

**FACULTY OF SCIENCE
ACADEMIC COMMITTEE**

Minutes of the meeting held on 16 February 2021 at 3:00 p.m. via the Zoom Conference Application.

PRESENT: Vice-Dean David Stephens, Associate Dean (Academic) Axel Hundemer, Associate Dean (Student Affairs) Anthony Mittermaier; Professors Amy Blum, Huy Bui, Caroline Dufour, Maxime Denis, Benjamin Forest, Abigail Gerhold, Daryl Haggard, Barbara Hales, Greg Marczynski, Johanna Neslehova, Ana Nyzhnyk, Gillian O'Driscoll, Jeanne Paquette, Kathy Roulet, Clark Verbrugge, Natalie Waters; Rohan Bhutkar, Shereen Elaidi, Armaan Fallahi, Julia Forestell, Gabriela Moisescu-Pareja, Zoya Qudsi, Sneha Shinde; Faye Hughes, Josie D'Amico.

DOCUMENTS: AC-20-43 to AC-20-64

Vice-Dean Stephens called the meeting to order at 3:00 p.m.

1) ADOPTION OF AGENDA

Prof. Forest **moved**, seconded by Prof. Haggard, that the Agenda be adopted.

The motion carried.

2) MINUTES OF 19 JANUARY 2021

AC-20-43

Prof. Forest **moved**, seconded by Prof. Verbrugge, that the Minutes be approved.

The motion carried.

3) BUSINESS ARISING FROM THE MINUTES

There was no business arising from the Minutes.

4) CHEMISTRY

Course Revisions:

CHEM 332	Biological Chemistry Change in prerequisite 3 credits	<u>AC-20-44</u>
CHEM 334	Advanced Materials Changes: description, prerequisites 3 credits	<u>AC-20-45</u>
CHEM 345	Introduction to Quantum Chemistry Change in prerequisite	<u>AC-20-46</u>
CHEM 223	Introductory Physical Chemistry 1 Course retirement 2 credits	<u>AC-20-47</u>
CHEM 243	Introductory Physical Chemistry 2 Course retirement 2 credits	<u>AC-20-48</u>

CHEM 283	Physical Chemistry Laboratory Course retirement 2 credits	<u>AC-20-49</u>
CHEM 493	Advanced Physical Chemistry Laboratory Changes: description, prerequisites, restrictions 2 credits	<u>AC-20-50</u>
CHEM 555	Magnetic Resonance Spectroscopy Changes: title, description 3 credits	<u>AC-20-51</u>

Prof. Blum described the above changes. The revisions were basically housekeeping in nature: retirement of courses no longer offered; change in title and description to better fit the courses as currently taught; as well as updating the prerequisites and restrictions.

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

The motion carried.

5) **COMPUTER SCIENCE**

New Course:

COMP 345	From Natural Language to Data Science 3 credits	<u>AC-20-52</u>
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Prof. Verbrugge introduced a new artificial intelligence-related course with an emphasis on natural language and processing. In addition, COMP 345 will be cross listed with LING 345 (Department of Linguistics).

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

The motion carried.

Course Revisions:

COMP 202	Foundations of Programming Changes in restrictions 3 credits	<u>AC-20-53</u>
COMP 204	Computer Programming for Life Sciences Changes: prerequisites, corequisites, restrictions, supplementary Calendar information 3 credits	<u>AC-20-54</u>
COMP 208	Computer Programming for Physical Sciences and Engineering Changes: prerequisites, corequisites, restrictions 3 credits	<u>AC-20-55</u>

Prof. Verbrugge explained that GEOG 333 (Introduction to Programming for Spatial Sciences) has been added to the list of mutually exclusive courses in the restrictions. Also, the prerequisites and corequisites were updated, and the supplementary Calendar information was clarified.

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

The motion carried.

COMP 424 Artificial Intelligence [AC-20-56](#)
 Changes in restrictions
 3 credits

Prof. Verbrugge said that the restriction was being added in reciprocity to the restriction added to ECSE 526.

Prof. Verbrugge **moved**, seconded by Mr. Bhutkar, that the above changes be approved.

The motion carried.

COMP 462 Computational Biology Methods [AC-20-57](#)
 Changes in restrictions
 3 credits

COMP 561 Computational Biology Methods and Research [AC-20-58](#)
 Changes in restrictions
 4 credits

The course restriction, COMP 562, has been removed in the above two courses since it has not been offered for many years, thus, enabling to use the course number for a new proposed course to be considered below.

Prof. Verbrugge **moved**, seconded by Ms. Waters, that the above changes be approved.

The motion carried.

