40

students who are Psychology or Behavioural Neuroscience majors), potentially in one semester in alternate years. Offering this course would not require any additional teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

This course is being proposed as a 3000-level small enrollment course. There will be an assigned textbook. Instructors can be Clinical Faculty members in the Psychology Department, or clinicians in the community who are Registered Psychologists (i.e., Per Course Instructors).

A proposed syllabus is below:

Course Title: Introduction to Clinical Psychology
Course Code: PSYC 3651
Semester: Winter 2026
Mode of Delivery: In-person

Course description: PSYC 3651 Introduction to Clinical Psychology provides an exploration into the foundational principles, theories, and practices that define the field of clinical psychology. This course offers students an overview of the theoretical frameworks and practical applications used in understanding and treating psychological disorders. Specific emphasis will be placed on current evidence-based practices in the field as well as clinical psychology's role within the broader context of mental health care.

Grading system: Students will be graded according to the grading scheme outlined in the University Calendar. Specifically, a numeric grading system will be used in this course (i.e., a value between 0% and 100% will be submitted to the Registrar).

Learning Objectives:

By the end of this course, students will be able to:

1. **Understand** the historical development and core concepts of clinical psychology.
2. **Identify** various psychological disorders and their diagnostic criteria.
3. **Apply** basic principles of psychological assessment and treatment.
4. **Evaluate** ethical issues and professional standards in clinical practice.
5. **Develop** critical thinking skills in analyzing clinical research and case studies

Required Text:

- **Title:** "Clinical Psychology "
- **Author:** Jonathan S. Abramowitz et al.
- **Edition:** 9th Edition; year 2023

Course Evaluation:

Assessments:

1. **Midterm Exam:** 25%
2. **Final Exam:** 35%
3. **Case Study Analysis:** 10%

4. **Group presentation:** 10%
5. **Participation and Attendance:** 10%
6. **Research Article Critique:** 10%

Use of AI: Academic integrity means taking full responsibility for the academic work you submit in this course, so that I can evaluate you on the basis of your own knowledge and effort. If generative AI tools have been used in the preparation of any course work, it should be appropriately acknowledged and cited as per the specific citation style used in this course.

The Memorial University Code states that “students, faculty, and staff shall treat others with respect and fairness, be responsible and honest, and uphold the highest standards of academic integrity.” (Memorial University of Newfoundland, University Calendar, Section 2.0).

Instructor Feedback: Instructor feedback is welcome and informal suggestions encouraged at any time. Mid way through the course, you will be asked to provide feedback on what you think is going well and what may need changing in order to improve the class functioning and learning environment.

Additional Policies: The instructor for this class is committed to student equity and the provision of a safe 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. Please discuss any concerns you may have with the instructor directly.

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

Students are expected to adhere to those principles which constitute proper academic

conduct. A student has the responsibility to know which actions, as described under Academic Offences in the University Regulations, could be construed as dishonest or improper. Students found guilty of an academic offence may be subject to a number of penalties commensurate with the offence including reprimand, reduction of grade, probation, suspension or expulsion from the University. For more information regarding this policy, students should refer to the University Regulations for Academic Misconduct (Section 6.12) in the University Calendar.

Support for Students: Academic supports are available including, but not limited to:

Memorial University Libraries, The Commons (QEII Library), The Glenn Roy Blundon Centre, The Writing Centre, Center for Innovation in Teaching and Learning, Information Technology Services, Academic Advising, and specific departmental help centres.

Student life supports are available including, but not limited to: Student Wellness and Counselling Centre, Student Support and Crisis Management, MUN Chaplaincy, Sexual Harassment Office, The Circle: First Nations, Inuit & Métis Students Resource Centre, Disability Information Support Centre, International Students Resource Centre, Sexuality and Gender Advocacy, Student Parent Assistance & Resource Centre,

Students Older Than Average, Intersections – A Resource Centre for Marginalized Genders, and specific departmental societies.

Course Structure:

Week 1: Introduction to Clinical Psychology

- **Topics:** History, scope, and roles of clinical psychologists
- **Readings:** Chapters 1 & 2 of textbook
- **Activity:** Course overview and introduction to basic concepts

Week 2: Ethics in Clinical Psychology

- **Topics:** General Principles and Ethical Standards in Clinical Psychology
- **Readings:** Chapter 3
- **Activity:** Ethical dilemma and ethical decision making process

Week 3: Psychological Assessment and Clinical Interviewing

- **Topics:** Psychological testing and clinical interviews
- **Readings:** Chapters 4, 5,
- **Activity:** Workshop on conducting a clinical interview

Week 4: Psychological Assessment and Psychological Testing

- **Topics:** Psychological Testing
- **Readings:** Chapter 6
- **Activity:** Case study analysis

Week 5: Treatment Approaches

- **Topics:** Cognitive-behavioral therapy (CBT), psychodynamic therapy, and other therapeutic modalities
- **Readings:** Chapter 9, 10
- **Activity:** Role-play CBT and other therapies

Week 6: Treatment Approaches continued

- **Topics:** Cognitive-behavioral therapy (CBT), psychodynamic therapy, and other therapeutic modalities
- **Readings:** Chapters 11, 12
- **Activity:** Role-play CBT and other therapies

Week 7: Special Topics in Clinical Psychology

- **Topics:** Child and adolescent psychology and medial health
- **Readings:** Chapter 16
- **Activity:** Group presentation on special topics

Week 8: Research Methods in Clinical Psychology

- **Topics:** Research design, statistical methods, and evidence-based practice
- **Readings:** Assigned research article
- **Activity:** Critique of a clinical psychology research article

Week 9: Clinical Psychology in Practice

- **Topics:** Day in the life of a clinical psychologist, professional development
- **Readings:** Assigned reading will be provided by guest speaker
- **Activity:** Guest speaker

Week 10: Review and Exam Preparation

- **Topics:** Comprehensive review of course material
- **Activity:** Review session and Q&A

Week 11: Final Exam

v. PYC 3751: Animal Communication

ABBREVIATED COURSE TITLE
Animal Communication

CALENDAR CHANGES

PSYC 3751 Animal Communication

uses an interdisciplinary approach, grounded in theory, to explore the different sensory modalities used by animals to communicate, and how signals mediate interactions between individuals and in social networks. In addition to presenting classic and modern studies in animal communication, students will be guided towards developing critical thinking skills and improving their ability to synthesize and apply the concepts they learn.

PR: PSYC 2910, 2911, 2930, and PSYC 2721 or BIOL 3750, which can be waived with instructor permission, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 3751 Animal Communication

uses an interdisciplinary approach, grounded in theory, to an interdisciplinary approach and grounded in theory, the course will explore the different sensory modalities used by animals to communicate, and how signals mediate interactions between individuals and in social networks. In addition to presenting classic and modern studies in animal communication, students will be guided towards developing critical thinking skills and improving their ability to synthesize and apply the concepts they learn.

PR: PSYC 2910, 2911, 2930, and PSYC 2721 or BIOL 3750, which can be waived with instructor permission, and admission to a Major in Psychology or Behavioural Neuroscience.

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotating basis along with other similarly structured courses (i.e., lecture courses of ~40 students who are Psychology or Behavioural Neuroscience majors), potentially in one semester in alternate years. Offering this course would not require any additional teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
Potential instructors include Pierre-Paul Bitton (Psychology) and David Wilson (Psychology).

A proposed syllabus is below.

Animal Communication (PSYC 3751)

Prerequisites PSYC 2910, 2911, 2930; PSYC 2721 or BIOL 3750; and admission to a major in Psychology or Behavioural Neuroscience

Instructor Dr. Pierre-Paul Bitton; Department of Psychology, e-mail: pbitton@mun.ca; Office hours: TBD 2 hours a week, or by appointment

Course synopsis

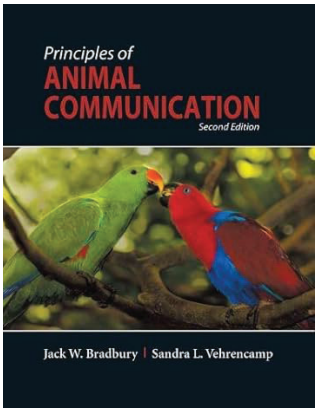
This third-year course will introduce students to animal communication, one of the most active areas of research in behavioral ecology, neurobiology, and evolutionary biology. Using an interdisciplinary approach and grounded in theory, the course will explore the different sensory modalities used by animals to communicate, and how signals mediate interactions between individuals and in social networks. In addition to presenting classic and modern studies in animal communication, students will be guided towards developing critical thinking skills and improving their ability to synthesize and apply the concepts they learn.

Topics

Signals and communication; Sound signal production; Sound signal reception; Visual signal production; Visual signal reception; Chemical signals; Short range modalities – Touch, Electroreception; Economics of communication; Signal evolution; Conflict resolution, Social integration; Communication networks

Resources

1) Textbook: Bradbury and Vehrencamp (2011). Principles of Animal Communication. This is still the best general animal communication textbook.



2) **Web Resources**:

Brightspace course website: Online information for this course will be shared through the website Brightspace. When you log in to Brightspace (https://online.mun.ca/) with your MUN log-in username and password you should see an icon for PSYC####. The course website will contain material that I will upload throughout the semester. Specifically, look for the "Course Content" tab on the main page. There, you will see several folders including 'Lectures'. I will always post these before class meetings. There is also an announcement section on the main page of the course website. This will be used to make any necessary announcements such as class cancellations or changes to test dates, etc. This will be my main mode of communication with you outside of the class meetings.

Lecture slides: Lecture slides are uploaded as a courtesy to assist your note taking, and have been edited to contain most but not all information presented in class. Therefore, they are not a substitute for attending class. You are responsible for taking your own notes in class.

3) **Other resources**

Memorial University has many services that provide support to students. These include the Counselling Centre (workshop on study tips, test taking, etc…), International Students Office, QEII Library, Writing Centre, and Psych Society Help Centre (AS 348). If there are areas in which you are struggling, or need extra assistance please contact me. If I cannot help you, I will refer you to someone who should be able.

Course Evaluation

Term Exam – Covers 1st half of material	25%
Final exam – Date determined by Registrar's office - Comprehensive	25%
Assignments – Five assignments throughout semester worth 5% each	25%
Term Project -	

Policy regarding missed tests

A missed term exam will not be re-scheduled. If an acceptable excuse is provided within 48 hours of the scheduled exam, the mark from the missed test will be added to the final exam.

Only valid reasons for missing a test:

1) A medical condition*.

2) Death of a family member*

3) A special circumstance discussed with and approved by the Instructor prior to the test or exam (e.g. representing the university at a sporting event).

If you miss a test or the final exam for a non-valid reason (e.g., sleeping in, forgetting the exam time, etc.) you will receive a grade of zero for that test or exam.

*Note: You must provide written documentation for a missed test by email to the instructor within 48 hours of a missed test. This does not mean a doctor's note, but at least an email indicating that you could not make the test due to being sick.

For a missed final exam, you will have to contact the Department of Psychology immediately and comply with university and departmental regulations concerning a missed final exam.

General Policies

All students are encouraged to consult the current MUN calendar concerning drop and add dates, general undergraduate regulations, and academic offenses. The University diary can be found at: https://www.mun.ca/regoff/calendar/sectionNo=GENINFO-0086. Please note that any violation of "proper conduct" (e.g. cheating, etc.) will result in your removal from the course and possible additional academic penalties (see following section).

Code of conduct

Memorial University of Newfoundland expects that students will conduct themselves in compliance with University Regulations and Policies, Departmental Policies, and Federal, Provincial and Municipal laws, as well as codes of ethics that govern students who are members of regulated professions. The Student Code of Conduct outlines the behaviors which the University considers to be non-academic misconduct offences, and the range of remedies and/or penalties which may be imposed. Academic misconduct is outlined in UNIVERSITY REGULATIONS - Academic Misconduct in the University Calendar.

For more information about the Student Code of Conduct, see www.mun.ca/student. Also, a document is available on the Department's web site to inform students about plagiarism (http://www.mun.ca/psychology/undergrad/Plagiarism.pdf).

Accommodation of students with disabilities

Memorial University of Newfoundland is committed to supporting inclusive education based on the principles of equity, accessibility and collaboration. Accommodations are provided within the scope of the University Policies for the Accommodations for Students with Disabilities (www.mun.ca/policy/site/policy.php?id=239). Students who may need an academic accommodation should identify themselves to the instructor as soon as possible so that provisions can be made to help facilitate the learning experience, and are asked to initiate the request with the Glenn Roy Blundon Centre at the earliest opportunity (www.mun.ca/blundon).

Email policy

To contact me by e-mail, use pbitton@mun.ca, not the internal email in Brightspace. Every effort will be made to respond within 24h, with the exceptions of weekends and holidays. When emailing me you must use your MUN assigned email address. Also, please include in your email the course (PSYC####) preferably in the subject line. Also, check D2L and this syllabus for general information about the course (test dates, etc.) before emailing me.

vi. PSYC 3752: Animal Cognition

ABBREVIATED COURSE TITLE
Animal Cognition

CALENDAR CHANGES

PSYC 3752 Animal Cognition

will use a comparative approach to teach students about how animals acquire, process, and use information. Early lectures will cover mechanisms such as perception, learning, memory, and recognition. Later lectures will consider how cognition enables animals to interact with their physical and social environments by facilitating navigation, counting, planning, tool use, communication, cooperation, social learning, teaching, and other abilities. A focus will be on why these abilities evolve in some animal groups but not others.

PR: PSYC 2910, 2911, 2930, and PSYC 2721 or BIOL 3750, which can be waived with instructor permission, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 3752 Animal Cognition

will use a comparative approach to teach students about how animals acquire, process, and use information. Early lectures will cover mechanisms such as perception, learning, memory, and recognition. Later lectures will consider how cognition enables animals to interact with their physical and social environments by facilitating navigation, counting, planning, tool use, communication, cooperation, social learning, teaching, and other abilities. A focus will be on why these abilities evolve in some animal groups but not others.

PR: PSYC 2910, 2911, 2930, and PSYC 2721 or BIOL 3750, which can be waived with instructor permission, and admission to a Major in Psychology or Behavioural Neuroscience.

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotating basis along with other similarly structured courses (i.e., lecture courses of ~40

students who are Psychology or Behavioural Neuroscience majors), potentially in one semester in alternate years. Offering this course would not require any additional teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
Potential instructors include Carolyn Walsh (Psychology) and David Wilson (Psychology).

A proposed syllabus is below.

Animal Cognition (PSYC 3752)

Semester and section details TBD; 3 credit hours

Lectures	In-person; date, time, and location TBD
Prerequisites	PSYC 2910, 2911, 2930; PSYC 2721 or BIOL 3750; and admission to a major in Psychology or Behavioural Neuroscience
Instructor	Dr. David Wilson; Department of Psychology, SN-3085; phone: 709-864-8291; email: dwilson@mun.ca; office hours: TBD, by appointment, or by dropping in whenever my door is open
Teaching assistant	TBD; office hours by appointment
Course communications	Notifications about the course will be posted to students via Brightspace; students wishing to contact the instructor should email dwilson@mun.ca; every effort will be made to respond to emails within 24 hours

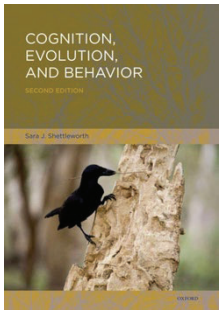
Course synopsis

This course will use a comparative approach that integrates theory from psychology, ecology, and evolution to teach students about how and why animals acquire, process, and use information. Early lectures will cover fundamental mechanisms of cognition, such as perception, learning, memory, and recognition. The second part of the course will consider how cognition enables animals to interact with their physical and social environments. For example, how do animals navigate, do they comprehend time, can they count, plan, and use tools? When interacting with others, do they learn from them, communicate, cooperate, and teach? Do animals have culture, theory of mind, and language. A major focus will be on why these abilities evolve and why they are limited to certain animal groups.

Topics

categorization; cognitive evolution; communication; cooperation; episodic memory; human versus non-human cognition; learning; memory; metacognition; numerical cognition; perception; social knowledge; social learning; spatial cognition; temporal cognition; tool use

Required textbook: Shettleworth SJ (2009). Cognition, Evolution, and Behaviour, 2nd edition. Oxford University Press, USA. pp. 720.



Supporting material available on Brightspace (http://online.mun.ca)

1. Lecture slides: most lecture material will be available
2. Assignments
3. Materials for group and class discussions

Evaluation (grades will be posted on Brightspace; assignments will be returned when marked)

Assignments (4 assignments x 10 marks each)	**40%**
Writing project and oral presentation on chosen topic	**20%**
Midterm test	**20%**
Final exam	**20%**

Notes about grades

You are expected to take the tests at the scheduled times. If a test is missed for an acceptable reason, then a make-up test will need to be written at a time agreed upon by the student and instructor. If a time cannot be agreed upon, then the missed test will be written immediately following the final exam. If a test is scheduled for a date when class is cancelled, it will be deferred to the following class. Assignments 1–4 and the writing project must be submitted to Brightspace by their due dates or will incur a penalty of 10% per day (including weekends) that they are late. The oral presentation must be given during the assigned class or will incur a penalty of 10% per class that it is not given.

Method of instructional continuity

In the case of a class disruption or cancellation, and in the case of revisions to evaluation methods, the instructor or the Head of the Department will notify all students registered in the course via Brightspace. Any necessary revisions to evaluation methods will be made in consultation with the students registered in this course. If a student demonstrates that they would be disadvantaged by the change, then, as per 6.7.4 of the University Calendar, accommodations will be made.

If Memorial University campus operations are required to change because of health concerns related to the COVID-19 pandemic or any other public health concern, it is possible that this course will rapidly move to a fully online delivery format. Remote lectures will be held synchronously via Webex, and

recordings of the lectures will be posted afterwards on Brightspace. Notification of remote learning methods, including Webex connection details and any changes to course materials, will be communicated via Brightspace. All assignments for the course can be completed remotely and uploaded to Brightspace, so no changes are necessary if we transition to remote learning. Midterm and final exams that are normally held in person will be completed online. Instructions for exams will be communicated via Brightspace.

Policy on professionalism

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

Students with disabilities

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 (www.mun.ca/policy/site/policy.php?id=239) 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 academic accommodations are provided in a timely manner. You can contact Accessibility Services (Blundon Centre) by emailing blundon@mun.ca.

vii. PSYC 4471: Research Experience in Cognitive Neuroscience

ABBREVIATED COURSE TITLE
Res Exp Cog Neuro

CALENDAR CHANGES

13.12.2 Majors Courses

PSYC 4471 Research Experience in Cognitive Neuroscience

allows students to gain experience in cognitive neuroscience research techniques.

PR: PSYC 2910, 2911, 2930, 3452, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4471 Research Experience in Cognitive Neuroscience

allows students to gain experience in cognitive neuroscience research techniques.

PR: PSYC 2910, 2911, 2930, 3452, and admission to a Major in Psychology or Behavioural Neuroscience.

LIBRARY REPORT
Library report pending.

RESOURCE IMPLICATIONS
None. As part of our larger set of program revisions, this course would be offered on a rotating basis along with other similarly structured courses (i.e., research experience courses of ~20 students who are Psychology or Behavioural Neuroscience majors), potentially in one semester in alternate years. Offering this course would not require any additional teaching resources, but would be assigned to the regular teaching load for department faculty.

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
This course can be taught by Blaire Dube, Heath Matheson, Jonathan Fawcett, but could potentially be taught by other cognition faculty or instructors with relevant background.

A proposed syllabus is below.

PSYC 4471 – Research Experience in Cognitive Neuroscience

Classes: Mondays/Wednesdays/Fridays 12:00pm-12:50pm

Location: SN 3071

Instructor: Dr. Jonathan Fawcett

Email: jfawcett@mun.ca

Phone: 864-8020

Office: SN 3073

Office Hours: Thursdays 10am-12pm

(or by appointment)

TA:

Email:

Office Hours: (by appointment)

Course Overview

Prerequisites: PSYC 3452 and admission to a Major in Psychology or Behavioural Neuroscience

This course is designed to provide hands-on research experience in cognitive neuroscience and related research areas. This year, we will be focusing on the application of electroencephalography (EEG) to the study of human attention or memory. In the first part of the course, we will be reading some primary research articles and discussing topics related to the acquisition and analysis of EEG data.

The first part of this course will focus on the nature of EEG data, its processing and analysis. Based on these lectures, students will process and analyze a sample data set provided to them, producing a results section detailing those analyses. In the second part of the course, students will work in groups to formulate their own experiment for their Research Project. Students will work together to generate an idea, design and program the experiment, and complete an ethics proposal. Students will collect data and analyze the results and will present their findings in a group presentation at the end of the semester. Each student will also submit an independently written research report based on their experiment.

Evaluation

Assignment	Due Date (11:59pm)	Percentage
Data Processing and Analysis Project	October 16	20%
Group Ethics Proposal	October 21	5%
Group Data Analysis Plan	October 28	15%
Group Project Presentation	November 25, 27, 29	15%
Group Project Participation		5%
Final Research Paper	December 8	40%

General Assignment Policies

All assignments should be submitted online in the appropriate folder on the course Brightspace page. Feedback (commented documents) will be provided in response to your submissions here. **Late assignments will be penalized 5% per day late and will not be accepted one week after the original due date.** If you are unable to submit an assignment on its scheduled due date, please contact the instructor *before* the due date.

Software Requirements

There is no textbook required for this class: all readings are available online. For our group experiments, we will be learning how to program in PsychoPy. PsychoPy is free software that allows you to build Python code-based experiments, but in a more user-friendly environment (i.e., you are not required to learn how to code, although coding can help improve the complexity of your experiment). You are encouraged to download the latest version of PsychoPy and begin watching some of the recommended tutorials (below) early in the semester. In addition, this course will make use of Matlab (or Octave, a free variant of that program) to process your data. You will need to download this software from the MUN website.

Computer Requirement

Research in cognitive neuroscience relies heavily on computer use; nearly all experiments are programmed and run on computers. A significant component of this course will therefore involve using a computer to work on programming an experiment for the group research project (see below). The required software for this course is available for both Windows and Apple operating systems, and is all available free of charge. If you do not have a computer available to you for regular use, please contact the course instructor regarding use of one of the desktop computers in the lab room.

Class Delivery

Classes will be held in the 3rd floor Psychology computer lab. However, given that most MUN students have and prefer using their own laptops, the computer lab space no longer includes a desktop computer for each student in the class. Students are asked to bring their own laptop to class. If you do not have a

laptop available for working in class, then please contact the course instructor to discuss arrangements, as a limited number of desktop computers will be available for use during class.

Health and Accommodations

To protect yourself and those around you, it is important to stay home if you feel unwell or if you are under quarantine because you have potentially been exposed to a virus. Please keep me informed so we can work together to allow you to keep up with the course materials should you need to miss classes. You will not be penalized if you need to stay home for quarantine. Memorial University has recognized the importance of academic leniency as we work to keep our campus safe for all. Whenever possible, I can add a WebEx live stream of class to the in-person delivery to help you stay connected when you need to stay home.

