

**FACULTY OF SCIENCE
ACADEMIC COMMITTEE**

Minutes of the meeting held on 15 February 2022 at 3:00 p.m. by Zoom Videoconferencing.

PRESENT: Associate Dean (Academic) Axel Hundemer, Peter Barry (Chief Academic Advisor); Professors Jennifer Bartz, Amy Blum, Huy Bui, Maxime Denis, Caroline Dufour, Benjamin Forest, Daryl Haggard, Greg Marczynski, Ana Nyzhnyk, Jeanne Paquette, Courtney Paquette (in lieu of Johanna Neslehova), Clark Verbrugge, Natalie Waters; Melissa Dunn, Samantha Gorle, Alexandra Mircescu, Yufeng Peng, Emaan Qazi; Faye Hughes, Josie D'Amico.

REGRETS: Professors Barbara Hales, Kathy Roulet, Claire Braaten,

GUEST: Mr. Victor Chisholm, Director Marcy Slapcoff, Dr. Diane Dechief, Prof. Jennifer Sunday,

DOCUMENTS: AC-21-31(Rev), AC-21-60/60.1, AC-21-66 to AC-21-82

Associate Dean Hundemer called the meeting to order at 3 p.m., and welcomed members to the fifth Academic Committee meeting of the year.

1. Adoption of Agenda

Item # 10, Computer Science new courses, COMP 170 and COMP 370, to be postponed to a future Academic Committee meeting.

Prof. Forest **moved**, seconded by Prof. Denis, that the amended Agenda be approved.

The motion carried.

2. Minutes of 11 January 2022

AC-21-66

Prof. Denis **moved**, seconded by Ms. Waters, that the Minutes be approved.

The motion carried.

3. Business Arising from the Minutes

There was no business arising from the Minutes.

4. Courses on Dean's Multidisciplinary Undergraduate Research List (DMURL) AC-21-60

- Hybrid Courses Proposed: Psychology AC-21-60.1

Following the last meeting of the Academic Committee's discussion concerning departments' independent research project courses that include a component of instruction in research methods, Mr. Victor Chisholm asked members for their feedback on using the following guidelines to qualify for the DMURL.

- A preponderance of these guidelines should apply, not necessarily 100%.
- The professor should be more of a supervisor/mentor/overseer, less of a teacher
- Not "follow the recipe", not cookbook – projects should reflect the creative or problem-solving side of research

- **Significant portion of the course (more than half the student's effort) devoted to the research** project; lectures, instruction in the topic, technical how/to etc. not the main focus of contact time.
- This significant weight of the research project should be reflected in the grading scheme, and also the weekly schedule (how many hours in lecture mode, vs how much time "in the lab", how much additional time for homework and writing reports etc).
- Student involvement in a **significant** portion of the research experience, from insight to hypothesis, experimental design, data collection, testing, analysis, write-up / presentation. DMURL-able projects might not cover every stage, so e.g. data analysis alone would typically not be enough but a replication project might.
- Methods courses (traditional lab courses, research methods course, etc.) and technique-heavy courses are NOT generally DMURL-able.
- What is the student's typical experience in the course? What do they do, experience, learn, take away? Does that tell us anything different from the above questions?

After discussing whether the above guidelines reflected the departments' research course offerings and that the courses must be primarily research projects, Prof. Paquette **moved**, seconded by Prof. Haggard, to approve the guidelines to qualify for the DMURL.

The motion carried.

The members then discussed the following research project courses with instructional research methods and agreed that these courses were eligible for the DMURL since these mainly were research projects (hybrid courses).

- MIMM 390 SEA-PHAGES: Phage Discovery (3 credits)
- MIMM 391 SEA-PHAGES: Genome Annotation (3 credits)
- BIOL 389: Laboratory in Neurobiology (3 credits)

Prof. Gerhold **moved**, seconded by Prof. Bartz, that the above courses be added to the the DMURL.

The motion carried.