Please note that I may also need to cancel in person classes from time to time for health reasons, either my own or my family's. If I do need to cancel a class (or switch to remote delivery), I will try to give you as much advance notice as possible, via Brightspace announcement. If possible, I will provide material via recorded content or make up the material in subsequent classes. Group participation can readily accommodate students working remotely during class time.

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 Accommodations for Students with Disabilities Policy (www.mun.ca/policy/site/policy.php?id=239) 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 academic accommodations are provided in a timely manner. You can contact Accessibility Services (Blundon Centre) by emailing blundon@mun.ca.

Please contact the course instructor privately to discuss any accommodations you may require in the classroom or regarding completion of assignments.

Evaluation

The use of generative AI and AI-assisted technologies, such as ChatGPT, is allowed in this course for writing assignments. However, it is the responsibility of the student to ensure that written work submitted: 1) addresses the goals of the writing assignment; 2) contains reliable information with sound sources; and 3) is well written with respect to clarity, format, organization of thoughts and transitions between ideas.

It is also required that should a student use AI and/or AI-assisted technologies that the following declaration be inserted in the document. Failure to do so could result in a reduction of grade (to be determined based on the severity of the case) as a result of academic dishonesty. Please note that this declaration does not excuse the use of inaccurate or false citations/references, or the inclusion of plagiarized materials.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work [NAME TOOL / SERVICE] was used in order to [REASON]. After using this tool/service, the content was reviewed and edited as needed and I take full responsibility for the content of the written work.

Paper 1: Data Processing and Analysis Tutorial (20%)

Following hands-on instruction concerning the processing of EEG data, students will be provided with a data set to process independently. You will then independently write an APA-style Results section of a research report for this experiment, as if it were one you were conducting the experiment, including a figure or table.

Research Project

Students will work in groups of five or six to complete a Research Project over the semester. The project must be in the realm of cognitive neuroscience, and we specifically recommend a simple paradigm, such as the production effect (discussed in class). In the project, students will perform additional background research and generate an experiment to test a hypothesis that has not previously been tested in the literature. Although we will work in class to learn how to use the PsychoPy Builder software, you will likely need to spend some time outside of class watching tutorial videos. We will also work in groups in class on programming your own experiment, and on collecting and analyzing data. Groups should have a good idea of what they will be examining by the mid-October, in time to prepare the ethics proposal. Details of group experiments will be finalized in class discussions on October 7 and 9.

Ethics Proposal (5%)

Prior to completing your group ethics proposal, you are required to complete an online tutorial in research ethics in Canada, the Tri-Council Policy Statement (TCPS 2). You can complete this tutorial online anytime before October 1 (and you may have already completed this tutorial—there is no need to re-do it if you have already completed it); there is a link to the tutorial available on Brightspace. You can obtain a .pdf certificate of completion for the course; submit this in the dropbox on Brightspace by October 6 at 11:59pm.

In class, we will discuss how to write an ethics proposal for your experiment. Students will work in their Research Project groups to write a proposal that will be reviewed by the Departmental Ethics Review Committee. An initial draft of this proposal is due on October 18 at 11:59pm. You will receive prompt feedback, and your final version is due on October 23 at 11:59pm so that it can be submitted to the review committee in time for data collection.

Group Data Analysis Plan (15%)

To ensure that groups are planning appropriately, a data analysis plan (and predictions) will be submitted prior to data collection. Groups will identify their experiment's independent and dependent variables, describe the planned statistical analyses, and make predictions about the pattern they expect to see. More details will be available on Brightspace. The data analysis plan is due on October 28 at 11:59pm.

Group Presentation (15%)

In the final week of classes of the semester, students will give group presentations on their Research Projects. You should cover the background, rationale, method, results, and discussion of your Research Project. Students in a group are expected to contribute equally to the presentation. Presentations should take approximately 20 minutes.

Group Participation (5%)

Everyone in a research project group is expected to contribute to the project. There will be plenty of class time to work on the group project, but you may require additional time outside of class to work on the project. Not everyone needs to contribute *equally* to every component of the project, but there are many aspects to consider, such that everyone can contribute *equitably*. That is, the group must select a general research project topic and a specific experiment. Stimuli must be found, the experiment programmed, and the data analyzed (and sometimes coded first). The ethics application must be completed and submitted, and the group presentation slides must be completed, etc.

Different individuals will likely have strengths in different areas; groups are expected to work together to determine how each member will contribute equitably to the project. At the end of the semester, you will be asked to suggest a participation grade for your group members (out of 5) via survey on Brightspace. The survey will be available during the final week of class and will close when the final papers are due (December 8).

Final Research Paper (40%)

Although students will work in groups on their Research Project, each student should work independently on their own final paper. Although I expect to see some overlap in the general outline of the paper (and of course the Methods and Results sections are likely to be highly similar), students should write their own papers. Final papers are due after the end of classes, Sunday, December 8 at 11:59pm.

Conduct

This is a small class, which means that it is very easy to distract others if you are doing something that is not class-related. Please keep cell phones out of sight during class (and certainly keep them silent). If you must take or make an important call (or text), then please leave the room to do so.

Students are expected to be aware of and adhere to principles of academic integrity. **If you are uncertain** about how to properly cite original sources in academic writing, please **contact the instructor or TA** for additional assistance **before you submit a written assignment** for evaluation. Please see the University Calendar Section 6.12 regarding regulations related to academic misconduct.

Topic Readings

Some readings may be posted on Brightspace if they are not currently available from the library.

Class Topics and Timeline

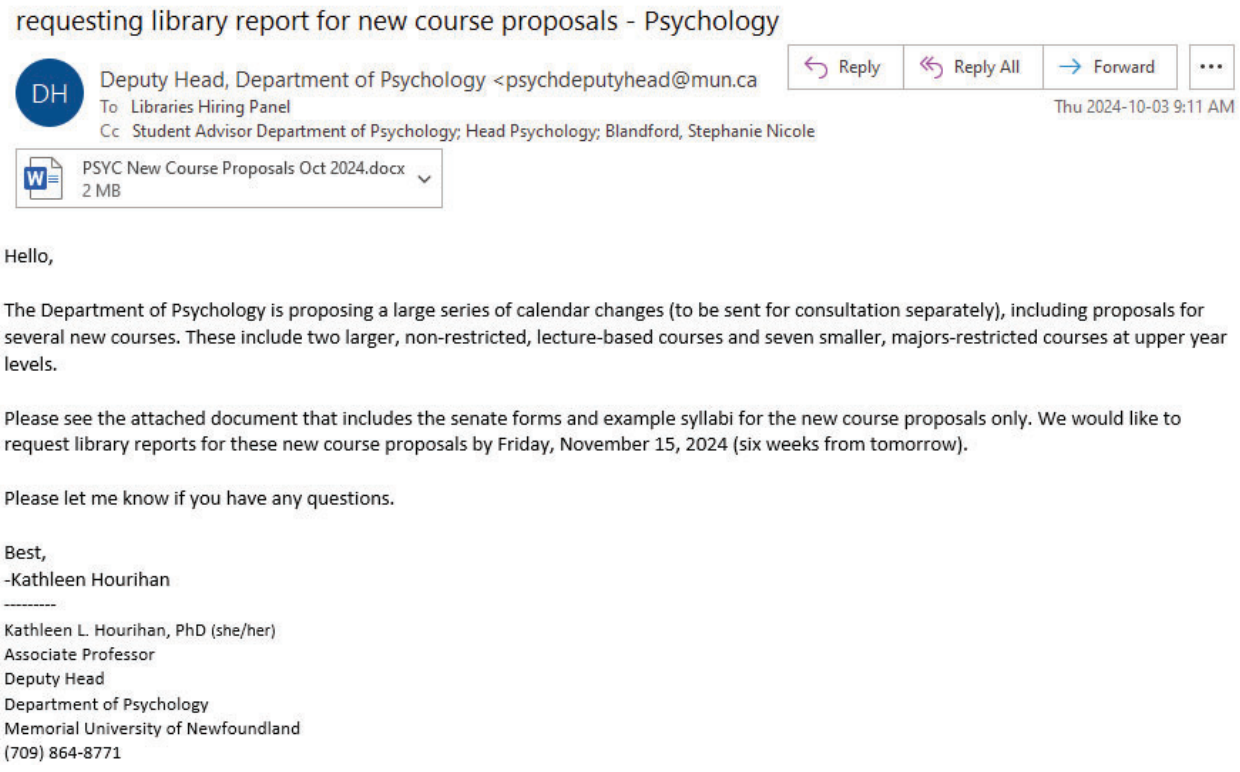
Week	General Content
Sept. 1	Introduction
Sept. 8	ERPs and Common Components
Sept. 15	ERP Experimental Design and the Principles of ERP Recording
Sept. 22	Artifacts and Fourier Analysis
Sept. 29	Averaging and Quantifying ERPs
Oct. 6	Statistical Analysis of ERPs
Oct. 13	Experiment Design and Experiment Building
Oct. 20	Experiment Building
Oct. 27	Experiment Building
Nov. 3	Data Collection
Nov. 10	Data Collection
Nov. 17	Data Analysis and Interpretation
Nov. 24	Group Presentations
Dec. 1	Group Presentations

1. Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Appendix Page for New Courses

1. CONSULTATIONS SOUGHT

As per standard Appendix Page. See **Part V: Consultations and Correspondence** for master list of consultees and text of their responses.

Specific to this section, consultation was sought with the library via the following request:



requesting library report for new course proposals - Psychology

DH

Deputy Head, Department of Psychology <psychdeputyhead@mun.ca

To Libraries Hiring Panel

Cc Student Advisor Department of Psychology; Head Psychology; Blandford, Stephanie Nicole

Reply | Reply All | Forward | ...

Thu 2024-10-03 9:11 AM

PSYC New Course Proposals Oct 2024.docx
2 MB

Hello,

The Department of Psychology is proposing a large series of calendar changes (to be sent for consultation separately), including proposals for several new courses. These include two larger, non-restricted, lecture-based courses and seven smaller, majors-restricted courses at upper year levels.

Please see the attached document that includes the senate forms and example syllabi for the new course proposals only. We would like to request library reports for these new course proposals by Friday, November 15, 2024 (six weeks from tomorrow).

Please let me know if you have any questions.

Best,
-Kathleen Hourihan

Kathleen L. Hourihan, PhD (she/her)
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Deputy Head
Department of Psychology
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2. RESPONSES RELEVANT TO THIS SECTION

None as of 05 November 2024

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Part III: Amended Courses

1. Amendments to PSYC Courses Being Renumbered
2. Amendments to PSYC Courses Having PRs Renumbered
3. Amendments to PSYC Courses Being Renumbered, PRs Revised
4. Amendments to PSYC Courses Being Renumbered and Now Allowed for PSYC Major
5. Amendments to PSYC Courses Changing to 2000 Level and Changing PRs
6. Amendments to PSYC Courses Changing to 3000 Level and Updating PRs
7. Amendments to PSYC Courses Removing PSYC 2520/2521 as PRs
8. Amendments to PSYC Courses Adding PSYC 2910, 2911, 2X21, and 2930 to PR
9. Amendment to PSYC 2010 Biological and Cognitive Development
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11. Appendix Page

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Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- **X Amended 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

1.Amendments to PSYC Courses Being Renumbered

COURSE NUMBER AND TITLE

i. PSYC 2520 Introduction to Behavioural Neuroscience
ii. PSYC 2521 Introduction to Behavioural Neuroscience for Behavioural Neuroscience Majors

REVISED COURSE NUMBER AND TITLE

i. PSYC 2821 Introduction to Behavioural Neuroscience
ii. PSYC 2822 Introduction to Behavioural Neuroscience for Behavioural Neuroscience Majors

RATIONALE

As part of our larger set of program revisions, these courses are being renumbered to be consistent with our course numbering system. For PSYC 2520, we are also removing the requirement to be a Psychology or Behavioural Neuroscience Major.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 2520 Introduction to Behavioural Neuroscience

CALENDAR CHANGES
PSYC ~~2520~~ 2821 Introduction to Behavioural Neuroscience

is based on the idea that psychological and neuroscience research efforts are synergistic. Neuroscience research can reveal mechanisms that help explain the mind and behavior, while concepts developed by psychological research often define the topics that neuroscience investigates. The course will survey a broad range of topics that include the fundamentals of neuroanatomy, neurophysiology, and neurodevelopment, as well as higher level functions such as motivation, emotion, sleep, memory, language, and mental illness.

CR: PSYC ~~2521~~, 2822, 2810, 2825, the former 2521~~the former PSYC 3801~~
PR: PSYC 1000 ~~1001 and admission to a Major in Psychology or Behavioural Neuroscience; minors may be permitted to take this course if space permits~~
EQ: the former PSYC 2520
UL: not applicable for credit towards the Major in Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES
PSYC 2821 Introduction to Behavioural Neuroscience

is based on the idea that psychological and neuroscience research efforts are synergistic. Neuroscience research can reveal mechanisms that help explain the mind and behavior, while concepts developed by psychological research often define the topics that neuroscience investigates. The course will survey a broad range of topics that include the fundamentals of neuroanatomy, neurophysiology, and neurodevelopment, as well as higher level functions such as motivation, emotion, sleep, memory, language, and mental illness.

CR: PSYC 2822, 2810, 2825, the former 2521
PR: PSYC 1000
EQ: the former PSYC 2520
UL: not applicable for credit towards the Major in Behavioural Neuroscience

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 2521 Introduction to Behavioural Neuroscience for Behavioural Neuroscience Majors

CALENDAR CHANGES
PSYC ~~2521~~ 2822 Introduction to Neuroscience for Behavioural Neuroscience Majors

is a comprehensive survey of the different domains of behavioural neuroscience, with an emphasis on systems level. It will cover a broad range of topics including the fundamentals of neuroanatomy, neurophysiology, and neurodevelopment, as well as higher level functions such as sleep, emotion, language, consciousness and mental illness. Students will be able to describe the basic mechanisms involved in neural system function and how they affect behaviour and several forms of neuroplasticity.

CR: PSYC ~~2520~~, 2821, 2810, 2825, the former 2520, ~~the former 3801~~
LH: one 3-hour laboratory period weekly
PR: PSYC 1000~~, 1001~~, admission to a Major in Behavioural Neuroscience, and ~~Science~~ SC 1807 and 1808.
EQ: the former PSYC 2521
UL: not applicable for credit towards the Major in Psychology

CALENDAR ENTRY AFTER CHANGES
PSYC 2822 Introduction to Neuroscience for Behavioural Neuroscience Majors

is a comprehensive survey of the different domains of behavioural neuroscience, with an emphasis on systems level. It will cover a broad range of topics including the fundamentals of neuroanatomy, neurophysiology, and neurodevelopment, as well as higher level functions such as sleep, emotion, language, consciousness and mental illness. Students will be able to describe the basic mechanisms involved in neural system function and how they affect behaviour and several forms of neuroplasticity.

CR: PSYC 2821, 2810, 2825, the former 2520
LH: one 3-hour laboratory period weekly
PR: PSYC 1000, admission to a Major in Behavioural Neuroscience, and SC 1807 and 1808
EQ: the former PSYC 2521
UL: not applicable for credit towards the Major in Psychology

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

2.Amendments to PSYC Courses Having PRs Renumbered

COURSE NUMBER AND TITLE

i. PSYC 3800 Cellular and Molecular Neuroscience
ii. PSYC 4753 Selected Topics in Animal Behaviour: Visual Ecology

REVISED COURSE NUMBER AND TITLE

n/a

RATIONALE

As part of our larger set of program revisions, this course will have its pre-requisites revised to account for revisions to the numbering of its pre-requisites. The ordering of the pre-requisites will be revised slightly to improve readability. PSYC 4753 will also be cross-listed with Biology.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 3800 Cellular and Molecular Neuroscience

CALENDAR CHANGES
PSYC 3800 Cellular and Molecular Neuroscience

addresses the structure and function of neurons and neural circuits and examines principles of electrochemical neural communication at the macroscopic, microscopic and molecular level. The relevance of this knowledge to understanding brain mechanisms of normal and diseased brain functions will be touched upon. The molecular basis of the formation of some types of memories will be explored.

LH: one laboratory period weekly
OR: Animal Care Online Training and Animal Handling Training must be completed prior to start of this course
PR: ~~PSYC; 2520 or 2521, Biology BIOL 1001 and 1002;~~ 2910, ~~2911, and 2930, or the former 2570, Biology 1001 and 1002;; and admission to a Major in Psychology or Behavioural Neuroscience and Science 1807 and 1808.~~
PR: PR: PR: PSYC 2821 or 2822; Biology 1001 and 1002; Science 1807 and 1808; either PSYC 2910 and PSYC 2911 and PSYC 2930 and admission to a Major in Psychology or Behavioural Neuroscience, or Statistics 2550 and permission of the instructor.

CALENDAR ENTRY AFTER CHANGES
PSYC 3800 Cellular and Molecular Neuroscience

addresses the structure and function of neurons and neural circuits and examines principles of electrochemical neural communication at the macroscopic, microscopic and molecular level. The relevance of this knowledge to understanding brain mechanisms of normal and diseased brain functions will be touched upon. The molecular basis of the formation of some types of memories will be explored.

LH: one laboratory period weekly
OR: Animal Care Online Training and Animal Handling Training must be completed prior to start of this course
PR: PR: PSYC 2821 or 2822; Biology 1001 and 1002; Science 1807 and 1808; either PSYC 2910 and PSYC 2911 and PSYC 2930 and admission to a Major in Psychology or Behavioural Neuroscience, or Statistics 2550 and permission of the instructor."

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A

RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 4753 Selected Topics in Animal Behaviour: Visual Ecology

CALENDAR CHANGES
PSYC 4753 Seminar in Visual Ecology

will examine the properties of light relevant to understanding animal communication, the origin and evolution of animal vision, the role of vision in communication, how visual systems and animal colouration coevolve with light environments, the detection of motion and polarization, visual modelling and more.

EQ: BIOL 4753
PR: PSYC 2721 or BIOL 3750, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES
PSYC 4753 Seminar in Visual Ecology

will examine the properties of light relevant to understanding animal communication, the origin and evolution of animal vision, the role of vision in communication, how visual systems and animal colouration coevolve with light environments, the detection of motion and polarization, visual modelling and more.

EQ: BIOL 4753
PR: PSYC 2721 or BIOL 3750, and admission to a Major in Psychology or Behavioural Neuroscience

SECONDARY CALENDAR CHANGES
BIOL 4753 Seminar in Visual Ecology

will examine the properties of light relevant to understanding animal communication, the origin and evolution of animal vision, the role of vision in communication, how visual systems and animal colouration coevolve with light environments, the detection of motion and polarization, visual modelling and more.

EQ: PSYC 4753
PR: PSYC 2721 or BIOL 3750

LIBRARY REPORT
N/A

RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

3.Amendments to PSYC Courses Being Renumbered, PRs Revised

COURSE NUMBER AND TITLE

i. PSYC 3810 Neurobiology of Learning and Memory
ii. PSYC 3820 Research Techniques in Behavioural Neuroscience
iii. PSYC 3830 Hormones and Behaviour
iv. PSYC 3840 Neurobiology of Stress
v. PSYC 3860 Neuropsychopharmacology

REVISED COURSE NUMBER AND TITLE

i. PSYC 3850 Neurobiology of Learning and Memory
ii. PSYC 3802 Research Techniques in Behavioural Neuroscience
iii. PSYC 3851 Hormones and Behaviour
iv. PSYC 3852 Neurobiology of Stress
v. PSYC 3853 Neuropsychopharmacology

RATIONALE
As part of our larger set of program revisions, these courses will have their pre-requisites revised to account for revisions to the numbering of their pre-requisites, and will be renumbered for consistency with our numbering system. The ordering of the pre-requisites will be revised slightly to improve readability.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

i. PSYC 3810 Neurobiology of Learning and Memory

CALENDAR CHANGES

PSYC 38~~1~~5<u>0</u> Neurobiology of Learning and Memory

examines how organisms adjust their behaviour to regularities in the environment as a result of experience. Experience changes behavior by modifying the nervous system. We will take a multidisciplinary approach, combining information from psychology and neuroscience to study learning and memory. Students will gain an understanding of sensitization, habituation, and classical and operant conditioning using animal models, with a particular emphasis on the synaptic and molecular changes that occur with learning and memory.

CR: PSYC 2825
EQ: the former PSYC 3250, the former PSYC 3810
PR: PSYC <u>2821 or 2822, PSYC 3800;</u> ~~2520 or 2521~~ <u>either PSYC 2910 and</u> 2911<u></u>~~, 2930 or the former 2570,PSYC 3800,~~ and admission to a Major in Psychology or Behavioural Neuroscience<u>, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor.</u>

CALENDAR ENTRY AFTER CHANGES

PSYC 3850 Neurobiology of Learning and Memory

examines how organisms adjust their behaviour to regularities in the environment as a result of experience. Experience changes behavior by modifying the nervous system. We will take a multidisciplinary approach, combining information from psychology and neuroscience to study learning and memory. Students will gain an understanding of sensitization, habituation, and classical and operant conditioning using animal models, with a particular emphasis on the synaptic and molecular changes that occur with learning and memory.

CR: PSYC 2825
EQ: the former PSYC 3250, the former PSYC 3810
PR: PSYC 2821 or 2822; PSYC 3800; either PSYC 2910 and PSYC 2911 and admission to a Major in Psychology or Behavioural Neuroscience, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 3820 Research Techniques in Behavioural Neuroscience

CALENDAR CHANGES

PSYC 382~~0~~02 Research Techniques in Behavioural Neuroscience

allows students to increase their understanding of how knowledge is generated in the study of neuroscience and behavior. Students will visit various on-campus laboratories that are engaged in research relevant to these fields. In addition to observations and hands-on tutorials, readings, discussions, and writing assignments will strengthen students' understanding of the techniques used to answer specific research questions in neuroscience and behaviour.

OR: Animal Care Online Training and Animal Handling Training must be completed prior to start of this course
PR: ~~Science 1807;~~ PSYC 2822, 2910, ~~2520 or 2521,~~ 2911, and 2930, ~~or the former 2570;~~ Biology 1001 and 1002~~;~~, Science 1807; and admission to a Major in ~~Psychology or~~ Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 3802 Research Techniques in Behavioural Neuroscience

allows students to increase their understanding of how knowledge is generated in the study of neuroscience and behavior. Students will visit various on-campus laboratories that are engaged in research relevant to these fields. In addition to observations and hands-on tutorials, readings, discussions, and writing assignments will strengthen students' understanding of the techniques used to answer specific research questions in neuroscience and behaviour.

OR: Animal Care Online Training and Animal Handling Training must be completed prior to start of this course
PR: PSYC 2822, 2910, 2911, and 2930, Biology 1001 and 1002, Science 1807, and admission to a Major in Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iii. PSYC 3830 Hormones and Behaviour

CALENDAR CHANGES

PSYC 38~~30~~51 Hormones and Behaviour

explores the behavioural effects of hormones and the question of how hormones act on the brain to influence behaviour. Topics include: basic concepts in neuroendocrinology, reproductive behaviour (sexual and parental), sexual differentiation of the brain and behaviour, aggressive behaviour, and the neuroendocrinology of stress, including the effects of stress on the brain and behaviour.

PR: PSYC 2821 or 2822; Biology 1001 and 1002**;** ~~2520 or 2521,~~ either PSYC 2910 and 2911, and PSYC 3920 ~~2930 or the former 2570, Biology 1001 and 1002;~~ and admission to a Major in Psychology or Behavioural Neuroscience, or Statistics 2550 and permission of the instructor.

CALENDAR ENTRY AFTER CHANGES

PSYC 3851 Hormones and Behaviour

explores the behavioural effects of hormones and the question of how hormones act on the brain to influence behaviour. Topics include: basic concepts in neuroendocrinology, reproductive behaviour (sexual and parental), sexual differentiation of the brain and behaviour, aggressive behaviour, and the neuroendocrinology of stress, including the effects of stress on the brain and behaviour.

PR: PSYC 2821 or 2822; Biology 1001 and 1002; either PSYC 2910 and PSYC 2911 and PSYC 3920 and admission to a Major in Psychology or Behavioural Neuroscience, or Statistics 2550 and permission of the instructor.

SECONDARY CALENDAR CHANGES

N/A

LIBRARY REPORT

N/A

RESOURCE IMPLICATIONS

None

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

N/A

iv. PSYC 3840 Neurobiology of Stress

CALENDAR CHANGES

PSYC 384~~0~~52 Neurobiology of Stress

will cover topics including the effects of stress on the immune system, ~~hypothalamicpituitary-adrenal~~ hypothalamic-pituitary-adrenal axis, neurogenesis and neuroplasticity, neurotransmitter and neuropeptide release, cognition and emotional processing, and in utero and early postnatal development. The relationship between stress and mental disorders such as depression, posttraumatic stress disorder, anxiety disorders, schizophrenia, bipolar disorder, substance abuse and addiction, dementia and age-related cognitive decline as well as resilience to stress will be discussed.

PR: PSYC 2821 or 2822; ~~2520 or 2521~~ either 2910~~,~~ and 2911 and 2930, ~~or the former 2570,~~ and admission to a Major in Psychology or Behavioural Neuroscience, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor.

CALENDAR ENTRY AFTER CHANGES

PSYC 3852 Neurobiology of Stress

will cover topics including the effects of stress on the immune system, hypothalamic-pituitary-adrenal axis, neurogenesis and neuroplasticity, neurotransmitter and neuropeptide release, cognition and emotional processing, and in utero and early postnatal development. The relationship between stress and mental disorders such as depression, posttraumatic stress disorder, anxiety disorders, schizophrenia, bipolar disorder, substance abuse and addiction, dementia and age-related cognitive decline as well as resilience to stress will be discussed.

PR: PSYC 2821 or 2822; either PSYC 2910 and PSYC 2911 and PSYC 2930 and admission to a Major in Psychology or Behavioural Neuroscience, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

v. PSYC 3860 Neuropsychopharmacology

CALENDAR CHANGES

PSYC 38~~60~~53 Neuropsychopharmacology

introduces students to the neurochemical and molecular underpinnings of behavior, with special emphasis on the biological principles underlying the etiology, pathophysiology and treatment of mental disorders. As a broad subdiscipline of neuroscience, it is ideal for those seeking to integrate neuroanatomy, neurophysiology, pharmacology and the behavioural sciences. It will provide a thorough understanding and appreciation about how basic and clinical research can be synthesized and used for the development of various forms of therapies.

PR: PSYC 2821 or 2822; ~~2520 or 2521~~, either PSYC 2910 and PSYC 2911~~,~~ and PSYC 2930 ~~or the former 2570, and 2821 or 2822~~ and admission to a Major in Psychology or Behavioural Neuroscience, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor.

CALENDAR ENTRY AFTER CHANGES

PSYC 3853 Neuropsychopharmacology

introduces students to the neurochemical and molecular underpinnings of behavior, with special emphasis on the biological principles underlying the etiology, pathophysiology and treatment of mental disorders. As a broad subdiscipline of neuroscience, it is ideal for those seeking to integrate neuroanatomy, neurophysiology, pharmacology and the behavioural sciences. It will provide a thorough understanding and appreciation about how basic and clinical research can be synthesized and used for the development of various forms of therapies.

PR: PSYC 2821 or 2822; either PSYC 2910 and PSYC 2911 and PSYC 2930 and admission to a Major in Psychology or Behavioural Neuroscience, or Biology 1001 and Biology 1002 and Statistics 2550 and permission of the instructor.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

4.Amendments to PSYC Course Being Renumbered and Now Allowed for PSYC Major

COURSE NUMBER AND TITLE

i. PSYC 2150 Introduction to Forensic Psychology
ii. PSYC 2151 Health Psychology
iii. PSYC 2740 Domestic Animal Behaviour
iv. PSYC 3533 Sexual Behaviour
v. PSYC 4810 Human Neuropsychology

REVISED COURSE NUMBER AND TITLE

i. PSYC 3120 Forensic Psychology
ii. PSYC 3121 Health Psychology
iii. PSYC 3720 Domestic Animal Behaviour
iv. PSYC 3520 Sexual Behaviour
v. PSYC 3821 Human Neuropsychology

RATIONALE

As part of our larger set of program revisions, these courses are being renumbered to be consistent with our course numbering system, and some courses' pre-requisites will be updated. The name of one course is also being revised. We will also be allowing these courses to be counted for certain program requirements for the Psychology Major.

One aspect of our revised program is grouping similar types of courses at the same level, with "similar" focusing on both course offering format as well as level of specificity of content. In the new program, the 2000 level represents area-specific introductory/foundational topics, both in the specific areas of psychology represented in our department and in general methodology and statistics. The 3000 level represents more advanced or specific topics within one or more foundational areas of Psychology. For example, Forensic Psychology is primarily considered social psychology, but also represents contributions from cognitive, clinical, and developmental psychology. Therefore, these courses will all be grouped at the 3000 level to represent their broader or more applied psychology content.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 2150 Introduction to Forensic Psychology

Abbreviated Course Title
Forensic Psychology

CALENDAR CHANGES

PSYC ~~2150~~ 3120 ~~Introduction to~~ Forensic Psychology

will provide an in-depth overview of the relationship between psychology and the law. A variety of topics will be discussed and critically evaluated, including the use and misuse of psychology-based investigative methods such as offender and geographic profiling, detection of deception, investigative interviewing, eyewitness testimony, jury decision-making, corrections and treatment, risk assessment, and criminal responsibility.

PR: PSYC 1001
EQ: the former PSYC 2150
~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRY AFTER CHANGES

PSYC 3120 Forensic Psychology

will provide an in-depth overview of the relationship between psychology and the law. A variety of topics will be discussed and critically evaluated, including the use and misuse of psychology-based investigative methods such as offender and geographic profiling, detection of deception, investigative interviewing, eyewitness testimony, jury decision-making, corrections and treatment, risk assessment, and criminal responsibility.

PR: PSYC 1001
EQ: the former PSYC 2150

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 2151 Health Psychology

ABBREVIATED COURSE TITLE
Health Psychology

CALENDAR CHANGES

PSYC ~~2151~~ 3121 Health Psychology
will explore the history, aims and future of health psychology. Topics covered will consider the contributions of a wide range of psychological theory within the context of psychosocial risk factors for illness, illness prevention, health promotion, and the health care system itself. These theories extend from rather individualistic notions of health and wellness (e.g., personality, attitudes, and behaviour) to concepts associated with characteristics of the broader social environment (e.g., social support, economic challenges, and organizational factors). An overall bio-psycho-social approach to health and wellness is explored.

PR: PSYC 1001
EQ: the former PSYC 2151
~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRY AFTER CHANGES

PSYC 3121 Health Psychology
will explore the history, aims and future of health psychology. Topics covered will consider the contributions of a wide range of psychological theory within the context of psychosocial risk factors for illness, illness prevention, health promotion, and the health care system itself. These theories extend from rather individualistic notions of health and wellness (e.g., personality, attitudes, and behaviour) to concepts associated with characteristics of the broader social environment (e.g., social support, economic challenges, and organizational factors). An overall bio-psycho-social approach to health and wellness is explored.

PR: PSYC 1001
EQ: the former PSYC 2151

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iii. PSYC 2740 Domestic Animal Behaviour

NOTE: Although there is an existing calendar entry for PSYC 2740, we did not include an explicit equivalency because PSYC 2740 has not ever been offered since it was added to the calendar, so no students will have ever obtained credit for PSYC 2740.

ABBREVIATED COURSE TITLE
Domestic Animal Behaviour

CALENDAR CHANGES

PSYC ~~2740~~ 3720 Domestic Animal Behaviour

focuses on behaviour in domestic animals, with a particular emphasis on dogs. Although dogs are one of the oldest domesticated species, canine science is just beginning to reveal insights into dog behaviour. Course topics will include the process of domestication, animal cognition, social behaviour and organization, human-animal interactions, and behaviour as an animal welfare indicator. When appropriate, the behaviour of other species will be examined for comparison.

PR: PSYC 1000 or permission from instructor for students with relevant experience

CALENDAR ENTRY AFTER CHANGES

PSYC 3720 Domestic Animal Behaviour

focuses on behaviour in domestic animals, with a particular emphasis on dogs. Although dogs are one of the oldest domesticated species, canine science is just beginning to reveal insights into dog behaviour. Course topics will include the process of domestication, animal cognition, social behaviour and organization, human-animal interactions, and behaviour as an animal welfare indicator. When appropriate, the behaviour of other species will be examined for comparison.

PR: PSYC 1000 or permission from instructor for students with relevant experience

SECONDARY CALENDAR CHANGES
N/A

LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iv. PSYC 3533 Sexual Behaviour

ABBREVIATED COURSE TITLE
Sexual Behaviour

CALENDAR CHANGES

PSYC ~~3533~~ 3520 Sexual Behaviour

covers the most important aspects of human sexuality with a psychology theory and research framework. The course will examine the biological, behavioural and socio-cultural bases of the human sexual response. Topics include sexual interaction and communication, contraception, sexually transmitted infections, reproduction, sexual orientation, transgender and intersex, variations in sexual behaviour, sex and gender, sexual dysfunction and therapy, and sexual coercion.

PR: PSYC 1001
EQ: the former PSYC 3533
~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRY AFTER CHANGES

PSYC 3520 Sexual Behaviour

covers the most important aspects of human sexuality with a psychology theory and research framework. The course will examine the biological, behavioural and socio-cultural bases of the human sexual response. Topics include sexual interaction and communication, contraception, sexually transmitted infections, reproduction, sexual orientation, transgender and intersex, variations in sexual behaviour, sex and gender, sexual dysfunction and therapy, and sexual coercion.

PR: PSYC 1001
EQ: the former PSYC 3533

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

v. PSYC 4810 Human Neuropsychology

NOTE: The course delivery and evaluation format for this course will be revised substantially as it changes from PSYC 4810 (a smaller Majors-restricted course) to PSYC 3821 (a larger non-restricted course). We therefore have intentionally not set equivalency to the former PSYC 4810 for PSYC 3821, as we do not feel it would be appropriate for a Psychology Major already in the current program to be able to take PSYC 3821 and have it count as a 4000-level credit via equivalency

CALENDAR CHANGES

PSYC ~~4810~~ 3821 Human Neuropsychology

covers clinical disorders of sensation, perception, movement, memory, language and emotion that have resulted from brain damage or disease from the perspective of current knowledge of brain structure and function. Lateralization of function, disconnection syndromes, and mechanisms of recovery of function following brain damage will also be covered. Related experimental studies of brain structure and function in non-humans will be discussed.

~~Prerequisite: One of Psychology 2810, 3800 or 3801 (formerly 2850).~~
PR: PSYC 1000

CALENDAR ENTRY AFTER CHANGES

PSYC 3821 Human Neuropsychology

covers clinical disorders of sensation, perception, movement, memory, language and emotion that have resulted from brain damage or disease from the perspective of current knowledge of brain structure and function. Lateralization of function, disconnection syndromes, and mechanisms of recovery of function following brain damage will also be covered. Related experimental studies of brain structure and function in non-humans will be discussed.

PR: PSYC 1000

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

5.Amendments to PSYC Courses Changing to 2000 Level and Changing PRs

COURSE NUMBER AND TITLE

i. PSYC 3100 Social Psychology
ii. PSYC 3450 Human Cognition
iii. PSYC 3650 Abnormal Psychology
iv. PSYC 3750 Animal Behaviour

REVISED COURSE NUMBER AND TITLE

i. PSYC 2121 Introduction to Social Psychology
ii. PSYC 2421 Introduction to Human Cognition
iii. PSYC 2621 Introduction to Abnormal Psychology
iv. PSYC 2721 Introduction to Animal Behaviour

RATIONALE

As part of our larger set of program revisions, these courses will undergo several changes: move to the 2000 level; remove the requirement to be a Psychology/Behavioural Neuroscience major; remove the statistics requirements; replace the 2000 level pre-requisites with Psychology 1000 and/or 1001 (and Biology 1001, for Introduction to Animal Behaviour) only. The courses will be equivalent to their former numbering for program requirements.

One aspect of our revised program is grouping similar types of courses at the same level with other “similar” courses focusing on both course offering format as well as level of specificity of content. In the new program, the 2000 level represents area-specific introductory/foundational topics. Moving these courses to the 2000 level also aligns with the majority of Psychology programs at other universities in Canada. It will allow students to gain area-specific introductory knowledge sooner, to allow further study of more specific and advanced topics (including new courses proposed as part of these changes) as they progress through the program.

Although we will reserve seats for Majors, we are also opening up the courses to non-majors with appropriate introductory pre-requisites. This will help diversify the offerings in Psychology available to more students across campus.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 3100 Social Psychology

ABBREVIATED COURSE TITLE
Intro to Social Psychology

CALENDAR CHANGES

PSYC ~~3100~~ 2121 Introduction to Social Psychology

is an examination of the concepts and principles involved in social behaviour. Topics covered will include attitudes, social cognition, interpersonal relations, and group processes.

CR: the former PSYC 2100, the former PSYC 2125
EQ: the former PSYC 3100
PR: ~~PSYC 2520 or 2521, 2911, and 2930 or the former 2570, and admission to a Major in Psychology or Behavioural Neuroscience~~ PSYC 1000 and 1001

CALENDAR ENTRY AFTER CHANGES

PSYC 2121 Introduction to Social Psychology

is an examination of the concepts and principles involved in social behaviour. Topics covered will include attitudes, social cognition, interpersonal relations, and group processes.

CR: the former PSYC 2100, the former PSYC 2125
EQ: the former PSYC 3100
PR: PSYC 1000 and 10001

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 3450 Human Cognition

ABBREVIATED COURSE TITLE
Intro to Human Cognition

CALENDAR CHANGES

PSYC ~~3450~~ 2421 Introduction to Human Cognition

is an introduction to the experimental study of the mental representations and processes involved in human cognition. Topics such as attention, perception and pattern recognition, concepts and the organization of knowledge, language processes, mental imagery, reasoning, problem solving, decision making and skilled performance will be covered with an emphasis on experimental analysis and techniques.

CR: PSYC 2440, PSYC 2425
EQ: the former PSYC 3450
PR: ~~PSYC 2520 or 2521, 2911, and 2930 or the former 2570, and admission to a Major in Psychology or Behavioural Neuroscience~~ PSYC 1000 and 1001

CALENDAR ENTRY AFTER CHANGES

PSYC 2421 Introduction to Human Cognition

is an introduction to the experimental study of the mental representations and processes involved in human cognition. Topics such as attention, perception and pattern recognition, concepts and the organization of knowledge, language processes, mental imagery, reasoning, problem solving, decision making and skilled performance will be covered with an emphasis on experimental analysis and techniques.

CR: PSYC 2440, PSYC 2425
EQ: the former PSYC 3450
PR: PSYC 1000 and 1001

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iii. PSYC 3650 Abnormal Psychology

ABBREVIATED COURSE TITLE
Intro to Abnormal Psychology

CALENDAR CHANGES

PSYC ~~3650~~ 2621 Introduction to Abnormal Psychology

is an examination of the nature, explanation and treatment of psychological disorders with an emphasis on research methods and current findings.

CR: PSYC 3626
EQ: the former PSYC 3640 and the former PSYC 3650
PR: ~~PSYC 2520 or 2521, 2911, and 2930 or the former 2570, and admission to a Major in Psychology or Behavioural Neuroscience~~ PSYC 1000 and 1001

CALENDAR ENTRY AFTER CHANGES

PSYC 2621 Introduction to Abnormal Psychology

is an examination of the nature, explanation and treatment of psychological disorders with an emphasis on research methods and current findings.

CR: PSYC 3626
EQ: the former PSYC 3640 and the former PSYC 3650
PR: PSYC 1000 and 1001

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iv. PSYC 3750 Animal Behaviour

ABBREVIATED COURSE TITLE
Intro to Animal Behaviour

CALENDAR CHANGES

PSYC ~~3750~~ 2721 Introduction to Animal Behaviour

is an introduction to the mechanisms, development, function and evolution of behaviour in animals. Topics include the history of ethology and comparative psychology, and behavioural ecology; methods of animal behaviour study, behaviour of animals in relation to physiology, learning, communication, mating systems, and other areas in Biology and Psychology.

EQ: Biology ~~3750~~ 2721, the former Psychology 3750
PR: Biology 1001~~, 1002~~ and PSYC 1000 ~~2520 or 2521, 2911, and 2930 or the former 2570, and admission to a Major in Psychology or Behavioural Neuroscience~~

CALENDAR ENTRY AFTER CHANGES

PSYC 2721 Introduction to Animal Behaviour

is an introduction to the mechanisms, development, function and evolution of behaviour in animals. Topics include the history of ethology and comparative psychology, and behavioural ecology; methods of animal behaviour study, behaviour of animals in relation to physiology, learning, communication, mating systems, and other areas in Biology and Psychology.

EQ: Biology 2721, the former Psychology 3750
PR: Biology 1001 and PSYC 1000

SECONDARY CALENDAR CHANGES

BIOL ~~3750~~ 2721 Animal Behaviour

is an introduction to the mechanisms, development, function and evolution of behaviour in animals. Topics include the history of ethology and comparative psychology, and behavioural ecology; methods of animal behaviour study, behaviour of animals in relation to physiology, learning, communication, mating systems, and other areas in Biology and Psychology.

EQ: Psychology 2721, the former ~~PSYC~~ Psychology 3750, the former Biology 3750
PR: Biology 1001 and 1002~~; Statistics 2550 or any of the courses listed in the credit restrictions of Statistics 2550~~

LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

6.Amendments to PSYC Courses Changing to 3000 Level and Updating PRs

COURSE NUMBER AND TITLE

i. PSYC 4462 Human Memory
ii. PSYC 4910 History of Psychology
iii. PSYC 4920 Psychological Testing

REVISED COURSE NUMBER AND TITLE

i. PSYC 3451 Human Memory
ii. PSYC 3550 History of Psychology
iii. PSYC 3551 Psychological Testing

RATIONALE

As part of our larger set of program revisions, these courses will undergo several changes: They will move to the 3000 level, their pre-requisites will be updated to reflect new numbering of relevant courses, and slight edits to the specific description will be made. PSYC 4920 and 4910 will be updated to explicitly include PSYC 2910, 2911, and 2930 as PRs. The courses will be equivalent to their former numbering for program requirements.

These courses are being moved to the 3000 level as one aspect of our program revisions is to help identify the type of course format expected by the course level, with 4000 level courses representing only small (~20 students) research experience courses and seminar courses in the revised program. These majors-restricted courses will have 40 seats. Moving these courses to the 3000 level will also help emphasize that Majors have some flexibility in whether the courses could be taken in their third or fourth year of study.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 4462 Human Memory

CALENDAR CHANGES

PSYC ~~4462~~ 3451 Human Memory

surveys theories and research about how humans remember information and why they forget. Topics <u>may</u> include research on ~~sensory memory,~~ short-term <u>and</u> working memory, amnesia, forgetting, <u>autobiographical memory</u> ~~memory development,~~ and ~~semantic memory~~ <u>metamemory,</u> as well as practical issues such as how to improve memory.

PR: PSYC ~~3450~~ <u>2421, 2910, 2911, 2930,</u> and admission to a Major in Psychology or Behavioural Neuroscience.
<u>EQ: the former PSYC 4462</u>

CALENDAR ENTRY AFTER CHANGES

PSYC 3451 Human Memory

surveys theories and research about how humans remember information and why they forget. Topics may include research on short-term and working memory, amnesia, forgetting, autobiographical memory and metamemory, as well as practical issues such as how to improve memory.

PR: PSYC 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.
EQ: the former PSYC 4462

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 4910 History of Psychology

CALENDAR CHANGES

PSYC 3550 ~~4910~~ History of Psychology

is a study of paradigms and explanations in contemporary psychology in the context of their historical antecedents.

CR: PSYC 4910
~~CO: at the St. John's campus only: PSYC 3900 or 3950, or permission of instructor~~
PR: ~~30 credit hours in Psychology courses required in a Majors program. At the Grenfell Campus only, this must include PSYC 2950.~~ PSYC 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES

PSYC 3550 History of Psychology

is a study of paradigms and explanations in contemporary psychology in the context of their historical antecedents.

CR: PSYC 4910
PR: PSYC 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iii. PSYC 4920 Psychological Testing

CALENDAR CHANGES

PSYC ~~4920~~ 3551 Psychological Testing

focuses on the principles of psychological testing, relevant psychometric properties, and methods by which tests are developed. The course is designed to review the nature and use of psychological tests and will cover topics such as test norms, interpretability, reliability, item analysis, validity, and test development. This course includes a survey development and data management component where students will create and validate their own psychological survey.

CR: PSYC 3628
PR: PSYC 2910, 2911, 2930, 6 CH in any other ~~3~~2000-level ~~restricted~~ Psychology courses, and admission to a Major in Psychology or Behavioural Neuroscience.
EQ: the former PSYC 4920

CALENDAR ENTRY AFTER CHANGES

PSYC 3551 Psychological Testing

focuses on the principles of psychological testing, relevant psychometric properties, and methods by which tests are developed. The course is designed to review the nature and use of psychological tests and will cover topics such as test norms, interpretability, reliability, item analysis, validity, and test development. This course includes a survey development and data management component where students will create and validate their own psychological survey.

CR: PSYC 3628
PR: PSYC 2910, 2911, 2930, 6 CH in any other 2000-level Psychology courses and admission to a Major in Psychology or Behavioural Neuroscience.
EQ: the former PSYC 4920

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

7.Amendments to PSYC Courses Removing PSYC 2520/2521 as PRs

COURSE NUMBER AND TITLE

i. PSYC 3251 Learning
ii. PSYC 3350 Perception

REVISED COURSE NUMBER AND TITLE

n/a

RATIONALE

As part of our larger set of program revisions, these courses will have their pre-requisites revised to remove the requirement for PSYC 2520/2521.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 3251 Learning

CALENDAR CHANGES

PSYC 3251 Learning

introduces students to topics of learning phenomena and learning theories. Topics to be studied include the evolutionary context of learning, habituation and sensitization, Pavlovian conditioning, operant conditioning, and generalization and discrimination in learning. Applications of learning principles to topics such as child rearing, education, drug use and rehabilitation, as well as to other topics of contemporary interest, will also be discussed.