The Psychology courses in Document AC-21-60.1 will be considered at a future Academic Committee meeting, after consultation with the course instructors.

5. Faculty of Science

FSCI 198

Climate Crisis and Climate Actions
3 credits

AC-21-31(Rev)

Director Marcy Slapcoff (OSE) and Dr. Diane Dechief (course coordinator) introduced the new cross-disciplinary course, FSCI 198. The course will consist of a mixture of lectures and labs or workshops and will be a gateway course with no prerequisites and open to all undergraduates at McGill. FSCI 198 will be led by the Faculty of Science, however, it is not a typical Science course. The goal of the course will be to expose students to different ways of understanding and responding to the climate crisis or climate change. Students will learn the core skills that people need to address climate change and collaborate with people from different viewpoints and disciplinary traditions. The core group of instructors will be Prof. Jennifer Sunday (Biology), Prof. Natalya Gomez (Earth & Planetary Sciences), and Prof. Chris Ragan (Director, Max Bell School of Public Policy).

Several members suggested that green chemistry and eco-anxiety be incorporated into the course. Another member commented on the reading lists, and the lack of direct assessments of the readings or the lecture materials. In reply, Dr. Dechief said that the reading lists for the course were not yet finalized, and the course was more focused on active learning than on readings.

Prof. Paquette **moved**, seconded by Prof. Denis, that the course be adopted.

The motion carried.

6. Mathematics & Statistics

MATH 222	Calculus 3 Change in Restrictions 3 credits	AC-21-67
----------	---	-----------------

On behalf of Prof. Neslehova, Associate Dean Hundemer said that the CEGEP course number currently listed in the restrictions for MATH 222 was being removed because the Calculus course content varies from CEGEP to CEGEP and created confusion for students.

Associate Dean Hundemer **moved**, seconded by Prof. Denis, that the changes be approved.

The motion carried.

New Course:

MATH 378	Nonlinear Optimization 3 credits	AC-21-69
----------	-------------------------------------	-----------------

On behalf of Prof. Neslehova, Prof. Courtney Paquette said that the Department of Mathematics & Statistics was revamping the sequence of their courses on optimization. There has been considerable interest in data science and machine learning optimization. Currently, the Department offers a course on optimization at the 500-level (MATH 560), which will be retired (below) and replaced with the new course, MATH 378, making it accessible to students at a lower level.

Prof. Forest **moved**, seconded by Prof. Dufour, that the course be adopted.

The motion carried.

New Course:

MATH 463	Convex Optimization 3 credits	AC-21-70
----------	----------------------------------	-----------------

New Course:

MATH 563	Honours Convex Optimization 3 credits	AC-21-71
----------	--	-----------------

Prof. Paquette introduced the above two new courses on convex optimization for non-Honours students, MATH 463 and MATH 563, for Honours and graduate students. She explained that convex optimization had been part of the standard curriculum at many universities as a result to the great demand for convex optimization algorithms in various areas of quantitative research. Students attend the same lectures, but those taking MATH 563 would have extra assignments/exams than students registered in the non-Honours course, MATH 463.

Due to an oversight, the School of Computer Science had not been consulted about including three prerequisite courses (COMP 202 or COMP 204 or COMP 208) in MATH 463 and MATH 563.

Prof. Denis **moved**, seconded by Prof. Dufour, that the above new courses be adopted.

The motion carried.

Secretary's Note: *Following the meeting, the Department of Mathematics & Statistics consulted with the School of Computer Science. The consultation report was received the next day.*

Course Retirement

MATH 560	Optimization 4 credits	AC-21-68
----------	---------------------------	-----------------

MATH 560 is being retired due to the new course, MATH 378, on optimization.

Prof. Denis **moved**, seconded by Prof. Forest, that the retirement be approved.

The motion carried.

7. **Biology**
BIOL 202 Basic Genetics **AC-21-72**
 Change in Supplementary Calendar Information
 3 credits

Prof. Gerhold said that BIOL 202 had not been offered during the Summer term since the overhaul of the Biology undergraduate curriculum several years ago. In order to remove the Summer term from the eCalendar, a course revision form is required for SCTP's approval.