CR: PSYC 2225
PR: PSYC ~~2520 or 2521,~~2910, 2911, ~~and~~ 2930 ~~or the former 2570~~, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 3251 Learning

introduces students to topics of learning phenomena and learning theories. Topics to be studied include the evolutionary context of learning, habituation and sensitization, Pavlovian conditioning, operant conditioning, and generalization and discrimination in learning. Applications of learning principles to topics such as child rearing, education, drug use and rehabilitation, as well as to other topics of contemporary interest, will also be discussed.

CR: PSYC 2225
PR: PSYC 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 3350 Perception

CALENDAR CHANGES

PSYC 3350 Perception

is a broad survey of theory and research in sensation and perception.

PR: PSYC ~~2520 or 2521, the former 2570,~~ ~~and~~ 2910, 2911, ~~and~~ 2930 ~~or the former 2570,~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 3350 Perception

is a broad survey of theory and research in sensation and perception.

PR: PSYC 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

Memorial University of Newfoundland
Undergraduate Calendar Change Proposal Form
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8.Amendments to PSYC Courses Adding PSYC 2910, 2911, 2X21, and 2930 to PR

COURSE NUMBERS AND TITLES

i. PSYC 4050 Selected Topics in Developmental Psychology I
ii. PSYC 4051 Selected Topics in Developmental Psychology II
iii. PSYC 4052 Seminar in Mathematical Cognition
iv. PSYC 4053 Seminar in Childhood Memories and Forensic Implications
v. PSYC 4054 Seminar in Media Use Across Development
vi. PSYC 4070 Research Experience in Development Psychology
vii. PSYC 4150 Selected Topics in Social Psychology I
viii. PSYC 4151 Selected Topics in Social Psychology II
ix. PSYC 4152 Seminar in Skeptical Thinking
x. PSYC 4153 Seminar in Romantic Relationships
xi. PSYC 4154 Seminar in Social Psychology in Everyday Life
xii. PSYC 4170 Research Experience in Social Psychology
xiii. PSYC 4450 Selected Topics in Cognition I
xiv. PSYC 4451 Selected Topics in Cognition II
xv. PSYC 4452 Seminar in Metacognition
xvi. PSYC 4453 Seminar in Embodied Cognition
xvii. PSYC 4454 Seminar in Applied Cognition
xviii. PSYC 4470 Research Experience in Cognition
xix. PSYC 4500 Selected Topics in Psychology I
xx. PSYC 4501 Selected Topics in Psychology II
xxi. PSYC 4650 Selected Topics in Abnormal Behaviour I
xxii. PSYC 4651 Selected Topics in Abnormal Behaviour II
xxiii. PSYC 4652 Seminar in Substance Use and Behavioural Addiction in Youth
xxiv. PSYC 4653 Seminar in Health Psychology
xxv. PSYC 4654 Seminar in Obsessive-Compulsive and Related Disorders
xxvi. PSYC 4750 Selected Topics in Animal Behaviour I
xxvii. PSYC 4751 Selected Topics in Animal Behaviour II
xxviii. PSYC 4752 Domestic Animal Behaviour and Interactions with Humans
xxix. PSYC 4850 Selected Topics in Behavioural Neuroscience I
xxx. PSYC 4852 Selected Topics in Behavioural Neuroscience (Neurobiology of Time and Space)
xxxi. PSYC 4853 Selected Topics in Behavioural Neuroscience (Neurobiology of Sex)

xxxii. PSYC 4854 Selected Topics in Behavioural Neuroscience(Neurobiological Diseases and Disorders)

RATIONALE

As part of our larger set of program revisions, these courses will have their pre-requisites revised to reflect new numbering of relevant courses and to explicitly include PSYC 2910, 2911, and 2930. Outdate equivalencies will also be removed from some courses (4450,4451).

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

i. PSYC 4050 Selected Topics in Developmental Psychology I

REVISED COURSE NUMBER AND TITLE
N/A

CALENDAR CHANGES

PSYC 4050 Selected Topics in Developmental Psychology I

is an intensive examination of a specific topic in developmental psychology.

PR: PSYC ~~3050~~ 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4050 Selected Topics in Developmental Psychology I

is an intensive examination of a specific topic in developmental psychology.

PR: PSYC 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ii. PSYC 4051 Selected Topics in Developmental Psychology II

PSYC 4051 Selected Topics in Developmental Psychology II

REVISED COURSE NUMBER AND TITLE
N/A

CALENDAR CHANGES

PSYC 4051 Selected Topics in Developmental Psychology II

is an intensive examination of a specific topic in developmental psychology.

PR: PSYC ~~3050~~ 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4051 Selected Topics in Developmental Psychology II

is an intensive examination of a specific topic in developmental psychology.

PR: PSYC 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iii. PSYC 4052 Seminar in Mathematical Cognition

CALENDAR CHANGES

PSYC 4052 Seminar in Mathematical Cognition

examines the latest research regarding children's early learning of numbers and later learning of mathematics. Topics may include infants' numerical ability, counting, subitizing, basic arithmetic, fractions, conceptual versus procedural knowledge, individual differences in mathematics, gender differences, and selected topics in mathematics education. These specific topics will be related to developmental theory in order to explore the ways in which cognitive and developmental mechanisms are at play in mathematical learning.

PR: PSYC 2021, 2910, 2911, 2930, ~~3050~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES
PSYC 4052 Seminar in Mathematical Cognition

examines the latest research regarding children's early learning of numbers and later learning of mathematics. Topics may include infants' numerical ability, counting, subitizing, basic arithmetic, fractions, conceptual versus procedural knowledge, individual differences in mathematics, gender differences, and selected topics in mathematics education. These specific topics will be related to developmental theory in order to explore the ways in which cognitive and developmental mechanisms are at play in mathematical learning.

PR: PSYC 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iv. PSYC 4053 Seminar in Childhood Memories and Forensic Implications

CALENDAR CHANGES

PSYC 4053 Seminar in Childhood Memories and Forensic Implications

is an overview of issues related to children's memory for, and ability to talk about, real life events that they have experienced. Topics covered include autobiographical memories, children's earliest memories and childhood amnesia, and the implications in forensic psychology.

PR: PSYC 2021, 2910, 2911, 2930, ~~3050~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4053 Seminar in Childhood Memories and Forensic Implications

is an overview of issues related to children's memory for, and ability to talk about, real life events that they have experienced. Topics covered include autobiographical memories, children's earliest memories and childhood amnesia, and the implications in forensic psychology.

PR: PSYC 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

v. PSYC 4054 Seminar in Media Use Across Development

CALENDAR CHANGES

PSYC 4054 Seminar in Media Use Across Development

examines media's impacts on our social and cognitive development, focusing on how the use of various forms of media impact infants, young children, adolescents, and emerging adults. The aim is to discuss both the positive and negative consequences media has on our development.

PR: PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X, ~~two 3000-level majors courses (other than 3900)~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4054 Seminar in Media Use Across Development

examines media's impacts on our social and cognitive development, focusing on how the use of various forms of media impact infants, young children, adolescents, and emerging adults. The aim is to discuss both the positive and negative consequences media has on our development.

PR: PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

vi. PSYC 4070 Research Experience in Development Psychology

CALENDAR CHANGES

PSYC 4070 Research Experience in Developmental Psychology

allows students to gain research experience in selected areas of developmental psychology.

PR: PSYC 2021, 2910, 2911, 2930, ~~3050~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4070 Research Experience in Developmental Psychology

allows students to gain research experience in selected areas of developmental psychology.

PR: PSYC 2021, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

vii. PSYC 4150 Selected Topics in Social Psychology I

CALENDAR CHANGES

PSYC 4150 Selected Topics in Social Psychology I

is an intensive examination of a specific topic in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4150 Selected Topics in Social Psychology I

is an intensive examination of a specific topic in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

viii. PSYC 4151 Selected Topics in Social Psychology II

CALENDAR CHANGES

PSYC 4151 Selected Topics in Social Psychology II

is an intensive examination of a specific topic in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4151 Selected Topics in Social Psychology II

is an intensive examination of a specific topic in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

ix. PSYC 4152 Seminar in Skeptical Thinking

CALENDAR CHANGES

PSYC 4152 Seminar in Skeptical Thinking

will teach you how to identify pseudoscientific ideas that appear in the popular media. Among the issues covered will be the cognitive, motivational, and social determinants of questionable beliefs and controversial therapeutic techniques. Students will be armed with a “Baloney Detection Kit” that will help them distinguish between scientific and pseudoscientific claims.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4152 Seminar in Skeptical Thinking

will teach you how to identify pseudoscientific ideas that appear in the popular media. Among the issues covered will be the cognitive, motivational, and social determinants of questionable beliefs and controversial therapeutic techniques. Students will be armed with a “Baloney Detection Kit” that will help them distinguish between scientific and pseudoscientific claims.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

x. PSYC 4153 Seminar in Romantic Relationships

CALENDAR CHANGES

PSYC 4153 Seminar in Romantic Relationships

will focus on one of the most impactful social experiences humans have: romantic relationships. In doing so, students will be guided through the prevailing empirical results of this diverse and interdisciplinary field. Among the topics covered will be: introduction to the science of relationships; theory of relationships research; methodology of relationships research.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4153 Seminar in Romantic Relationships

will focus on one of the most impactful social experiences humans have: romantic relationships. In doing so, students will be guided through the prevailing empirical results of this diverse and interdisciplinary field. Among the topics covered will be: introduction to the science of relationships; theory of relationships research; methodology of relationships research.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xi. PSYC 4154 Seminar in Social Psychology in Everyday Life

CALENDAR CHANGES

PSYC 4154 Seminar in Social Psychology in Everyday Life

explores how human lives intersect with social psychological theories and ideas. The course will explore social psychological theories across many life domains – from relationships, work, finance, and behavioural and cognitive sciences to education and hobbies. Emphasis will be put on how current theories are experienced and expressed in our daily lives. Through project-based learning where science meets creativity, students will explore a variety of social psychological theories.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4154 Seminar in Social Psychology in Everyday Life

explores how human lives intersect with social psychological theories and ideas. The course will explore social psychological theories across many life domains – from relationships, work, finance, and behavioural and cognitive sciences to education and hobbies. Emphasis will be put on how current theories are experienced and expressed in our daily lives. Through project-based learning where science meets creativity, students will explore a variety of social psychological theories.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES

N/A

LIBRARY REPORT

N/A

RESOURCE IMPLICATIONS

None

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

N/A

xii. PSYC 4170 Research Experience in Social Psychology

CALENDAR CHANGES

PSYC 4170 Research Experience in Social Psychology

will provide research experience in a selection of areas typically studied by social psychologists such as attitudes, prejudice, groups and social cognition. Students will acquire experience with research methods that are used to advance the body of knowledge in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4170 Research Experience in Social Psychology

will provide research experience in a selection of areas typically studied by social psychologists such as attitudes, prejudice, groups and social cognition. Students will acquire experience with research methods that are used to advance the body of knowledge in social psychology.

PR: PSYC 2121, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xiii. PSYC 4450 Selected Topics in Cognition I

CALENDAR CHANGES

PSYC 4450 Selected Topics in Cognition I

is an intensive examination of a specific topic in cognition.

~~EQ: the former PSYC 4400~~
PR: PSYC 2121, 2910, 2911, 2930, ~~3100~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4450 Selected Topics in Cognition I

is an intensive examination of a specific topic in cognition.

PR: PSYC 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xiv. PSYC 4451 Selected Topics in Cognition II

CALENDAR CHANGES

PSYC 4451 Selected Topics in Cognition II

is an intensive examination of a specific topic in cognition.

~~EQ: the former PSYC 4401~~
PR: PSYC ~~3450~~ 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4451 Selected Topics in Cognition II

is an intensive examination of a specific topic in cognition.

PR: PSYC 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

LIBRARY REPORT
N/A

RESOURCE IMPLICATIONS
None

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xv. PSYC 4452 Seminar in Metacognition

CALENDAR CHANGES

PSYC 4452 Seminar in Metacognition

examines a wide variety of topics in the study of metacognition including judgements of learning, influences on judgements of learning, cognitive offloading, metacognitive illusions, predicting memory effects, multi-tasking, and responsible remembering. The focus of this course is on students' ability to understand and communicate the contents of research articles, as well as how to provide constructive feedback.

PR: PSYC ~~3450~~ 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4452 Seminar in Metacognition

examines a wide variety of topics in the study of metacognition including judgements of learning, influences on judgements of learning, cognitive offloading, metacognitive illusions, predicting memory effects, multi-tasking, and responsible remembering. The focus of this course is on students' ability to understand and communicate the contents of research articles, as well as how to provide constructive feedback.

PR: PSYC 2910, 2911, 2930, 2421, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xvi. PSYC 4453 Seminar in Embodied Cognition

CALENDAR CHANGES

PSYC 4453 Seminar in Embodied Cognition

builds on an understanding of fundamental cognitive mechanisms, this course provides further exploration of the mechanisms of cognition. Examples of topics to be studied include: What is cognition? What does the brain tell us about cognition? How do scientists study cognition? What is the role of the body in cognition?

PR: PSYC ~~3450~~ 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4453 Seminar in Embodied Cognition

builds on an understanding of fundamental cognitive mechanisms, this course provides further exploration of the mechanisms of cognition. Examples of topics to be studied include: What is cognition? What does the brain tell us about cognition? How do scientists study cognition? What is the role of the body in cognition?

PR: PSYC 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xvii. PSYC 4454 Seminar in Applied Cognition

CALENDAR CHANGES

PSYC 4454 Seminar in Applied Cognition

explores how cognitive processes contribute to real-world activities such as driving, music, eyewitness memory or reading. The focus throughout this course is on how to consume and present these topics to a research audience.

PR: PSYC ~~3450~~ 2421, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4454 Seminar in Applied Cognition

explores how cognitive processes contribute to real-world activities such as driving, music, eyewitness memory or reading. The focus throughout this course is on how to consume and present these topics to a research audience.

PR: PSYC 2421,2910, 2911, 2930, 2421, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xviii. PSYC 4470 Research Experience in Cognition

CALENDAR CHANGES

PSYC 4470 Research Experience in Cognition

allows students to gain research experience in selected areas of cognition.

PR: PSYC 2421, 2910, 2911, 2930, ~~3450~~ and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4470 Research Experience in Cognition

allows students to gain research experience in selected areas of cognition.

PR: PSYC 2910, 2911, 2930, 2421, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xix. PSYC 4500 Selected Topics in Psychology I

CALENDAR CHANGES

PSYC 4500 Selected Topics in Psychology I

is an intensive examination of a specific topic in psychology that crosses traditional subdisciplines.

PR: ~~two 3000-level majors courses (other than 3900)~~ PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X courses, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4500 Selected Topics in Psychology I

is an intensive examination of a specific topic in psychology that crosses traditional subdisciplines.

PR: PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X courses, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xx. PSYC 4501 Selected Topics in Psychology II

CALENDAR CHANGES

PSYC 4501 Selected Topics in Psychology II

is an intensive examination of a specific topic in psychology that crosses traditional subdisciplines.

PR: ~~two 3000-level majors courses (other than 3900)~~ PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X courses and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4501 Selected Topics in Psychology II

is an intensive examination of a specific topic in psychology that crosses traditional subdisciplines.

PR: PSYC 2910, 2911, 2930, 6 credit hours in any PSYC 2X2X courses, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxi. PSYC 4650 Selected Topics in Abnormal Behaviour I

CALENDAR CHANGES

PSYC 4650 Selected Topics in Abnormal Behaviour I

is an intensive examination of a specific topic in abnormal behaviour.

PR: PSYC ~~3650~~ 2621,2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4650 Selected Topics in Abnormal Behaviour I

is an intensive examination of a specific topic in abnormal behaviour.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxii. PSYC 4651 Selected Topics in Abnormal Behaviour II

CALENDAR CHANGES

PSYC 4651 Selected Topics in Abnormal Behaviour II

is an intensive examination of a specific topic in abnormal behaviour.

PR: PSYC ~~3650~~ 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4651 Selected Topics in Abnormal Behaviour II

is an intensive examination of a specific topic in abnormal behaviour.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxiii. PSYC 4652 Seminar in Substance Use and Behavioural Addiction in Youth

CALENDAR CHANGES

PSYC 4652 Seminar in Substance Use and Behavioural Addiction in Youth

will focus on the development of substance use and behavioural addictions in young people. Emphasis will be placed on substances and behaviours that are currently at the forefront of much societal debate and have recently generated increased academic research and discussion. Topics reviewed may include opioids, cannabis, internet gambling, video gaming, mobile technology, and social media. These topics will be reviewed primarily within the context of adolescent and young adult development.

PR: PSYC ~~3650~~ 2621,2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4652 Seminar in Substance Use and Behavioural Addiction in Youth

will focus on the development of substance use and behavioural addictions in young people. Emphasis will be placed on substances and behaviours that are currently at the forefront of much societal debate and have recently generated increased academic research and discussion. Topics reviewed may include opioids, cannabis, internet gambling, video gaming, mobile technology, and social media. These topics will be reviewed primarily within the context of adolescent and young adult development.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxiv. PSYC 4653 Seminar in Health Psychology

CALENDAR CHANGES

PSYC 4653 Seminar in Health Psychology

will focus on various areas of health psychology and behavioural medicine. Topics may include eating disorders; psychological factors affecting medical conditions; chronic disease management; health behaviour changes; chronic pain; substance use and addictive disorders; sleep and health; psycho-oncology; and health promotion.

PR: PSYC ~~3650~~ 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4653 Seminar in Health Psychology

will focus on various areas of health psychology and behavioural medicine. Topics may include eating disorders; psychological factors affecting medical conditions; chronic disease management; health behaviour changes; chronic pain; substance use and addictive disorders; sleep and health; psycho-oncology; and health promotion.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxv. PSYC 4654 Seminar in Obsessive-Compulsive and Related Disorders

CALENDAR CHANGES
PSYC 4654 Seminar in Obsessive-Compulsive and Related Disorders

will review the epidemiology, onset, course, symptom presentations, comorbidity, risk factors, screening/diagnosis, and treatment of obsessive-compulsive and related disorders. These topics will be reviewed within the context of adult rather than childhood and adolescent psychopathology.

PR: PSYC ~~3650~~ 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES
PSYC 4654 Seminar in Obsessive-Compulsive and Related Disorders

will review the epidemiology, onset, course, symptom presentations, comorbidity, risk factors, screening/diagnosis, and treatment of obsessive-compulsive and related disorders. These topics will be reviewed within the context of adult rather than childhood and adolescent psychopathology.

PR: PSYC 2621, 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxvi. PSYC 4750 Selected Topics in Animal Behaviour I

CALENDAR CHANGES

PSYC 4750 Selected Topics in Animal Behaviour I

is an intensive examination of a specific topic in animal behaviour.

PR: PSYC 2910, 2911, and 2930; PSYC ~~3750~~ 2721 or Biology 3750~~;~~, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4750 Selected Topics in Animal Behaviour I

is an intensive examination of a specific topic in animal behaviour.

PR: PSYC 2910, 2911, and 2930; PSYC 2721 or Biology 3750, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxvii. PSYC 4751 Selected Topics in Animal Behaviour II

CALENDAR CHANGES

PSYC 4751 Selected Topics in Animal Behaviour II

is an intensive examination of a specific topic in animal behaviour.

PR: PSYC 2910, 2911, and 2930; PSYC ~~3750~~ 2721 or Biology 3750~~;~~, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4751 Selected Topics in Animal Behaviour II

is an intensive examination of a specific topic in animal behaviour.

PR: PSYC 2910, 2911, and 2930; PSYC 2721 or Biology 3750, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxviii. PSYC 4752 Domestic Animal Behaviour and Interactions with Humans

CALENDAR CHANGES

PSYC 4752 Seminar in Domestic Animal Behaviour and Interactions with Humans

examines the mechanism, development, function, and evolution of behaviour in domestic animals, with an emphasis on dogs (Canis familiaris). Topics include, but are not limited to, applied animal behaviour, domestic animal cognition, social behaviour and organization, human-animal interactions, and behaviour as a welfare indicator.

PR: ~~PSYC 3750 or BIOL 3750 and either admission to a Major in Psychology or Behavioural Neuroscience or permission of the instructor~~ PSYC 2910, 2911, 2930; one of PSYC 2721 or PSYC 3720 or BIOL 3750 or permission of instructor; admission to a major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4752 Seminar in Domestic Animal Behaviour and Interactions with Humans

examines the mechanism, development, function, and evolution of behaviour in domestic animals, with an emphasis on dogs (Canis familiaris). Topics include, but are not limited to, applied animal behaviour, domestic animal cognition, social behaviour and organization, human-animal interactions, and behaviour as a welfare indicator.

PR: PSYC 2910, 2911, 2930; one of PSYC 2721 or PSYC 3720 or BIOL 3750 or permission of instructor; admission to a major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxix. PSYC 4850 Selected Topics in Behavioural Neuroscience I

CALENDAR CHANGES

PSYC 4850 Selected Topics in Behavioural Neuroscience I

is an intensive examination of a specific topic in behavioural neuroscience.

PR: ~~one of PSYC 3800, the former 3801, 3820, or the former PSYC 3250~~ PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4850 Selected Topics in Behavioural Neuroscience I

is an intensive examination of a specific topic in behavioural neuroscience.

PR: PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES

N/A

LIBRARY REPORT

N/A

RESOURCE IMPLICATIONS

None

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

N/A

xxx. PSYC 4852 Selected Topics in Behavioural Neuroscience (Neurobiology of Time and Space)

CALENDAR CHANGES

PSYC 4852 Selected Topics in Behavioural Neuroscience (Neurobiology of Time and Space)

will examine selected topics in timing, circadian rhythms, spatial learning and navigation.

PR: ~~one of the former PSYC 3250, 3800, the former 3801, 3810, 3820, 3830, 3840, or 3860~~ PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4852 Selected Topics in Behavioural Neuroscience (Neurobiology of Time and Space)

will examine selected topics in timing, circadian rhythms, spatial learning and navigation.

PR: PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES

N/A

LIBRARY REPORT

N/A

RESOURCE IMPLICATIONS

None

ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS

N/A

xxxi. PSYC 4853 Selected Topics in Behavioural Neuroscience (Neurobiology of Sex)

CALENDAR CHANGES

PSYC 4853 Selected Topics in Behavioural Neuroscience (Neurobiology of Sex)

will examine the development of sex differences in the brain and behaviour by considering both animal models and human studies.

PR: ~~one of the former PSYC 3250, 3800, the former 3801, 3810, 3820, 3830, 3840, or 3860~~ PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4853 Selected Topics in Behavioural Neuroscience (Neurobiology of Sex)

will examine the development of sex differences in the brain and behaviour by considering both animal models and human studies.

PR: PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

xxxii. PSYC 4854 Selected Topics in Behavioural Neuroscience (Neurobiological Diseases and Disorders)

CALENDAR CHANGES

PSYC 4854 Selected Topics in Behavioural Neuroscience (Neurobiological Diseases and Disorders)

will examine the neurobiology of neurodegenerative diseases/psychological disorders, and the potential of therapeutic interventions.

PR: ~~one of the former PSYC 3250, 3800, the former 3801, 3810, 3820, 3830, 3840, or 3860~~ PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

CALENDAR ENTRY AFTER CHANGES

PSYC 4854 Selected Topics in Behavioural Neuroscience (Neurobiological Diseases and Disorders)
will examine the neurobiology of neurodegenerative diseases/psychological disorders, and the potential of therapeutic interventions.

PR: PSYC 2910, 2911, 2930, at least three credit hours in any PSYC 38XX, and admission to a Major in Psychology or Behavioural Neuroscience.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

9.Amendment to PSYC 2010 Biological and Cognitive Development

COURSE NUMBER AND TITLE
PSYC 2010 Biological and Cognitive Development

REVISED COURSE NUMBER AND TITLE
PSYC 2021 Introduction to Child Development

ABBREVIATED COURSE TITLE
Intro Child Development

RATIONALE
As part of our larger set of program revisions, this course will be revised to provide a broader overview of all areas of developmental psychology, including some topics formerly covered in PSYC 2010 and PSYC 2020. It will remain open to all students who have the relevant introductory pre-requisites, and will now be allowed to count for a Psychology or Behavioural Neuroscience Major. It is also being renumbered for consistency with our new numbering system.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

CALENDAR CHANGES

PSYC 2021~~10 Biological and Cognitive~~ Introduction to Child Development

is a survey course covering the field of developmental psychology as it relates to child development, focusing on development in infancy and childhood. ~~of principles underlying human development from the prenatal stage to adolescence.~~ Topics may include (but are not limited to) physical development, language learning, cognitive development, emotional development, social development, moral development. ~~covered will include biological, physical, linguistic, sensory, cognitive and intellectual changes~~.

~~CR: PSYC 2025, PSYC 3050~~
EQ: the former PSYC 2010
PR: PSYC 1000 and 1001

~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRY AFTER CHANGES

PSYC 2021 Introduction to Child Development

is a survey course covering the field of developmental psychology as it relates to child development, focusing on development in infancy and childhood. Topics may include (but are not limited to) physical development, language learning, cognitive development, emotional development, social development, moral development.

EQ: the former PSYC 2010
PR: PSYC 1000 and 1001

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

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

10.Unique Amendment to PSYC Courses

COURSE NUMBER AND TITLE

i. PSYC 2800 Drugs and Behaviour
ii. PSYC 3050 Developmental Psychology
iii. PSYC 3900 Design and Analysis III
iv. PSYC 4770 Research Experience in Animal Behaviour

REVISED COURSE NUMBER AND TITLE

i. PSYC 3822 Drugs and Behaviour
ii. PSYC 3051 Cognitive Development
iii. PSYC 3910 Design and Analysis III
iv. N/A

NOTE

These courses feature unique combinations of amendments that do not align exactly with other categories. Each entry retains its own statement of rationale.

iii. PSYC 2800 Drugs and Behaviour

ABBREVIATED COURSE TITLE
Drugs & Behaviour

RATIONALE
As part of our larger set of program revisions, this course is being renumbered to be consistent with our course numbering system. We are adding in the pre-requisite of PSYC 1000, as this course covers relevant background content, and on occasion, students may obtain transfer credit for PSYC 1001 without having taken PSYC 1000 at MUN. We will also be allowing this course to be counted for certain program requirements for the psychology major.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

CALENDAR CHANGES

PSYC ~~2800~~ 3822 Drugs and Behaviour
is an examination of the neurophysiology of drug action, the measurable effect of drugs on experimentally controlled behaviour, and a survey of information available on common self-administered drugs and their immediate and long-term effects.

PR: PSYC 1000 and 1001
EQ: the former PSYC 2800
~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRY AFTER CHANGES

PSYC 3822 Drugs and Behaviour
is an examination of the neurophysiology of drug action, the measurable effect of drugs on experimentally controlled behaviour, and a survey of information available on common self-administered drugs and their immediate and long-term effects.

PR: PSYC 1000 and 1001
EQ: the former PSYC 2800

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

iv. PSYC 3050 Developmental Psychology

ABBREVIATED COURSE TITLE
Cognitive Development

RATIONALE
As part of our larger set of program revisions, this course will be revised to have more of its focus on cognitive development specifically. This is not a large change, as this course was already largely about cognitive development. Its prerequisites will be renumbered to be consistent with our course numbering system.

CALENDAR CHANGES
PSYC 305~~0~~1 Cognitive Developmen~~tal Psychology~~

is an examination of the methods of study and an evaluation of current findings and theoretical issues of importance to an understanding of cognitive development. Topics ~~will be drawn from~~ may include (but are not limited to) perception, learning, cognition, social learning, memory and language development.

~~CR: PSYC 2010, PSYC 2025~~
EQ: the former PSYC 3050
PR: PSYC ~~2520 or 2521~~ 2021, 2910, 2911, ~~and~~ 2930, ~~or the former 2570~~, and admission to a Major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES
PSYC 3051 Cognitive Development

is an examination of the methods of study and an evaluation of current findings and theoretical issues of importance to an understanding of cognitive development. Topics may include (but are not limited to) perception, learning, cognition, social learning, memory and language development.

EQ: the former PSYC 3050
PR: PSYC 2021 2910, 2911, 2930, and admission to a Major in Psychology or Behavioural Neuroscience

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

v. PSYC 3900 Design and Analysis III

ABBREVIATED COURSE TITLE
Design & Analysis III

RATIONALE
It was recently brought to the Department of Psychology's attention that the course description for PSYC 3900 no longer met the modern calendar criteria, and had been unchanged from at least 1994. As such we are proposing amending the description to accurately conform to the current calendar style. We are also renumbering the course for consistency with the rest of our program changes, and revising the pre-requisites accordingly.

CALENDAR CHANGES

PSYC 39~~0~~1<u>0</u> Design and Analysis III

~~is a course on complex and specialized research design in Psychology. Multifactor research designs that employ both between- and within-subjects independent variables. Advantages and disadvantages of using multifactor research designs to test psychological hypotheses. Hierarchical designs and incomplete factorials. The use of covariates and blocking to increase experimental precision. Problems created by missing data. Single subject designs. How to answer specific psychological questions in the context of complex designs. The design and analysis of non-experimental psychological research. Applications of such techniques as the analysis of variance and multiple linear regression to the data obtained with these research designs, with special attention to problems inherent in psychological research.~~
<u>will develop students' statistical literacy, critical thinking, and their ability to design and analyse professional-quality research in psychology. Topics covered include fundamental univariate statistical tests, with an emphasis on multiple regressions and linear modelling. Concepts and theory are covered in class while laboratory exercises develop student independence by working through published datasets.</u>

CR: PSYC 3950, Statistics 3520
LH: one laboratory period weekly
PR: PSYC 2911
<u>EQ: the former PSYC 3900</u>
OR: Students considering the Honours program ~~are strongly recommended to~~ <u>should</u> take PSYC 39~~0~~1<u>0</u> in the 3rd year of their program, i.e., in the year prior to starting their Honours dissertation (PSYC 499A/B), <u>as this course is required for admission to Honours</u>.

CALENDAR ENTRY AFTER CHANGES

PSYC 3910 Design and Analysis III

will develop students' statistical literacy, critical thinking, and their ability to design and analyse professional-quality research in psychology. Topics covered include fundamental univariate statistical tests, with an emphasis on multiple regressions and linear modelling. Concepts and theory are covered in class while laboratory exercises develop student independence by working through published datasets.

CR: PSYC 3950, Statistics 3520
LH: one laboratory period weekly
PR: PSYC 2911
EQ: the former PSYC 3900
OR: Students considering the Honours program should take PSYC 3910 in the 3rd year of their program, i.e., in the year prior to starting their Honours dissertation (PSYC 499A/B), as this course is required for admission to Honours.

SECONDARY CALENDAR CHANGES
N/A
LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

vi. PSYC 4770 Research Experience in Animal Behaviour

RATIONALE
As part of our larger set of program revisions, this course will have its pre-requisites revised to reflect new numbering of relevant courses and to explicitly include PSYC 2910. Some additional pre-requisites are revised to reflect requirements in the course considering that the course is cross-listed with Biology.

CALENDAR CHANGES

PSYC 4770 Research Experience in Animal Behaviour

allows students to gain research experience in selected areas of animal behaviour. This course may be offered in a usual 12-week semester or as a two-week field course.

EQ: Biology 4770
LC: either three hours of lecture per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; ~~PSYC 2520 or 2521, 2930 or the former 2570, 2911 and~~ PSYC ~~3750~~ 2721 or ~~BIOL~~Biology 3750; PSYC 2910 or Statistics 2550 or any of the courses listed in the credit restrictions of Statistics 2550 ~~and~~; admission to a major in Psychology or Behavioural Neuroscience

CALENDAR ENTRY AFTER CHANGES

PSYC 4770 Research Experience in Animal Behaviour

allows students to gain research experience in selected areas of animal behaviour. This course may be offered in a usual 12-week semester or as a two-week field course.

EQ: Biology 4770
LC: either three hours of lecture per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; PSYC 2721 or Biology 3750; PSYC 2910 or Statistics 2550 or any of the courses listed in the credit restrictions of Statistics 2550; admission to a major in Psychology or Behavioural Neuroscience

SECONDARY CALENDAR CHANGES

BIOL 4770 Research Experience in Animal Behaviour

allows students to gain research experience in selected areas of animal behaviour. This course may be offered in a usual 12-week semester or as a two-week field course.

EQ: Psychology 4770
LC: either three hours of lecture per week or a two-week field course that embodies equivalent instructional time
PR: Science 1807 and Science 1808; BIOL 3750 or Psychology 2721 or 2910; ~~3750~~; Statistics 2550 or any of the courses listed in the credit restrictions of Statistics 2550

11 . Memorial University of Newfoundland Undergraduate Calendar Change Proposal Form Appendix Page

1. CONSULTATIONS SOUGHT

As per standard Appendix Page. See **Part V: Consultations and Correspondence** for master list of consultees and text of their responses.

2. RESPONSES RELEVANT TO THIS SECTION

None as of 05 November 2024

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

Part IV: Deleted Courses

1. Deletion of Inactive PSYC Courses
2. Deletion of Active PSYC Course
3. Deletion of Non-Restricted PSYC Courses Being Combined with Restricted Courses
4. Deletion of Now Redundant PSYC Courses
5. Appendix Page

University of Newfoundland
Undergraduate Calendar Change Proposal Form
Cover Page

LIST OF CHANGES

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

- ☐ New course(s):
- **X 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

1.Deletion of Inactive PSYC Courses

COURSE NUMBERS AND TITLES

i. PSYC 2030 Adult Development
ii. PSYC 2120 Interpersonal and Group Processes
iii. PSYC 2240 Survey of Learning
iv. PSYC 2440 Human Memory and Cognition
v. PSYC 2540 Psychology of Gender
vi. PSYC 2560 Intelligence
vii. PSYC 2610 Personality
viii. PSYC 2810 Brain and Behaviour
ix. PSYC 3430 The Psychology of Thinking
x. PSYC 3501 Industrial Psychology
xi. PSYC 3577 Program Evaluation
xii. PSYC 3620 Personality Theory and Research
xiii. PSYC 4160 Psychology and the Law
xiv. PSYC 4260 Learning Processes and Drug Effects
xv. PSYC 4461 Psycholinguistics
xvi. PSYC 4660 Developmental Psychopathology
xvii. PSYC 4662 Clinical Psychology and Theories of Psychotherapy
xviii. PSYC 4671 Research Experience in Personality
xix. Appendix

REVISED COURSE NUMBERS AND TITLES
N/A

ABBREVIATED COURSE TITLES
N/A

RATIONALE
As part of our larger set of program revisions, these courses are being deleted. They have not been offered in many years, are currently inactive in the calendar, and are not consistent with our proposed program revisions.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

CALENDAR CHANGES

i. ~~PSYC 2030 Adult Development~~
~~- inactive course.~~

ii. ~~PSYC 2120 Interpersonal and Group Processes~~
~~- inactive course.~~

iii. ~~PSYC 2240 Survey of Learning~~
~~- inactive course.~~

iv. ~~PSYC 2440 Human Memory and Cognition~~
~~- inactive course.~~

v. ~~PSYC 2540 Psychology of Gender~~
~~- inactive course.~~

vi. ~~PSYC 2560 Intelligence~~
~~- inactive course.~~

vii. ~~PSYC 2610 Personality~~
~~- inactive course.~~

viii. ~~PSYC 2810 Brain and Behaviour~~
~~- inactive course.~~

ix. ~~PSYC 3430 The Psychology of Thinking~~
~~- inactive course.~~

x. ~~PSYC 3501 Industrial Psychology~~
~~- inactive course.~~

xi. ~~PSYC 3577 Program Evaluation~~
~~- inactive course.~~

xii. ~~PSYC 3620 Personality Theory and Research~~
~~- inactive course.~~

xiii. ~~PSYC 4160 Psychology and the Law~~
~~- inactive course.~~

xiv. ~~PSYC 4260 Learning Processes and Drug Effects~~
~~- inactive course.~~

xv. ~~PSYC 4461 Psycholinguistics~~

~~- inactive course.~~

xvi. ~~PSYC 4660 Developmental Psychopathology~~
~~- inactive course.~~

xvii. ~~PSYC 4662 Clinical Psychology and Theories of Psychotherapy~~
~~- inactive course.~~

xviii. ~~PSYC 4671 Research Experience in Personality~~
~~- inactive course.~~

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

2.Deletion of Active PSYC Course

COURSE NUMBER AND TITLE

i. PSYC 4661 Family Psychology

REVISED COURSE NUMBERS AND TITLES

N/A

ABBREVIATED COURSE TITLES

N/A

RATIONALE

As part of our larger set of program revisions, this course is being deleted. It has not been offered in many years and is not consistent with our proposed program revisions.

ANTICIPATED EFFECTIVE DATE

2025-2026 University Calendar

CALENDAR CHANGES

1. ~~PSYC 4661 Family Psychology~~
~~is a study of the reciprocal relationship between family processes and abnormal behaviour. The course will focus on the role of family dynamics in the etiology of abnormal behaviour, the impact of psychological disorders on family functioning and the application of family therapy to create therapeutic change.~~
~~PR: PSYC 3650, or all of 2520 or 2521, 2930 or the former 2570, 2911, and 3640, and admission to a Major in Psychology or Behavioural Neuroscience~~

CALENDAR ENTRY AFTER CHANGES

N/A

SECONDARY CALENDAR CHANGES

N/A

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

3.Deletion of Non-Restricted PSYC Courses Being Combined with Restricted Courses

COURSE NUMBERS AND TITLES

i. PSYC 2100 Attitudes and Social Cognition
ii. PSYC 3640 The Psychology of Abnormal Behaviour

REVISED COURSE NUMBERS AND TITLES
N/A

ABBREVIATED COURSE TITLES
N/A

RATIONALE
As part of our larger set of program revisions, these courses are being deleted. We have combined these course with a Majors-restricted course with similar content, and will be only offering the one combined, non-restricted course in the future.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

CALENDAR CHANGES

i. ~~PSYC 2100 Attitudes and Social Cognition~~
~~- inactive course.~~

ii. ~~PSYC 3640 The Psychology of Abnormal Behaviour~~
~~covers problems of definition, the history of beliefs about abnormal behaviour and the implication of a behavioural model for the understanding and control of behaviour problems.~~

~~CR: PSYC 3650, PSYC 3626~~
~~PR: any 2000 level course in Psychology~~
~~UL: cannot be used towards the Psychology major~~

CALENDAR ENTRIES AFTER CHANGES
N/A

SECONDARY CALENDAR CHANGES

1. School of Human Kinetics and Recreation; 6 Program Regulations - General and Honours Degrees; 6.1Bachelor of Human Kinetics and Recreation (Co-operative)); 6.1.1 Optional Pathways

   Psychology ~~3640~~ 2621

2. School of Human Kinetics and Recreation; 6 Program Regulations - General and Honours Degrees; 6.4 Bachelor of Recreation

   Psychology ~~3640~~ 2621

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

4.Deletion of Now Redundant PSYC Courses

COURSE NUMBER AND TITLE
PSYC 4870 Research Experience in Behavioural Neuroscience

REVISED COURSE NUMBER AND TITLE
N/A

ABBREVIATED COURSE TITLE
N/A

RATIONALE
Last year we removed this course from the program requirements for the Behavioural Neuroscience Major and Honours. We have added additional course requirements with sufficient laboratory experience that the course became redundant, and as there are no plans to offer it again, it will be deleted.

ANTICIPATED EFFECTIVE DATE
2025-2026 University Calendar

CALENDAR CHANGES

1. ~~PSYC 4870 Research Experience in Behavioural Neuroscience~~
~~allows students to gain research experience in selected areas of neuroscience.~~
~~OR: Animal Care Online Training and Animal Handling Training must be completed prior to start of this course~~
~~PR: Science 1807 and Science 1808; PSYC 3820 or the former 3801, and admission to a Major in Psychology or Behavioural Neuroscience~~

CALENDAR ENTRY AFTER CHANGES
N/A
SECONDARY CALENDAR CHANGES
N/A

LIBRARY REPORT
N/A
RESOURCE IMPLICATIONS
None
ADDITIONAL INFORMATION REQUIRED FOR NEW COURSE PROPOSALS
N/A

5.Undergraduate Calendar Change Proposal Form Appendix Page

1. CONSULTATIONS SOUGHT

As per standard Appendix Page. See **Part V: Consultations and Correspondence** for master list of consultees and text of their responses.

2. RESPONSES RELEVANT TO THIS SECTION

None as of 05 November 2024

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

Part V: Consultations and Correspondence

1. Consultations Sought
2. Request for Feedback
3. Responses

1.Consultations Sought

Academic Unit	Response Received
Humanities and Social Sciences	08 November 2024
Business Administration	01 November 2024 See 37-38 for section relevant comment
Education	
Engineering and Applied Science	16 October 2024
Human Kinetics and Recreation	
Marine Institute	
Medicine	
Music	
Nursing	
Pharmacy	07 October 2024
Science	
Biochemistry	
Biology	
Computer Science	
Earth Sciences	
Mathematics and Statistics	
Ocean Sciences	
Office of the Dean	
Physics and Physical Oceanography	
Psychology	
Social Work	07 October 2024
Library	
Grenfell - Arts and Social Science	07 October 2024

Grenfell - Science and the Environment	
Grenfell - Fine Arts	

2.Request for Feedback

From: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Sent: October 4, 2024 3:45 PM
To: Faculty of Humanities and Social Sciences <hss@mun.ca>; Dean - Faculty of Business Administration <deanfba@mun.ca>; Dean of Education <educdean@mun.ca>; engrconsult@mun.ca; HKR Dean <hkrdean@mun.ca>; Dean of Medicine : McKeen, Dr. Dolores <deanofmedicine@mun.ca>; Karen Bulmer <kbulmer@mun.ca>; DeanNurse <DeanNurse@mun.ca>; pharminfo@mun.ca; Dean of Science <deansci@mun.ca>; adeanugradswk <adeanugradswk@mun.ca>; Libraries Hiring Panel <univlib@mun.ca>; GC School of Arts and Social Science <gcsass@mun.ca>; GC School of Science and the Environment <gcsse@mun.ca>; GC School of Fine Arts <gcsofa@mun.ca>; miugconsultations@mi.mun.ca; deanofsass <deanofsass@mun.ca>
Cc: psyugradadvice@mun.ca; Head Psychology <psychhead@mun.ca>; Blandford, Stephanie Nicole <snblandford@mun.ca>
Subject: Department of Psychology Calendar Change Proposals for Consultation

Hello,

The Department of Psychology has approved several proposals for changes to the Undergraduate University Calendar Sections 11.12 and 13.12 pertaining to the Program Regulations and Courses managed by the Department. We are now requesting consultation within the broader University Community. All proposed changes have been compiled into one large document.

These proposals represent substantial changes to the Psychology program that will strengthen it. This will be accomplished by redressing challenges faced by students that can delay progress through their degrees, increasing the diversity of courses being offered by the Department, improving access to specific area knowledge for both Majors and non-Majors alike, and by making more efficient use of the Department's teaching resources. Implementing this suite of changes involves revising the Calendar regulations for degrees in Psychology and Behavioural Neuroscience, the creation of new course offerings, the amending and renumbering of current course offerings, and the deletion of inactive or now redundant course offerings.

At present, the program includes some bottlenecks in requirements that can lead to significant delays in degree completion for students who experience issues with one or more courses at the 2000 level. Additionally, Majors are not exposed to most area-specific content until the 3000 level, and some interesting course offerings have usage limitations for Majors, so that they only can be taken as electives. Lastly, multiple versions of similar content are offered, including one course for Majors and one for non-Majors, a redundancy that does not make the most efficient use of the Department's teaching resources.

The revised program removes redundancies in instruction by eliminating the non-Majors version of several courses, and offering instead one combined course, which will also allow Majors to access more

specific area content beginning at the 2000 level. Usage limitations on some course offerings have been removed, allowing them to now count towards students' Majors. New course offerings have been created for Majors at the 3000 level that will be offered on a rotating basis, and that improve the diversity of offerings in all areas of Psychology. The revised program also opens up additional courses at the 2000 level to broaden the offerings for Psychology Minors, including a few specific courses that are requirements for other programs (e.g. some Linguistics students require a course in Human Cognition for eligibility for graduate programs, but we have not offered such a course for non-Majors in well over a decade).

Overall, these changes will increase the Department of Psychology's capacity to continue providing its students with excellent educational opportunities.

Simultaneously, we are also proposing an unrelated amendment to Regulations surrounding submission of honours theses to the library. This proposal was made in consultation with the library, and would standardize wording between the BA (Honours) and BSc (Honours) regulations about thesis submission procedures.

The Department is asking that responses be forwarded by email to psychdeputyhead@mun.ca no later than November 8, 2024. If you have any questions regarding the proposals included, please get in touch with Kathleen Hourihan at psychdeputyhead@mun.ca.

Best,
-Kathleen Hourihan

Kathleen L. Hourihan, PhD (she/her)
Associate Professor
Department of Psychology
Memorial University of Newfoundland
(709) 864-8771

3.Responses

Faculty of Business Administration

From: Furey, Mary A <mfurey@mun.ca>
Sent: November 1, 2024 3:41 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Subject: FW: Department of Psychology Calendar Change Proposals for Consultation

Hello Kathleen,
Please see feedback from Michelle Miskell, Manager of Academic Programs, on this proposal in the attachment.