Prof. Gerhold **moved**, seconded by Prof. Dufour, that the changes be approved.

The motion carried.

Associate Dean Hundemer pointed out that SCTP now requires a course revision form for course term changes. However, it is essential to note that term changes should be discussed with departmental advisors and SOUSA to ensure that the changes in term do not affect programs in other departments.

BIOL 307	Behavioural Ecology Changes: Course Activities, Description, Prerequisites, Supplementary Calendar Information 3 credits	AC-21-73
----------	---	-----------------

Prof. Gerhold explained that a new prerequisite was introduced to better prepare students for BIOL 307. Also, the lecture hours and the course description have been updated to reflect the course content.

Prof. Gerhold **moved**, seconded by Prof. Denis, that the changes be approved.

The motion carried.

BIOL 499D1/D2	Honours Seminar in Biology Changes: Course Activities, Description, Restrictions, Supplementary Calendar Information	AC-21-74
---------------	--	-----------------

4 credits

Prof. Gerhold said that BIOL 499D1/D2 was currently offered as a seminar course with guest speakers from outside McGill, but due to COVID-19, this was no longer practicable. BIOL 499D1/D2 has been redesigned to provide students with a combination of lectures, discussions, and assignments about the practical aspects of science and scholarship. Students will attend research seminars in their area of research and as part of structured series. BIOL 499D1/D2 will be available to students in the Honours Program in Biology and the Quantitative Biology or Computer Science programs. The course description, restrictions, and course activities have been updated accordingly.

Prof. Gerhold **moved**, seconded by Prof. Dufour, that the changes be approved.

The motion carried.

8. Geography

New Course:

GEOG 428	Earth System GIS	AC-21-75
	3 credits	

New Course:

GEOG 628	Advanced Earth System GIS	AC-21-76
	3 credits	

Prof. Forest introduced the above new GIS courses (GEOG 428, GEOG 628), focussing on Geography techniques, Geographic Information Systems and Science. Students will be attending the same lectures, but the assignments and grading scheme will be distinct.

Prof. Forest **moved**, seconded by Prof. Verbrugge, that the above courses be adopted.

The motion carried.

9. B.Sc. Program Changes in Neuroscience

- Honours in Neuroscience	AC-21-77
- Major in Neuroscience	AC-21-78

Associate Dean Hundemer said that newly created courses from the Departments of Biology and Psychology, relevant for the Honours and Major Programs in Neuroscience, have been added to the Complementary courses offering students more flexibility.

Associate Dean Hundemer **moved**, seconded by Mr. Barry, that the changes be adopted.

The motion carried.

10. Computer Science

COMP 321	Programming Challenges	AC-21-79
	Changes: Credit [from 1 to 3 credits], Prerequisites, Corequisites)	
	3 credits	

Prof. Verbrugge explained that the proposed increased credit weight from one to three credits for COMP 321 is necessary to allow more time to adequately cover topics, discuss results more thoroughly, and do more practice techniques. In addition, a three-credit weight will better match the students' workload. The prerequisites and corequisites have been revised to ensure the proper background for all students in COMP 321.

Prof. Verbrugge **moved**, seconded by Prof. Gerhold, that the changes be approved.

The motion carried.

New Course:

COMP 585

Intelligent Software Systems
4 credits

AC-21-82

Prof. Verbrugge introduced a new intelligent software systems course, COMP 585, to be given by a new professor in the School of Computer Science. The course was previously offered twice as a topics course and was well received by students and complements existing AI and SE course offerings in Computer Science.

Prof. Verbrugge **moved**, seconded by Prof. Dufour, that the course be adopted.

The motion carried.

11. Other Business

There being no further business, Prof. Denis **moved**, seconded by Prof. Forest, that the meeting be adjourned.

The motion carried.