There are no other comments from CUGS.

Thank you

Mary

My working hours may not be your working hours. Please do not feel obligated to reply outside of your normal work schedule

Mary Furey | Associate Dean, Undergraduate Programs and Accreditation

Faculty of Business Administration
Memorial University of Newfoundland
St. John's, Newfoundland and Labrador
T 709 864 2431

From: Miskell, Michelle <mmiskell@mun.ca>
Sent: October 7, 2024 6:39 PM
To: busicugs <busicugs@mun.ca>; Furey, Mary A <mfurey@mun.ca>; Coady, Peggy <pacoady@mun.ca>; jcumby@mun.ca; skomiak@mun.ca; Lorne Sulsky <lsulsky@mun.ca>; Shannahan, Kirby <kirbys@mun.ca>; Pauline A. Downer <pdowner@mun.ca>; Registrar, Faculty of Business Administration <business_registrar@mun.ca>; Skanes, Heather <hskanes@mun.ca>; rwnoseworthy@mun.ca; kestaubitzer@mun.ca; alexandradh@mun.ca
Subject: RE: Consultation request. Department of Psychology Calendar Change Proposals

Good day Committee,

I have reservations about one change in this extensive proposal, described on pages 33/34 of this document.

The author notes that regulations about submission of the honours dissertation in the Faculty of HSS are not in line with the regulations about submission of the honours dissertation in the Faculty of Science. This is an issue for the Dept of Psych as students can complete a major in psyc as either an Arts degree or a Science degree. So I can see how they want to have these regulations match.

However, they are suggesting eliminating the regulation that students must submit their dissertation no later than three weeks before the end of the final semester of the student's program. In practice, this falls on the last day of the week in the second to last week of classes. In my many years with Earth Sciences, this is the regulation that we leaned on to ensure that both students (and supervisors!) completed the thesis before the last day of classes, it was examined before the exam period began, and the student then had two weeks to make corrections and submit the final thesis on the last day of the exam period. With this practice in place, a grade would not be submitted for the student until the final, corrected version was in hand, ready to be submitted to the Center for Newfoundland Studies at the QEII Library. Almost twenty years ago we leaned on this regulation to cut down on students/supervisors going way over whatever arbitrary deadline was given, causing issues with graduation, and ensuring that students didn't end up writing masters theses. When this regulation is put into practice, it ensures that a final grade for a thesis is submitted within the deadlines prescribed by the Registrar's Office for final grades, the supervisor/department and library all have a completed copy of the thesis before the student graduates, and the volume of work that is completed is suitable for the undergraduate level. When appropriate, an INC grade can be used for students who have extenuating circumstances.
Instead of removing this regulation from the Faculty of Science, it makes more sense to me to add it to the Faculty of HSS regulations.

Furthermore, it makes sense to consult with the CNS at the QEII regarding the other part of the Faculty of Science regulation concerning when the thesis must be submitted to the library. I note that the author is proposing the part of the regulations that states it should be submitted "before the degree is conferred" should be struck. I also disagree with this or the same reasons as above. However, I have a feeling that the CNS does not put this into practice. So if they aren't actually checking this, then what's the point of having the reg in the calendar. It would be interesting to know their position on this.

Thank you for the opportunity to consider this proposal.

Best wishes,
Michelle

Michelle Miskell (she/her) | Manager of Academic Programs
Faculty of Business Administration
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3X5
T 709 864 2369 | Room BN 1015

Engineering and Applied Science

From: Engineering Consult <engrconsult@mun.ca>
Sent: October 16, 2024 3:26 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Cc: Ahmed, Salim <sahmed@mun.ca>; Jonathan Anderson <jonathan.anderson@mun.ca>; Garzon, Marissella <mgarzon@mun.ca>; Edmunds, Jayde <edmundsj@mun.ca>
Subject: Re: Department of Psychology Calendar Change Proposals for Consultation

Thank you for the opportunity to comment on the proposed Calendar changes to the psychology program.

At its meeting on Oct. 16, the Committee on Undergraduate Studies for the Faculty of Engineering and Applied Science found no impact on our programs. We are happy to support these proposed Calendar changes.

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

Pharmacy

From: McGrath, Gerona <geronam@mun.ca>
Sent: October 7, 2024 12:48 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Subject: calendar changes 2024

Thank you for the opportunity to review the proposed calendar changes for the Department of Psychology. There is no impact on the School of harmacy.

Gerona

_____
Gerona McGrath MBA, M.Ed.
Manager of Academic Programs

School of Pharmacy

Memorial University of Newfoundland
3435 Health Sciences Centre
St. John's, NL A1B 3V6 Canada

Social Work

From: adeanugradswk <adeanugradswk@mun.ca>
Sent: October 7, 2024 1:21 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Subject: RE: Department of Psychology Calendar Change Proposals for Consultation

Hello Kathleen,

Thank you for inviting comments on your proposed changes to the course offerings in the Department of Psychology. Based on the summary rationale provided in your email, I agree that these changes will bring efficiency into the teaching function of the Department. Therefore, on behalf of the School of Social Work Undergraduate Studies committee, I support the proposed changes. No additional comment is expected.

Thank you.
Paul

Paul Alhassan Issahaku (PhD)
Associate Professor, Acting Associate Dean of Undergraduate Programs
School of Social Work
Memorial University of Newfoundland
St. John's, Canada
Tel. 7098648688. Email: pissahaku@mun.ca

Grenfell - Social/Cultural Studies Program

From: Robinson, Angela <b57mar@mun.ca>
Sent: October 16, 2024 1:19 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Subject: RE: Department of Psychology Calendar Change Proposals for Consultation

Good afternoon
I have reviewed the proposed changes to the Psychology Program and support your endeavor to strengthen existing Program offerings for Psychology. I see no conflict or encumbrances that these proposed changes may have on the Social/Cultural Studies

Program at Grenfell Campus, and consider such changes of benefit to existing and future students.

Kind Regards,

Dr. Angela Robinson (she/her)
Associate Professor/Chair, Social-Cultural Studies
Grenfell Campus, Memorial University
PO Box 2000,
Corner Brook,
NL, A2H 5G4
Phone: (709) 637-6291: Fax (709) 639-8125

Faculty of Humanities and Social Science

From: assocdeancphss <assocdeancphss@mun.ca>
Sent: Friday, November 8, 2024 7:19 PM
To: Deputy Head, Department of Psychology <psychdeputyhead@mun.ca>
Cc: Simonson, Kathryn <kathryns@mun.ca>
Subject: FW: Department of Psychology Calendar Change Proposals for Consultation

Dear Colleagues,

I regret to report that technical problems with outlook email delayed the delivery of this proposal to me for review until October 28. We have taken what steps we can to help avoid such delays in the future.

Clearly, a tremendous amount of work has gone into the present proposal. HSS does have concerns:

1. On behalf of the Faculty of Humanities and Social Sciences, I must object to the changes proposed to the HSS regulations under 6.4.3. Either the department of Psychology or the Library, or both, should have brought the proposed changes to the HSS Dean's office when Psychology undertook preliminary consultations.

   HSS will undertake its own review of its Honours regulations beginning as soon as possible and we will take into account the Library's recommendations and the benefits of consistency across various units' honours regulations. HSS has 15 department, most of which offer honours programs. I cannot approve changes to general regulations under these circumstances.

I must, with all due respect for the work of Psychology here, insist that the proposed changes to HSS sections of the Calendar be removed from the proposal.

2. I am also concerned about the impact of the proposed changes to existing courses on in-program students and the various academic advisors and Registrar's Office staff who will have to help these students complete their degrees. There appears to be no advice for in-program students on how to navigate, for example, the shifting of 2000 level courses to 3000s and 3000s to 4000 level.

3. I do not know if the size of the proposal caused delays in delivery by email. Regardless, I have been operating on the assumption that Registrar's and Senate and its committees, preferred separate proposals, at least for courses, program, and regulation changes. I would ask the Senate Committee on Undergraduate Studies to clarify preferred procedures.

Thank you for the opportunity to review.

Patricia Dold

Patricia Dold (she/her)

Associate Professor, Religious Studies

Associate Dean, Curriculum and Programs

Faculty of Humanities and Social Sciences

St. John's Campus, Memorial University

MEMORIAL UNIVERSITY

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

September 9, 2024

TO: Registrar's Office
School of Graduate Studies

FROM: Secretary, Faculty of Science Faculty Council

SUBJECT: Special Topics Courses – Faculty of Science

The special topics course listed below have been approved by the Faculty of Science Faculty Council Graduate Studies Committee:

1. BIOC 6002 Introduction to Applied Computational Chemistry

The Request for Approval of a Graduate Course forms are attached. If you require more information please let me know.

Gina Jackson
Secretary, Faculty of Science Faculty Council

cc: A. Fiech, Chair, Graduate Studies Committee
S. Christian, Department of Biochemistry
K. Wilson, Department of Biochemistry

MEMORIAL UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Request for Approval of a Graduate Course

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

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

Course No.: **BIOC 6002**

Course Title: **Introduction to Applied Computational Chemistry**

I. To be completed for all requests:

A. Course Type:

☒ Lecture course
☐ Laboratory course
☐ Directed readings
☐ Lecture course with laboratory
☐ Undergraduate course[1]
☐ Other (please specify)

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

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

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

E. Credit hours for this course: **3**

F. Course description (please attach course outline and reading list):

This is a course offered by The pan-Canadian Computational Chemistry (PC3) Program. It will be taught by 3 instructors with the program and offered remotely to students from across Canada.

G. Method of evaluation:

	Percentage	
	Written	**Oral**
Class tests	0	0
Assignments	100	0
Other (specify):	0	0
Final examination:	0	0
Total	100	0

[1] Must specify the additional work at the graduate level

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

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

		Instructor's initials
1.	duplication of thesis work	KW
2.	double credit	KW
3.	work that is a faculty research product	KW
4.	overlap with existing courses	KW

Recommended for offering in the (Fall) Winter Spring 20 **24**

Length of session if less than a semester:

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

Course instructor — Date: August 22, 2024

Approval of the head of the academic unit — Date: Aug 30, 2024

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

Secretary, Faculty/School/Council — Date: Sept. 9, 2024

The pan-Canadian Computational Chemistry (PC3) Program

Contents

1. Project Description

1.1. Rationale

Computational chemistry constitutes a collection of computer modeling methods that are used to predict the physical properties of novel chemical systems and to help explain experimental observations. The methods are powerful because they provide a means to gain atom-level insights into chemical processes in everything from microbes to interstellar gas clouds. As such, computational chemistry tools are used to understand chemical systems, quantum effects, biological systems, and the behaviour of materials. Therefore, computational chemistry techniques are used in disciplines beyond chemistry, such as physics and materials engineering.

Very few chemistry programs in Canada have courses (much less programs of instruction) in computational chemistry. One possible reason for this shortcoming in undergraduate and/or graduate instruction is that most chemistry departments have only one (if any) computational chemistry researcher on faculty, a situation that can be understood on the basis that chemistry is an experimental science. And yet, the paper describing one of the most popular computational tools for chemistry modeling has been cited more than 80,000 times, and it is more common than not for non-experts to use this tool as a complement to experimental work that is published in impactful journals. Taken together, the foregoing clearly indicates that computational chemistry is an important research tool in chemistry, but related instruction is nearly absent in undergraduate and graduate programming.

We intend to address an important gap in undergraduate and graduate science and engineering education in Canada by developing an MSc-level program of instruction in **applied computational chemistry** that will be made available across Canada. Furthermore, this effort will serve as a model for the development of national programs of instruction in other disciplines.

1.2. Background

The initial vision of the PC3 Program was to develop a program of instruction for senior undergraduate students. Computational chemistry researchers from across Canada were invited to participate in initial discussions about the high-level vision for the Program, and to solicit ideas on how to most effectively deliver it. Discussion with the project participants led to the conclusion that it would be more straightforward to develop a Master's level program of instruction in applied computational chemistry. The group agreed to the following general features of the Program:

1. The central program outcome is to provide students with the ability to appropriately apply computational chemistry simulation methods.
2. Lectures associated with the instruction will be delivered over Zoom.

3. Program-related instruction will align with the areas of expertise of the researchers involved in the project.
4. All exercises related to the instruction will involve either open-source software or access to software through Compute Canada with no cost to the students.
5. Courses will be co-taught in order to give students exposure to different researchers in the field.
6. Students will be provided access to Compute Canada (or similar) computing resources for Program-related assignments/exercises.
7. All materials associated with the Project will be developed under Creative Commons licensing.
8. The developed materials will be accessible free of charge to all participating students across Canada.

The courses associated with the Program will be developed by teams of two or three participants but reviewed by all participants to ensure appropriate laddering of skills and concepts across the Program.

1.3. Perceived Benefits of the Project

The main idea behind the PC3 project is to create high-level, coherent, and consistent teaching and learning materials at the MSc level in the field of applied computational chemistry. Although computational chemistry methods are widely used in different fields of general sciences, there is a lack of high-quality instruction at the post-secondary level in Canadian universities. The dearth of instruction is likely a consequence of the small number of computational chemists in each institution. By taking a pan-Canadian approach, we can bypass the typical financial constraints associated with offering a course in a specialized area while also enhancing the student experience by exposing students to leaders in the field. Students participating in the program will have high-quality training, which will ultimately increase the quality of their research.

The project is envisioned to have significant impacts on research activities in computational chemistry. The perceived benefits of the Program can be summarized as follows:

1. The development of a robust and sustainable computational chemistry graduate-level training program accessible to students across Canada, and ultimately to students in under-developed countries globally. The training materials for the program will be available to students at zero cost.

2. Exposure of students to Canadian researchers engaged in computational chemistry-based research, with the goal of improving student outcomes, increasing diversity in the field by

ensuring diversity of instructors, and increasing graduate student enrolments in computational chemistry at Canadian Institutions.

3. Standardization of student training in chemistry and in other disciplines while elevating the level of instruction.
4. Expose students to a wide range of modeling tools.
5. Broaden student experiences beyond the single-instructor/single-institution model.
6. Increased collaboration amongst computational chemistry scientists nationally, in particular those who participate in the Program.
7. Reduction of instructional expense associated with computational chemistry at universities across Canada.
8. Address the UN Sustainability Goals 4 and 10, *Quality Education* and *Reduced Inequalities*.

2. Approach

2.1. Project Plan

The first phase of the project started by assembling 11 faculty experts in the field of computational chemistry from 11 Canadian universities by issuing invitations (see Appendix B, section 4.2, Phase 1). The general approach to the PC_3 project was arrived at by consensus. The participants decided that the program should involve an introductory module and, initially, four advanced modules (see Appendix C, section 4.3.1). The introductory module provides the background students with limited experience with computational chemistry need in order to develop facility with quantum mechanical simulations. The advanced modules cover a range of specialized modeling techniques appropriate for different kinds of systems (e.g. solid state systems, enzymes, molecular systems). Teams composed of two or three participants were assembled for each module and charged with developing module outlines that include pre- and post-module readings, learning outcomes, lecture topics and exercises. The duration of the introductory module is one semester, and the advanced modules are half semester. At UBC, where the course requirements for the MSc in Chemistry is two courses, it would be expected that a new

MSc student whose project centers on computational chemistry will complete the introductory module and at least two advanced modules.

The second phase of the project involves collecting and reviewing the developed module materials in order to ensure a common look-and-feel, that the modules do not contain repetitive material, and that the learning outcomes in the introductory module and the advanced modules ladder appropriately. The module material will then be redistributed to all participants for feedback. The completed course material will then be transferred to a course dashboard (Canvas is accessible to those outside of UBC, and so we tentatively plan to use that as the course management system).

Progress to date has been slow, largely due to the pandemic. So far, participation of 9 chemistry professors has been confirmed (see Appendix A, section 4.1, for a complete list of the developers). We are still in the process of developing module outlines and obtaining commitments from some of those who originally agreed to participate in the Project. Appendix C presents the PC_3 model and the sub-groups developing each module. Appendix D contains the Introductory module outline developed for this project. Appendix E presents, in more detail, the progress made so far in each of the modules. The target launch for the Introductory and Advanced modules is September 2023 (we successfully piloted the program in fall 2023).

2.2. Material Development

There is very little open-access material that is suitable for this project. One important aspect of the proposed courses is that it is taught by different experts in the field of computational chemistry, each of whom will teach a portion of a module in their area of expertise. Many of the project participants have developed course materials in these areas, and so it was expected that involvement in the PC_3 Project would not represent a significant workload increase for the participants.

2.3. Sustainability Plan

All the materials developed for the Program will be done so under Creative Commons licensing. Instruction will occur over Zoom and be recorded for future use (if need be). All software used in the Program is either open-source or accessible through Compute Canada with no cost to the students

The modular aspects of the course make it straightforward to swap-out modules as the field of computational chemistry develops. We envision moving modules between computational chemistry courses of different levels and enabling the use of modules in other chemistry courses (see section 3).

3. Program Delivery and Student Management

The PC_3 Program modules, in principle, will require curriculum approval at each of the participating institutions. This will be pursued in the longer term. Initially, the modules will be offered under general graduate course codes that already exist in many Chemistry programs. For example, course currently in the UBC Okanagan calendar that will fit the PC_3 Program include CHEM 501 - Applications of Quantum Mechanics in Chemistry and CHEM 507 - Topics in Physical and Theoretical Chemistry (we used this code in Fall 2023 for the PC_3 Intro course). The Western Deans Agreement could also be used to enable access to the courses.

Students will be managed by, and be the responsibility of, Project participants at their own institutions. For example, a student from Dalhousie that is taking a module delivered by an instructor based at UBC, will be the responsibility of the Project participant at Dalhousie, who will enter the student's grade into the Dalhousie student system, interact with the local dean of Graduate Studies if there are problems, etc.

Module lectures will be delivered over Zoom by the responsible instructional team and recorded for possible future use. Course assignments will use Compute Canada (or similar resources) and open-source software or software that is accessible through Compute Canada. Assignments will be marked by the responsible instructional team.

4. Appendices

4.1. Appendix A

The current PC3 faculty members in the alphabetical order by name and their areas of research expertise:

1- Dr. Alex Brown (University of Alberta)

- Theoretical/computational studies of molecular photochemistry and laser control
- Computational design of small-molecule biofluorophores
- Photochemistry and photophysics of fluorescent proteins and their chromophores
- Understanding of novel bonding and structure in inorganic materials
- Molecular quantum dynamics (using MCTDH)
- Optimal control theory for laser control

2- Dr. Gino DiLabio (University of British Columbia)

- Noncovalent interactions in chemistry and physics
- Methods development
- Radicals in chemistry and physics
- Physical organic chemistry
- Reaction mechanisms and thermochemistry
- Polymer simulations

3- Dr. James Gauld (University of Windsor)

- The chemistry of cofactors/enzyme chemistry
- Modeling enzyme active sites
- DNA multiplexes

4- Dr. Farnaz Heidar-Zadeh (Queen's University)

- Machine learning algorithms in computational chemistry
- Methods development

5- Dr. Joshua Hollett (University of Winnipeg)

- Development of new, more efficient electronic structure methods (Natural Orbital Functional Theory)
- Computational Virology (understanding the complex interactions between viruses and the immune system)

6- Dr. Erin Johnson (Dalhousie University)

- Theoretical/computational/quantum chemistry

- Density functional theory
- Intermolecular interactions
- Physical chemistry
- Materials

7- Dr. Paul Johnson (Université Laval)

- Theoretical chemistry
- Computational chemistry
- Strong electron correlation
- Model wave functions
- Exactly solved models

8- Dr. Alberto Otero de la Roza (University of Oviedo)

- Noncovalent interactions in chemistry and physics
- Methods development
- Reaction mechanisms and thermochemistry
- Materials

9- Dr. Christopher Rowley (Craleton University)

- Intermolecular interactions
- Covalent Modifier Drugs
- Multiscale Simulations
- Biological Transport of Drugs and Toxins

10- Dr. Georg Schreckenbach (University of Manitoba)

- Theoretical Actinide Molecular Science
- Materials
- Solar Energy
- Method Development and Evaluation
- Environmental Chemistry in Silico

11- Dr. Robert Szilagyi (University of British Columbia)

- Fe-S clusters, nanoparticles, and mineral surfaces materials
- Atomic design of carbon materials
- Prebiotic chemistry method development and evaluation
- Molecular mechanism of catalytic processes environmental chemistry in Silico
- MOLECULAR MECHANISM OF CATALYTIC PROCESSES Environmental Chemistry in Silico

12- Dr. Stacey Wetmore (University of Lethbridge)

- Theoretical/computational chemistry
- DNA and RNA Chemistry

13- Dr. Tom Woo (University of Ottawa)

- Computer simulations and modelling of chemical processes at the atomic and molecular levels
- Quantum simulation modelling
- Developing simulation methods to study/solve technological problems (specially catalytic systems for energy storage and conversion, and catalysts used in the synthesis of compounds and pharmaceuticals)

4.2. Appendix B

Table below shows the PC3 project timeline:

Phase	Main Tasks	Dates
1. Assemble 11 collaborators from Canadian universities		Completed
2. Virtual meetings to discuss the details of the project and the first steps before developing course modules	1. Conducting the first survey (research, preparation, implementation)	Completed
	2. Collaborator meeting (presenting the results of the survey, develop group workplan.)	Completed
3. Module development	1. Collecting contributions from collaborators	Completed
	2. Revised materials to common look and feel; work with individual contributors to ensure appropriate laddering of materials and learning outcomes	Completed
	3. Test computational assignments on common software and hardware platform.	Completed
	4. Distribute course bundle to collaborators for review.	Completed
	5. Revised course bundle materials with feedback from collaborators	Completed
4. Video Lecture development	1. Each contributor will develop a 1-2 hour lecture. These will be collected and reviewed for harmony with the course learning outcomes and the computational exercises.	Completed
	2. Collect feedback from the collaborators on videos and issue requests for changes.	Completed
	3. Collect revised videos and review.	Completed
	4. Determine if resources are available or must be provided.	Completed
	5. Having meetings with each one of the participants to discuss the progress in developing the materials. Forming committees if need be.	Completed

5. Final course preparations	Transfer the materials to the course shells and test	Completed
6. Paper preparation	1. Write a first draft of a paper describing the project.	In preparation
	2. Collect feedback from contributors and revise	-
7. Launch the course at 11 universities.		Fall 2023 at 7 universities
8. Collect student and instructor feedback	1. Design survey	In preparation
	2. Run survey	-
9. Finalize the paper	1. Incorporate survey results into draft	Yet to be discussed
	2. Submit draft	-
10. Develop and implement dissemination plan to address UNSDGs 4 and 10		Not started yet

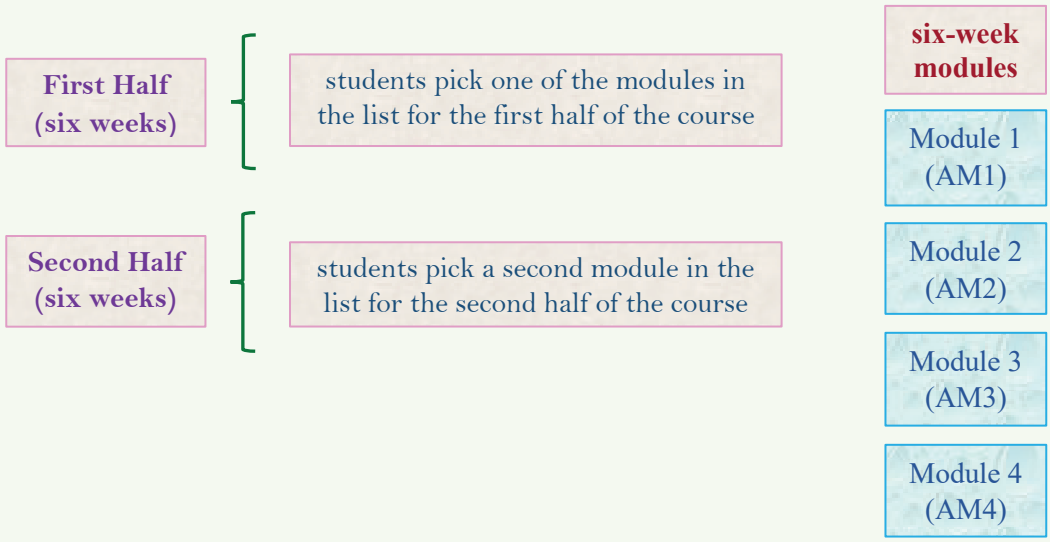
4.3. Appendix C

4.3.1. The PC3 Model

Here is the PC_3 model for offered courses in either one semester or two consecutive semesters. In Fall 2023 we offered both in one semester.

1- The Intro Course (full semester): Introductory Topics in Computational Chemistry

2- The Advanced Course (full semester)



4.3.2. The Intro and Advanced Course Modules

Here is the list of the Advanced course modules and the PC3 instructors. In Fall 2023 we offered only two of these modules, AM3 and AM1.

Intro Module:	Introduction to Computational Chemistry (Statistical Mechanics and Molecular Simulations, Wave Function Based Methods; HF and post-HF, and Density Functional Theory; Approximate and "ab initio" methods) Dr. Richard Bowles, Dr. Joshua Hollett, and Dr. Robert Szilagyi
Module 1 (AM1):	Reactions: Thermochemistry, Mechanisms, and Kinetics Dr. Gino DiLabio and Dr. Alberto Otero de la Roza
Module 2 (AM2):	Python Scripting in Computational Chemistry + Machine Learning in Computational Chemistry Dr. Farnaz Haidar-Zadeh, Dr. Paul Johnson, and Dr. Christopher Rowley
Module 3 (AM3):	DFT in Molecular Systems + Solid-State Modelling + Relativistic Effects in Molecules and Solids Dr. Erin Johnson, Dr. Tom Woo, and Dr. Georg Schreckenbach
Module 4 (AM4):	Biomolecular Modelling: QM/MM and MD Dr. James Gauld, Dr. Stacey Wetmore

4.4. Appendix D

This section outlines the proposed topic areas, activities, and learning objectives/outcomes of the **Introductory Module** of the Applied Computational Chemistry MSc program. This draft is meant to generate discussion amongst the PC_3 participants, including comments, and suggested additions and/or deletions.

Instructors: in alphabetical order: Dr. Richard Bowles, Dr. Joshua Hollett, and Dr. Robert Szilagyi.

Module length: 12 weeks (full semester).

Prerequisite Knowledge: Students entering the PC_3 program should have an undergraduate level understanding of:

Portion I: Dr. Richard Bowles

Portion II: Dr. Joshua Hollett

Linear Algebra, Calculus of multiple variables, Basic quantum chemistry

Portion III: Dr. Robert Szilagyi

Intro level quantum chemistry, electronic structure and bonding theories (some level of physical organic or inorganic chemistry)

Pre-work: This section outlines work that student should do prior to joining the course. This is self-directed learning that prepares them for the course and may constitute readings and exercises to be completed to support their learning.

1. Have students install applications that allow for interactions with a Linux/Unix environment (e.g. Putty, MobaXterm, WinSCP).
2. Develop facility with working in a Linux/Unix environment (e.g. manipulating files and directories).
3. Learn how to use text editors in a Linux/Unix environment (e.g. editing, saving files).
4. Learn how to work with job schedulers (e.g. Slurm)
5. (To be developed further) Building molecules of various sizes and complexities (e.g. using a GUI builder and downloading coordinates from a database). WebMO, VMD, ChemCraft, Avogadro.

Topics: These are suggested lecture topics that support the learning objectives listed at the end of this document. Topics may span multiple lectures. Since the Intro module is for *applied computational chemistry*, instructors should give some thought on how the concepts listed below can be illustrated/reinforced with calculations.

Portion I: Dr. Richard Bowles

1 - This part of the module focuses on molecular mechanics, including potential energy functions and geometry optimization. It also introduces statistical mechanics with applications to calculations of the molecular partition function, thermodynamics, as well as molecular dynamic and Monte Carlo simulation methods.

2 -

Introduction

- ✓ Schrodinger equation (brief introduction to motivate molecular mechanics)
- ✓ Potential Energy Surface

Molecular Mechanics potential Energy Function

- ✓ Different components of MM.
- ✓ Bonded interactions
  - Bond stretching
  - Angle bending
  - Torsional terms
  - Cross Terms
- ✓ Intermolecular potential energies
  - Van der Waals interactions
  - Buckingham potential
  - Lennard Jones potential
  - XDX and D3 Models
- ✓ Electrostatic interactions
  - Ewald sum methods
  - Other methods (reaction field, Lekner, Wolf)
- ✓ Empirical Force Fields
  - Parameterization strategies
  - Common Force Fields (MM2, AMBER, OPLS, CHARMM)
  - Machine Learning Force Fields
- ✓ Geometry Optimization
  - Optimization methods
  - Transition states
  - Conformational Search

Review of Statistical Mechanics

- ✓ From microscopic to macroscopic
- ✓ micro-states and phase space
- ✓ Postulates of statistical mechanics
- ✓ Ensembles
- ✓ Canonical partition function
- ✓ Boltzmann distribution
- ✓ Averages

Molecular Partition function

- ✓ Zero Point energy
- ✓ Non-interacting systems
  - Molecular electronic partition function
  - Molecular Translational partition function
  - Molecular Rotational partition function/Hindered rotation.
  - Molecular Vibrational partition function

Thermodynamics

- ✓ Energy
- ✓ Entropy
- ✓ Free energies

Including Temperature

- ✓ Molecular Dynamics
  - Basic integration schemes
  - Tricks of the trade
  - Dynamic quantities
- ✓ Monte Carlo
  - Basics of MC integration
  - Metropolis Sampling

Portion II: Dr. Joshua Hollett

1 - This part of the module is dedicated to the introduction of wave function based methods, and practical aspects such as basis sets. A focus will be placed on which methods are applicable in various scenarios (e.g. size, accuracy, desired property) and why they may not be suitable. Emphasis will also be placed on the computational cost/scaling of each method.

2-

Born-Oppenheimer Approximation

- ✓ Potential Energy Surface
- ✓ Total molecular Schrodinger Equation

Electronic Schrodinger Equation

Variation Theorem

Hartree-Fock Approximation

- ✓ Indistinguishability, antisymmetry and electron spin
- ✓ Slater determinants
- ✓ HF energy expression and one- and two-electron integrals
- ✓ HF equations
- ✓ SCF
- ✓ RHF, ROHF, UHF
- ✓ limitations of HF

Basis functions

- ✓ Atom-centred vs. plane wave basis functions
- ✓ GTO vs. STO
- ✓ Basis sets: Pople, Dunning, Ahlrichs, etc. (polarization, diffuse, core)
- ✓ Pseudopotentials (ECPs etc.)
- ✓ Completeness and extrapolation to the CBS limit
- ✓ BSSE

Post-HF

- ✓ Electron correlation
- ✓ Configuration Interaction
  - electron configurations (occupied and virtuals orbitals, active and frozen)
  - full and truncated CI
  - selected CI
  - size consistency and extensivity
- ✓ Coupled-Cluster
- ✓ Moller-Plesset Perturbation
- ✓ Multireference methods
  - CASSCF, RASSCF, MRCI and MRPT
  - DMRG

Portion III: Dr. Robert Szilagyi

1- The last section will focus on electron density-based description of energy, geometry, and properties. Both the density functional tight binding and "ab initio" density functional methods will be introduced. Firstly, the performance of various repulsive potentials will be compared and contrasted using examples selected by the students (if parameters are available). Secondly, the density functionals will be discussed using Perdew's Jacob's ladder concept and contrasted with the conceptually converging series of Pople's model chemistry.

2-

Introduction to density functional theory

- ✓ Philosophy, electron density vs. wave function,
- ✓ compare and contrast to HF theory and post-HF (connection to Josh's section)
- ✓ Early Approximations
- ✓ Kohn-Sham self-consistent field methodology

Approximate DFT = DFTB

- ✓ Tight binding theory, DFTB2 vs. DFTB3
- ✓ Performance - best and worst case scenarios
- ✓ Molecular dynamics using DFTB level of theory (connection to Richard's section)

"ab initio" DFT

- ✓ exchange-correlation functionals
- ✓ Jacob's ladder: LDA, GGA, metaGGA, hyperGGA, double hybrid, RPA
- ✓ Excited state calculations: orbital energies, ΔSCF, TD-DFT
- ✓ Performance - Ionic, covalent, magnetic bonding and interactions
- ✓ Broken-symmetry DFT calculations for multi-spin paramagnetic system

Presentations/research talks: Some of the PC3 members suggested that there could be interspersed in the Intro module a few short presentations outlining how their computational chemistry work solved a problem of interest. The presentation could also include pedagogical aspects by highlighting some of the topics covered in the Intro module.

Learning Outcomes: Upon completion of this module, student should be able to:

Portion I: Dr. Richard Bowles

- ✓ Describe the potential energy surface and its topology.
- ✓ Describe the bonded and non-bonded interactions used in MM
- ✓ Identify the best optimization methods for a given problem.
- ✓ Perform conformational search on a simple molecular system.
- ✓ Describe principles of statistical mechanics.
- ✓ Calculate probabilities, and thermodynamic properties of simple molecules using the molecular partition function.
- ✓ Describe the principle of molecular dynamics
- ✓ Describe the principles of Monte Carlo simulation

Portion II: Dr. Joshua Hollett

- ✓ describe the origin of the potential energy surface and its role in computational chemistry.
- ✓ identify scenarios where the Born-Oppenheimer approximation breaks down.
- ✓ identify the components of the electronic Schrodinger Equation.
- ✓ describe the role of the variation theorem in computational chemistry.
- ✓ describe the approximation made in Hartree-Fock theory and its consequences.
- ✓ identify the most time consuming part of a Hartree-Fock calculation.
- ✓ decide which form of HF is appropriate for a system, RHF ROHF or UHF.
- ✓ describe the advantages and disadvantages of using GTOs over STOs.
- ✓ determine the appropriate basis set for a particular calculation, considering accuracy and compute time.
- ✓ identify calculations in which BSSE is significant.
- ✓ apply basis set extrapolation to energies and other properties.
- ✓ describe the different forms of electron correlation and identify systems exhibiting each.
- ✓ describe how to determine a CI wave function and the pros and cons of such an approach.
- ✓ describe size consistency and extensivity, and identify calculations for which they are important.
- ✓ describe the form of the coupled-cluster wave function.
- ✓ identify systems for which a multireference wave function is required for accurate modelling.
- ✓ choose an appropriate active-space for a CAS, RAS or DMRG calculation.

Portion III: Dr. Robert Szilagyi

- ✓ Describe the key differences among MO and electron density based description of electronic structure
- ✓ Identify some of the earliest attempts to express electron-electron interactions using electron density
- ✓ Describe the first Hohenberg-Kohn Theorem as proof of existence for functional to describe all properties of a system
- ✓ Describe the second Hohenberg-Kohn Theorem as the variational principle
- ✓ Identify the essential elements of the Kohn-Sham approach
- ✓ Compare and contrast DFTB and DFTB approaches
- ✓ Select the appropriate DFTB repulsive potentials and calculate molecular properties, such as ground state structure, interpret the associated energy, atomic charges and spin densities
- ✓ Describe the concept of Jacob's ladder for exchange and correlation functionals
- ✓ Differentiate among local density, gradient-corrected, and hybrid density functionals; give examples for each

- ✓ Identify the conceptual sources of error in DFT (self-interaction, asymptotic behaviour, delocalization error)
- ✓ Demonstrate with calculations the functional dependence of ionic, covalent, magnetic bonding interactions
- ✓ Evaluate the performance of functionals in calculating spectroscopic (IR, UV-vis, core level excitations) features
- ✓ Perform broken-symmetry DFT calculations for open shell singlet systems with multiple unpaired electrons, project out to the pure spin state using the expectation value of the spin operator.

Software: Gromacs, VMD, Gaussian-16, Orca, Avogadro, DFTB+, Putty, MobaXterm, etc.

Assessments: The developers/instructors of the Introductory Module will develop the assessments that they feel are most appropriate for the course. They will also develop rubrics for those assessments. The local administrators for the course will be responsible for the marking of the assessments.

4.5. Appendix E

The tables below summarize the progress made so far in the developing each of the PC_3 modules:

1- The Intro Module/Course:

Developers:	Dr. Richard Bowles, Dr. Joshua Hollett and Dr. Robert Szilagyi
Outline:	Developed
Materials:	Development in progress

2- The AM1 Advanced Module:

Developers:	Dr. Gino DiLabio and Dr. Alberto Otero de la Roza
Outline:	Developed
Materials:	Development in progress

3- The AM2 Advanced Module:

Developers:	Dr. Paul Johnson, Dr. Farnaz Haidar-Zadeh, and Dr. Christopher Rowley
Outline:	Development in progress
Materials:	Development in progress

4- The AM3 Advanced Module:

Developers:	Dr. Erin Johnson, Dr. Georg Schreckenbach, and Dr. Tom Woo
Outline:	Developed
Materials:	Development in progress

5- The AM4 Advanced Module:

Developers:	Dr. James Gauld, Dr. Stacey Wetmore
Outline:	Development in progress
Materials:	Development in progress

PC_3 Introductory Modules Outline

Department of Biochemistry

COURSE CODE: Bioc 6002

Fall 2024 (Sept - Dec 2024)

Instructors:

The local instructor at Memorial University of Newfoundland is Dr. Katie Wilson (k.wilson@mun.ca).

Content will be presented by several external instructors:

Instructors: Dr. Richard Bowles (Part I, richard.bowles@usask.ca), Dr. Joshua Hollett (Part II, j.hollett@uwinnipeg.ca), and Dr. Robert Szilagyi (Part III, robert.szilagyi@ubc.ca)

Lectures:

Synchronous lectures will be held on Mondays and Wednesdays from 11:00 AM to 12:30 PM (Pacific Time) over Zoom. There will be no classes on Truth and Reconciliation Day (Sept 30), Thanksgiving Day (Oct 14), and Remembrance Day (Nov 11). Links will be provided to the class by email. Students are expected to have a working microphone and webcam for discussion. **Instructors may require that students keep their cameras on during lectures.**

Module length: full semester

Prerequisite Knowledge: Students entering the PC_3 program should have an undergraduate-level understanding of:

- Linear Algebra, Calculus of multiple variables, Basic quantum chemistry
- Intro level quantum chemistry, electronic structure and bonding theories (some level of physical organic or inorganic chemistry)

Pre-work: This section outlines work students should do prior to joining the course. This is self-directed learning that prepares them for the course and may constitute readings and exercises to be completed to support their learning.

For Part III, select a molecule or interacting molecules of interest via weak interactions to be evaluated at various functionals and approximate DFT potentials.

Topics:

Part I: Dr. Richard Bowles

This part of the course focuses on molecular mechanics, including potential energy functions and geometry optimization. It also introduces statistical mechanics with applications to calculations of the molecular partition function, thermodynamics, as well as molecular dynamic and Monte Carlo simulation methods.

Introduction

- Schrodinger equation (brief introduction to motivate molecular mechanics)
- Potential Energy Surfaces

Molecular Mechanics potential Energy Function

Different components of MM:

- Bonded interactions
  Bond stretching
  Angle bending
  Torsional terms
  Cross Terms
- Intermolecular potential energies
  Van der Waals interactions
  Buckingham potential
  Lennard Jones potential
  XDX and D3 Models
- Electrostatic interactions
  Ewald sum methods
  Other methods (reaction field, Lekner, Wolf)
- Empirical Force Fields
  Parameterization strategies
  Common Force Fields (MM2, AMBER, OPLS, CHARMM)
  Machine Learning Force Fields
- Geometry Optimization
  Optimization methods
  Transition states
  Conformational Search

Review of Statistical Mechanics

- From microscopic to macroscopic
- Micro-states and phase space
- Postulates of statistical mechanics
- Ensembles
- Canonical partition function
- Boltzmann distribution
- Averages

Molecular Partition function

- Zero Point energy
- Non-interacting systems
  Molecular electronic partition function
  Molecular Translational partition function
  Molecular Rotational partition function/Hindered rotation.
  Molecular Vibrational partition function

Thermodynamics

Energy
Entropy
Free energies

Including Temperature

Molecular Dynamics

- Basic integration schemes
- Tricks of the trade
- Dynamic quantities

Monte Carlo

- Basics of MC integration
- Metropolis Sampling

Part II: Dr. Joshua Hollett

This part of the module is dedicated to the introduction of wavefunction based methods, and practical aspects such as basis sets. A focus will be placed on which methods are applicable in various scenarios (e.g. size, accuracy, desired property) and why they may not be suitable. Emphasis will also be placed on the computational cost/scaling of each method.

Born-Oppenheimer Approximation

- Potential Energy Surface
- Total molecular Schrodinger Equation

Electronic Schrodinger Equation

Variation Theorem

Hartree-Fock Approximation

- Indistinguishability, antisymmetry and electron spin
- Slater determinants
- HF energy expression and one- and two-electron integrals
- HF equations
- SCF
- RHF, ROHF, UHF
- limitations of HF

Basis functions

- Atom-centred vs. plane wave basis functions
- GTO vs. STO
- Basis sets: Pople, Dunning, Ahlrichs, etc. (polarization, diffuse, core)
- Pseudopotentials (ECPs etc.)
- Completeness and extrapolation to the CBS limit
- BSSE

Post-HF

- electron correlation
- Configuration Interaction
    - electron configurations (occupied and virtuals orbitals, active and frozen)
    - full and truncated CI
    - selected CI
    - size consistency and extensivity
- Coupled-Cluster
- Moller-Plesset Perturbation
- Multireference methods
    - CASSCF, RASSCF, MRCI and MRPT
    - DMRG

Part III: Dr. Robert Szilagyi

This section will focus on electron density-based description of energy, geometry, and properties. Both the density functional tight binding and “ab initio” density functional methods will be introduced. Firstly, the performance of various repulsive potentials will be compared and contrasted using examples selected by the students (if parameters are available). Secondly, the density functionals will be discussed using Perdew’s Jacob’s ladder concept and contrasted with the conceptually converging series of Pople’s model chemistry.

I. Introduction to density functional theory

- Philosophy, electron density vs. wave function, compare and contrast to HF theory and post-HF theory.
- Early Approximations
- Kohn-Sham self-consistent field methodology

II. Approximate DFT = DFTB

- Tight binding theory, DFTB2 vs. DFTB3
- Performance - best and worst case scenarios
- Molecular dynamics using DFTB level of theory (connection to Richard's section)

III. "ab initio" DFT

- exchange-correlation functionals
- Jacob's ladder: LDA, GGA, metaGGA, hyperGGA, double hybrid, RPA
- Excited state calculations: orbital energies, ΔSCF, TD-DFT
- Performance - Ionic, covalent, magnetic bonding and interactions
- Broken-symmetry DFT calculations for multi-spin paramagnetic system

3- DFTB: DFTB+ - https://dftbplus.org/about-dftb

Learning Outcomes: Upon completion of this module, student should be able to:

Part I:

- Describe the potential energy surface and its topology.
- Describe the bonded and non-bonded interactions used in MM
- Identify the best optimization methods for a given problem.
- Perform conformational search on a simple molecular system.
- Describe principles of statistical mechanics.
- Calculate probabilities, and thermodynamic properties of simple molecules using the molecular partition function.
- Describe the principle of molecular dynamics
- Describe the principles of Monte Carlo simulation

Part II:

- describe the origin of the potential energy surface and its role in computational chemistry.
- identify scenarios where the Born-Oppenheimer approximation breaks down.
- identify the components of the electronic Schrodinger Equation.
- describe the role of the variation theorem in computational chemistry.
- describe the approximation made in Hartree-Fock theory and its consequences.
- identify the most time-consuming part of a Hartree-Fock calculation.
- decide which form of HF is appropriate for a system, RHF ROHF or UHF.
- describe the advantages and disadvantages of using GTOs over STOs.
- determine the appropriate basis set for a particular calculation, considering accuracy and compute time.
- identify calculations in which BSSE is significant.
- apply basis set extrapolation to energies and other properties.
- describe the different forms of electron correlation and identify systems exhibiting each.
- describe how to determine a CI wave function and the pros and cons of such an approach.
- describe size consistency and extensivity, and identify calculations for which they are important.
- describe the form of the coupled-cluster wave function.
- identify systems for which a multireference wave function is required for accurate modelling.
- choose an appropriate active-space for a CAS, RAS or DMRG calculation.

Part III:

- Describe the key differences among MO and electron density based description of electronic structure
- Identify some of the earliest attempts to express electron-electron interactions using electron density
- Describe the first Hohenberg-Kohn Theorem as proof of existence for functional to describe all properties of a system
- Describe the second Hohenberg-Kohn Theorem as the variational principle
- Identify the essential elements of the Kohn-Sham approach
- Compare and contrast DFTB and DFTB approaches
- Select the appropriate DFTB repulsive potentials and calculate molecular properties, such as ground state structure, interpret the associated energy, atomic charges and spin densities
- Describe the concept of Jacob's ladder for exchange and correlation functionals
- Differentiate among local density, gradient-corrected, and hybrid density functionals; give examples for each
- Identify the conceptual sources of error in DFT (self-interaction, asymptotic behaviour, delocalization error)

- Demonstrate with calculations the functional dependence of ionic, covalent, magnetic bonding interactions
- Evaluate the performance of functionals in calculating spectroscopic (IR, UV-vis, core level excitations) features
- Perform broken-symmetry DFT calculations for open shell singlet systems with multiple unpaired electrons, project out to the pure spin state using the expectation value of the spin operator.

Software:

Part I:

GROMACS, VMD.

Part II:

ORCA, Avogadro.

Part III:

Gaussian-16, DFTB+, ORCA may also be used.

Course Assessment:

The grade for **Intro Module** will be determined from an equal weighting of three parts of the course.

Component	Assignments and Topics Covered	% of Final Grade	Approx. Date
Part 1	1) Assignment 1 2) Assignment 2 3) Assignment 3	33.33	After week 1
Part 2	1) Exercise (using ORCA) exploring cost of HF calculations (timing) - compare timings of SCF for HF/cc-pVnZ calculations (n=2 to 5) - compare energies (or other properties) and extrapolate (exponential ansatz)	33.33	After week 5

	2) Exercise exploring effect of BSSE - determine effect of BSSE for small molecule complex (basis set extrap, CP and CHA corrections) 3) Exercise exploring single and multireference post-HF - calculation of energy barrier for single ref system (not sure yet) using CC, MPn (frozen and active core) - calculation of energy barrier for multi ref system (not sure yet) using CC, MPn, MRSCF and MRPT2		
Part 3	1) Assignment 1 2) Assignment 2 3) Assignment 3	33.33	After week 9

MEMORIAL UNIVERSITY

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

November 12, 2024

TO: Registrar's Office
School of Graduate Studies

FROM: Secretary, Faculty of Science Faculty Council

SUBJECT: Special Topics Courses – Faculty of Science

The special topics course listed below have been approved by the Faculty of Science Faculty Council Graduate Studies Committee:

- CHEM-6496, Advanced Analytical Teachniques in Organic Chemistry

The Request for Approval of a Graduate Course forms are attached. If you require more information please let me know.

Gina Jackson
Secretary, Faculty of Science Faculty Council

cc: A. Fiech, Chair, Graduate Studies Committee
Y. Zhao, Department of Chemistry
Registrar

MEMORIAL UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Request for Approval of a Graduate Course

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

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

Course No.: CHEM 6496

Course Title: Advanced Analytical Teachniques in Organic Chemistry

I. To be completed for all requests:

A. Course Type:

☐ Lecture course
☐ Laboratory course
☑ Directed readings
☐ Lecture course with laboratory
☐ Undergraduate course[1]
☐ Other (please specify)

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

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

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

E. Credit hours for this course: 3

F. Course description (please attach course outline and reading list):

G. Method of evaluation:

	Percentage	
	Written	**Oral**
Class tests		
Assignments	50	
Other (specify):		50
Final examination:		
Total	100	

[1] Must specify the additional work at the graduate level

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

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

		Instructor's initials
1.	duplication of thesis work	_____
2.	double credit	_____
3.	work that is a faculty research product	_____
4.	overlap with existing courses	_____

Recommended for offering in the (Fall) Winter Spring 20 24

Length of session if less than a semester:

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

_____ **Oct 4, 2024**

Course instructor — Date

_____ Oct. 7, 2024

Approval of the head of the academic unit — Date

Digitally signed by 1b1022f8-4eb3-4587-9089-ebcdb3671f44
DN: CN=1b1022f8-4eb3-4587-9089-ebcdb3671f44
Reason: I have reviewed this document
Location: St. John's
Date: 2024.10.07 19:26:23-02'30'
Foxit PDF Editor Version: 12.1.2

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

_____ October 19, 2024

Secretary, Faculty/School/Council — Date

From: Stephanie MacQuarrie
To: Yuming Zhao; deansciassistant
Cc: Christina Bottaro; chemapo
Subject: Re: Adding special graduate course
Date: Monday, November 4, 2024 11:36:10 AM
Attachments: Outlook-uf5gz1xs.png
Outlook-lhrvgwoa.png

Hi All

I think there may be a mistake - it should be for Winter 2025.

Stephanie

Dr. Stephanie MacQuarrie (she/her)
Professor Organic Chemistry
Dean of SS&T
FCIC
Cape Breton University
Sydney, N.S.
https://www.macquarrieresearch.ca/

Book time to meet with me

From: Yuming Zhao <yuming@mun.ca>
Sent: 02 November 2024 00:37
To: deansciassistant <deansciassistant@mun.ca>
Cc: Stephanie MacQuarrie <Stephanie_MacQuarrie@cbu.ca>; cbottaro@mun.ca <cbottaro@mun.ca>; chemapo@mun.ca <chemapo@mun.ca>
Subject: Re: Adding special graduate course

Thanks, Cherie! It is for the fall semester of 2024.

Yuming

On 2024-11-01 15:59, deansciassistant wrote:
> Hi Yuming,
>
> This course is approved. I noticed that the course was for Fall

> registration. Is that correct?
>
> Thanks
> Cherie
>
> -----Original Message-----
> From: Yuming Zhao <yuming@mun.ca>
> Sent: Monday, October 7, 2024 9:44 PM
> To: deansciassistant <deansciassistant@mun.ca>
> Subject: Adding special graduate course
>
> Hi Cherie,
>
> This is Prof. Yuming Zhao, the GO of Chemistry Department. I am
> sending you a request for approval of graduate course (CHEM 6496). The
> requested course is for two of our graduate students who are
> conducting research at Cape Breton University and their supervisors
> are at CBU as well. It is kind of urgent for them to register this
> graduate course in this fall semester. Our APO just advised me to
> contact you for having this sent to the FoS Graduate Studies Committee
> for consideration and approval.
>
> Please let me know if the documents are OK or you need any further
> information.
>
> Thanks,
>
> Yuming

CHEM 6496: Advanced Analytical Techniques in Organic Chemistry

Instructor Information

Instructor	Email	Office Location and Hours
Dr. Stephanie MacQuarrie	Stephanie_MacQuarrie@cbu.ca	Online, at request,

General Information

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

Course Description:

This directed reading course delves into advanced analytical methods for studying organic compounds, focusing on NMR, mass spectrometry, IR, and chromatography. Students will engage with scholarly literature, critically analyze current research, and present findings on the application of these techniques in organic chemistry. Emphasis is placed on understanding how these methods are used to elucidate reaction mechanisms and molecular structures. Regular presentations and discussions replace lab work, fostering in-depth exploration and peer learning.

Prerequisite:

Graduate student in Chemistry

Course Material and Resources

Texts (no textbook is required for this course)

Recommended textbooks/resources on this subject:

Background resource: free "Organic Spectroscopy: Principles and Applications" by Jag Mohan. This textbook provides a comprehensive introduction to spectroscopy methods including NMR, IR, and mass spectrometry, with applications to organic compounds. It's available for free from various educational platforms and provides detailed explanations of the principles and techniques used in organic chemistry.

https://books.google.ca/books?id=fA08Uy5DR0QC&printsec=copyright&redir_esc=y#v=onepage&q&f=false

Recommended Journals:

1. **Journal of Organic Chemistry**.
2. **Mass Spectrometry Reviews**
3. **Journal of Chromatography A**
4. **Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy**

Evaluation (tentative)

Component	Weight (%)	Description

Class Participation	20%	Active involvement in discussions, asking questions, and providing constructive feedback to peers. Participation in online forums or discussion boards can also be included.
Literature Review Assignment	30%	A written assignment where students select a recent article or study related to the techniques covered in class. The review should summarize key findings, methodologies, and implications.
Presentations	30%	Students will present their literature review findings to the class. Evaluation criteria include clarity, depth of understanding, presentation skills, and engagement with the audience.
Critical Analysis Paper	20%	A short paper analyzing the application of one or more analytical methods (NMR, mass spectrometry, IR, chromatography) in elucidating reaction mechanisms or molecular structures. This paper should demonstrate critical thinking and synthesis of ideas from multiple sources.

Course Topics (tentative)

Combined Analytical Techniques in Organic Chemistry

- Using MS coupled with NMR, IR, or chromatography (GC-MS, LC-MS, etc.)
- Synergistic approaches to elucidating complex molecular structures
- Case studies on combining techniques for in-depth analysis

Advanced Applications in Reaction Mechanism Studies

- Real-world examples of how these analytical methods elucidate reaction mechanisms
- Kinetic isotope effects and their interpretation using spectroscopic data
- Monitoring and verifying reaction intermediates

Learning Outcomes

- Students will demonstrate a deep theoretical understanding of NMR, MS, IR, and chromatography, including their principles, limitations, and applications in organic chemistry.
- Students will critically assess and summarize peer-reviewed articles focused on the application of analytical techniques in organic chemistry.
- Students will synthesize information from multiple readings to understand how various analytical methods complement each other in elucidating molecular structures and reaction mechanisms.
- Students will effectively communicate their understanding of advanced analytical methods through presentations and written reports.
- Students will demonstrate the ability to independently find, interpret, and integrate scholarly literature related to organic chemistry and analytical methods.

MEMORIAL UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Request for Approval of a Graduate Course

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

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

Course No.: EASC 6173

Course Title: An Introduction to Potential Field, Electrical and Electromagnetic Methods

I. To be completed for all requests:

A. Course Type:

☐ Lecture course
☐ Laboratory course
☐ Directed readings
☑ Lecture course with laboratory
☐ Undergraduate course[1]
☐ Other (please specify)

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

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

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

E. Credit hours for this course: 3

F. Course description (please attach course outline and reading list):

Please see accompanying document.

G. Method of evaluation:

	Percentage	
	Written	**Oral**
Class tests		
Assignments	Please see accompanying document.	
Other (specify):		
Final examination:		
Total		

[1] Must specify the additional work at the graduate level

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

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

	Instructor's initials
1. duplication of thesis work	_____
2. double credit	_____
3. work that is a faculty research product	_____
4. overlap with existing courses	_____

Recommended for offering in the Fall Winter Spring 20 ___

Length of session if less than a semester:

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

Digitally signed by Colin Farquharson
Date: 2024.10.03 09:37:31 -02'30'

_____ _____

Course instructor Date

Luke Beranek Digitally signed by Luke Beranek
Date: 2024.10.29 10:26:35 -02'30'

_____ _____

Approval of the head of the academic unit Date

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

_____ _____

Secretary, Faculty/School/Council Date

EASC 6173: An Introduction to Potential Field, Electrical and Electromagnetic Methods

Summary

This graduate-level course will involve the same lectures, laboratory sessions, exams, assignments and laboratory write-ups as the fourth-year undergraduate-level course EASC 4173 "Advanced Electrical, Electromagnetic and Potential Fields Methods ", but with an additional project. The aim is to bring graduate students who have backgrounds in fields other than Geophysics, or who have done their undergraduate studies at an institution other than MUN that does not offer courses on the material covered in EASC 4173, up to a level in potential field, electrical and electromagnetic geophysical methods appropriate for graduate studies in the M.Sc. or Ph.D. Geophysics programs here at MUN.

Rationale

Students with an undergraduate degree in Physics, Mathematics, Computer Science, Geology, etc., but not in Geophysics, nevertheless have the potential to be successful Geophysics M.Sc. and Ph.D. students. Such students have the necessary backgrounds and skills in Physics, Mathematics, etc., but are lacking in their Geophysics knowledge. The proposed new graduate-level course, EASC 6173, will provide a pathway for such students to learn the basics of the theory and practical application of geophysical potential field, electrical and electromagnetic methods needed for graduate studies in Geophysics, but to do so in a way appropriate for a graduate student (i.e., with a research project over and above the undergraduate-level lectures and labs) and that gives them graduate-course credit.

Course outline

This course will cover the theory and application of these applied geophysics techniques (i.e., gravity, magnetic, electrical and electromagnetic methods). Topics covered will include: gravitational and magnetic fields due to distributions of density and magnetization; potential theory, and processing techniques derived from this theory; conservation of charge, Ohm's law and Maxwell's equations for electric and electromagnetic fields in the Earth's subsurface. The lecture component of the course will cover the theoretical aspects. The laboratory component will enable students to apply computer modelling and interpretation methods to real-life data-sets.

Resources

Blakely, "Potential Theory in Gravity & Magnetic Applications";
Grant & West, "Interpretation Theory in Applied Geophysics";
Telford et al., "Applied Geophysics";
Nabighian (ed.), "Electromagnetic Methods in Applied Geophysics";
Dentith & Mudge, "Geophysics for the Mineral Exploration Geoscientist";
Everett, "Near Surface Applied Geophysics";
Reynolds, "An Introduction to Applied and Environmental Geophysics".

Evaluation

75% of the course evaluation will follow the evaluation for EASC 4173:

Assignments	7.5%,
Laboratory exercises	22.5%,
In-term exam 1	11.25%,

In-term exam 2	11.25%,
Final exam	22.5%.

The other 25% will be on a research project (on any topic relevant to potential field, electrical or electromagnetic methods):

Written document	20%,
Oral presentation	5%.

The expectation is that the research project will be of a depth and quality appropriate for a graduate student.

Core course proposed calendar changes

Rationale:

A motion was brought to the Graduate Studies Committee concerning the adoption of a new "core course"; that is, a new course to be added to the list of courses in 32.17.1 from which graduate students must complete some number. The Head, Dr. Loredo-Osti, responded in a departmental meeting that this would be impossible, as it would require him to regularly schedule that course even for a small number of students, which is financially unfeasible.

As a result, the Graduate Studies Committee has instead passed the following motions which will remove the core courses, leaving course selection at the discretion of the student and the supervisor, with the approval of the Head or delegate.

Changes:

In the calendar changes below, deletions are struck out in red, and additions are highlighted in yellow.

32.17.1 Specific Requirements for the M.Sc. in Mathematics

Every student for the M.Sc. in Mathematics is required to complete one of two options:

1. Option 1: MATH 696A/B~~, two courses from MATH 6160, 6310, 6332, 6351,~~ and a minimum of ~~9~~ 15 further credit hours in courses chosen from the departmental course offerings, excluding MATH 6299, and a thesis as per General Regulations, Theses and Reports.
2. Option 2: MATH 6299, 696A/B, ~~three courses from MATH 6160, 6310, 6332, 6351,~~ and a minimum of ~~9~~ 18 further credit hours in courses chosen from the departmental course offerings.

44.29.5.1 Mathematics

- 6100 Dynamical Systems
- 6101 Modern Perturbation Theory
- 6102 Mathematical Biology
- 6104 Infinite Dimensional Dynamical Systems
- 6110 Advanced General Relativity
- 6111 Calculus in Manifolds
- 6112-6119 Special Topics in Applied Mathematics
- 6120 Theoretical Fluid Dynamics
- 6121 Functional Differential Equations
- 6130 Introduction to General Relativity
- 6160 Partial Differential Equations
- 6201 Numerical Methods for Partial Differential Equations

- 6202 Nonlinear and Linear Optimization *(credit restricted with Computer Science 6933)*
- 6204 Iterative Methods in Numerical Linear Algebra
- 6205-6209 Special Topics in Numerical Analysis
- 6210 Numerical Solution of Differential Equations *(for Computational Science students only - required core course)*
- 6212 Numerical Methods for Initial Value Problems
- 6230 Differentiable Manifolds and Riemannian Geometry
- 6252 Quantum Information and Computing *(cross-listed with Physics 6852)*
- 6300 Homology Theory
- 6301 Homotopy Theory
- 6302 Theory of Fibre Bundles
- 6304-6309 Special Topics in Topology
- 6310 Functional Analysis
- 6311 Complex Analysis
- 6312 Measure Theory
- 6313 Functional Analysis II
- 6315-6319 Special Topics in Analysis
- 6320 Group Theory
- 6321 Ring Theory
- 6322 Nonassociative Algebra
- 6323 Homological Algebra
- 6324-6329 Special Topics in Algebra
- 6330 Analytic Number Theory
- 6331 Algebraic Number Theory
- 6332 Point Set Topology
- 6333 Representation Theory
- 6340 Graph Theory
- 6341 Combinatorial Design Theory
- 6342 Advanced Enumeration
- 6343-6349 Special Topics in Combinatorics
- 6351 Advanced Linear Algebra

44.29.5.2 Statistics

- 6503 Stochastic Processes
- 6505 Survival Analysis
- 6520 Linear Models
- 6530 Longitudinal Data Analysis
- 6540 Time Series Analysis
- 6545 Computational Statistics
- 6550 Nonparametric Statistics
- 6559 Statistical Exploration of Data
- 6561 Categorical Data Analysis
- 6564 Experimental Designs
- 6563 Sampling Theory
- 6571 Financial and Environmental Time Series

- 6573 Statistical Genetics
- 6570-6589 Selected Topics in Statistics and Probability (excluding 6571, 6573, 6586)
- Note that, although the courses ~~6160, 6310, 6332, 6351,~~ 6500, 6510 and 6560 cannot be used to fulfill the 6 credit hours graduate courses requirement, any of them can be listed as part of the program of study as additional course work, whenever the supervisory committee deems it appropriate.

MEMORIAL UNIVERSITY

Department of Psychology

Memorial University of Newfoundland
Science Building Room 2065
St. John's, NL Canada A1B 3X9
Tel: 709 864 8496 Fax: 709 864 2430
psych@mun.ca www.mun.ca

Date: November 13, 2024

TO: School of Graduate Studies

FR: Department of Psychology

RE: Proposed Calendar Changes to 32.19.2, 44.35.3, and 45.4 to delete courses

---

Our department has decided to delete the following courses from the calendar because they will never be taught again. The proposed calendar changes are below, where deletions are indicated in strikethrough and highlighted in yellow.

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

- 6000 Advanced Statistics in Psychology
- 6001 Research Design
- 6002 Advanced Statistics in Psychology II
- 6003 Directed Studies in Advanced Statistics I
- 6004 Directed Studies in Advanced Statistics II
- 6010 Colloquium Series in Psychology (repeatable, non-credit)
- 6100-6130 Special Topics in Experimental Psychology
- 6200 Learning I
- 6201 Learning II
- 6203 Behavioural Pharmacology
- 6210 Behavioural Analysis of Toxins
- ~~6351 Behavioural Ecology and Sociobiology *(cross-listed as CABE 6351)*~~
- 6400 Theory and Methods in Social Psychology
- 6401 Social Cognition
- 6402 Group Processes
- 6403 Program Evaluation and Applied Research
- 6404 Project in Applied Psychological Science *(Note: This course is open only to students in the Master of Applied Psychological Science)*
- 6500 Developmental Psychology I
- 6501 Developmental Psychology II
- 6502 Developmental Changes During Old Age
- 6700 Perception
- 6710 Human Information Processing
- 6720 Human Memory
- 6800 Behavioural Neuroscience I
- 6801 Behavioural Neuroscience II
- 6810 Psychometrics

- 6910 Personality
- ~~699A/B Core Graduate Seminar in Psychology~~

44.35.3 Courses (Ph.D.)

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

- 6000 Advanced Statistics in Psychology
- 6001 Research Design
- 6002 Advanced Statistics in Psychology II
- 6003 Directed Studies in Advanced Statistics I
- 6004 Directed Studies in Advanced Statistics II
- 6010 Colloquium Series in Psychology *(repeatable, non-credit)*
- 6100-6130 Special Topics in Experimental Psychology
- 6200 Learning I
- 6201 Learning II
- 6203 Behavioural Pharmacology
- 6210 Behavioural Analysis of Toxins
- ~~6351 Behavioural Ecology and Sociobiology *(cross-listed as CABE 6351)*~~
- 6400 Theory and Methods in Social Psychology
- 6401 Social Cognition
- 6402 Group Processes
- 6403 Program Evaluation and Applied Research
- 6404 Project in Applied Psychological Science *(This course is open only to students in the Master of Applied Psychological Science)*
- 6500 Developmental Psychology I
- 6501 Developmental Psychology II
- 6502 Developmental Changes During Old Age
- 6700 Perception
- 6710 Human Information Processing
- 6720 Human Memory
- 6800 Behavioural Neuroscience I
- 6801 Behavioural Neuroscience II
- 6810 Psychometrics
- 6910 Personality
- 6990 Doctoral Seminar I
- 6991 Doctoral Seminar II
- ~~6992 Doctoral Seminar in Cognitive and Behavioural Ecology *(cross-listed as CABE 6992)*~~
- ~~699A/B Core Graduate Seminar in Psychology~~

45.4 Courses (Psy.D.)

- 6000 Advanced Statistics
- 6001 Research Design
- 6602 Research Design in Clinical Psychology
- 6611 Ethics of Professional Practice
- 6612 Adult Psychopathology
- 6614 Selected Topics in Psychopathology
- 6620 Principles of Adult Assessment and Diagnosis
- ~~6621 Principles of Child Assessment and Diagnosis~~
- 6622 Selected Topics in Assessment and Diagnosis
- 6623 Child Psychopathology, Assessment and Diagnosis
- 6630 Principles of Intervention with Adults
- 6631 Principles of Intervention with Children

- 6632 Community Interventions
- 6633 Clinical Psychopharmacology
- 6634 Selected Topics in Intervention
- 6640 Consultation Processes
- 6650 Supervision
- 6660-6669 Special Topics in Clinical Psychology
- 6670 Interprofessional Education *(3 credit hours over six terms: Fall and Winter terms for Years 1, 2, and 3)*
- 7010 Practicum in Ethics and Relationship Skills
- 7020 Practicum in Adult Assessment and Diagnosis I
- 7021 Practicum in Adult Assessment and Diagnosis II
- 7022 Practicum in Child Assessment and Diagnosis
- 7030 Practicum in Assessment and Intervention I
- 7031 Practicum in Assessment and Intervention II
- 7032 Practicum in Assessment and Intervention III
- 7033 Practicum in Advanced Assessment and Intervention I
- 7034 Practicum in Advanced Assessment and Intervention II
- 7035 Practicum in Rural Intervention and Interprofessional Practice
- 7050 Practicum in Supervision I
- 7051 Practicum in Supervision II

MEMORIAL UNIVERSITY

Department of Psychology

Memorial University of Newfoundland
Science Building Room 2065
St. John's, NL Canada A1B 3X9
Tel: 709 864 8496 Fax: 709 864 2430
psych@mun.ca www.mun.ca

Date: November 13, 2024

TO: School of Graduate Studies

FR: Department of Psychology

RE: Proposed Calendar Changes to 32.19.1 to add Health and Wellness specialization area

---

Our department has decided to formally add the Health and Wellness area of specialization to the M.Sc. program. The proposed calendar changes are below, with additions marked as underlined and deletions marked in strikethrough.

32.19.1 Program of Study
A student may be accepted into a program leading to the M.Sc. in Experimental Psychology.

Experimental Psychology

1. The areas of specialization offered are: Animal Behaviour (see Cognitive and Behavioural Ecology Program), Behavioural Neuroscience, Health and Wellness**,** ~~and~~ ~~Clinical,~~ Cognitive Psychology, Developmental Psychology, and Social Psychology.
2. Students in the Behavioural Neuroscience area shall normally complete 12 credit hours, including: Advanced Statistics in Psychology (6000), Research Design (6001), and 6 credit hours related to their area of specialization. Students will also register for the Colloquium Series in Psychology (6010) each Fall and Winter semester of their program for a maximum of four registrations.
3. Students shall normally complete 15 credit hours, including: Advanced Statistics in Psychology (6000), Research Design (6001), an additional 3 credit hours of Advanced Statistics Courses (either PSYC 6002, PSYC 6003, or PSYC 6004), and 6 credit hours related to their area of specialization. Students will also register for the Colloquium Series in Psychology (6010) each Fall and Winter semester of their program for a maximum of four registrations.
4. Every student shall submit an original thesis based upon an approved experimental research topic.