6) **COMPUTER SCIENCE & MATHEMATICS & STATISTICS**
 New Double-Prefix Course

COMP 562/MATH 562 Theory of Machine Learning [AC-20-59/59A](#)
 4 credits

Prof. Verbrugge introduced a new double-prefix course that will be taught by a professor in the Department of Mathematics and Statistics, and a professor in the School of Computer Science. COMP 562/MATH 562 covers a more theoretical aspect of machine learning and it was being proposed because such a course was not currently offered at McGill.

In reply to a question, Prof. Verbrugge confirmed that the intent of the two units was to create a double-prefix course instead of a cross-listed course. In response to another question, Prof. Neslehova explained that the credit weight (4) reflected the higher workload to succeed in the course.

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

The motion carried.

7) **MATHEMATICS & STATISTICS**
 New Course & Affected Programs

MATH 462 Honours Mathematics for Machine Learning [AC-20-60](#)
 3 credits

Prof. Neslehova introduced a new course on the foundations of mathematics in machine learning and it will be taught by a new faculty member. The course had previously been offered as a 500-level topics course which included a high enrollment from undergraduate

students. The topics in the proposed course are not offered by the School of Computer Science.

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

The motion carried.

New Course:		
MATH 558	Design of Experiments	<u>AC-20-61</u>
	4 credits	

Prof. Neslehova presented a new course in experimental design to fill an important gap in the Department's statistics course offerings. Also, this course would serve as a mandatory requirement for the A.Stat. accreditation by the Statistical Society of Canada. MATH 558 will be taught by a new professor with expertise in experimental design.

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

The motion carried.

8) **EARTH & PLANETARY SCIENCES**

Course Revisions:		
EPSC 548	Igneous Petrogenetic Mechanisms	<u>AC-20-62</u>
	Change in course title	
	3 credits	

Prof. Galbraith said that the course title was being updated with the current nomenclature in the field of igneous petrology.

Prof. Galbraith **moved**, seconded by Prof. Haggard, that the change be approved.

The motion carried.

EPSC 542	Chemical Oceanography	<u>AC-20-63</u>
	Course retirement	
	3 credits	

Prof. Galbraith said the course was being retired because the instructor has retired, and that there are no plans in hiring a new professor in the field of chemical oceanography.

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

The motion carried.

9) **PROGRAM REVISIONS:**

- Minor in Chemical Engineering		<u>AC-20-64</u>
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Associate Dean Hundemer explained that the major changes to this 24-credit Minor in Chemical Engineering were the increase in the number of Required courses (from 6 to 18 credits), and the decrease in the number of credits (6) for the Complementary courses. These changes were due to the revisions of the undergraduate program in Chemical Engineering.

Associate Dean Hundemer **moved**, seconded by Mr. Bhutkar, that the program changes be approved.

The motion carried.

10) **Presentation for Discussion and Feedback**

- Ideas for Student-Taught Courses in Science

Vice-Dean Stephens said that a presentation by Mr. Rohan Bhutkar was concerning student-taught courses in Science that may be considered for introduction to our Faculty. The presentation at the current meeting was for discussion, feedback, and for information only.

Mr. Bhutkar said that the main goal of the project would be to fill in gaps at the undergraduate level. The proposals would be an opportunity for students to go beyond their programs as well as sharing their knowledge with other students. For example, there would be two upper-level courses (FSCI 401/402) which would be open to students who would have some expertise in a certain area that was not accessible to all Science undergraduates. FSCI 401 would be a course in pedagogy and course development (provided by T-PULSE), and FSCI 402 would be a practicum course in teaching their developed course. The third course, FSCI 121, would be a one-credit S/U option course which would be taught by students in FSCI 402. FSCI 121 would be open to all students and would allow students to delve into a topic in another discipline. An example of a timeline was presented for course approvals, registration, evaluation by T-PULSE, and mentors, as well as a list of topics covered in T-PULSE graduate courses. Mr. Bhutkar added that a similar course at the 500-level was offered at McGill (Faculty of Law), UBC, and other universities in the U.S. A survey had been conducted and so far, there were about 30 students out of 85 who were in favour of this initiative. In terms of Faculty support, a course coordinator would be involved for supervising the entire course. Mr. Bhutkar asked for comments and answered questions from the Academic Committee.

There was a lengthy discussion about (i) the amount of work involved in putting together a university-level one-credit course for both an undergraduate student and a Faculty member supervising the course; (ii) undergraduate students teaching and evaluating other undergraduates; (iii) the possibility of offering workshops instead; and (iv) that at American universities students are expected to take the prerequisite courses in their first two years and their electives in the final year, which is comparable to McGill's program requirements. Vice-Dean Stephens said that further matters need to be discussed with the Office of Science Education and the Faculty of Science, as well as with Associate Provost Christopher Buddle. He added that although there is a similar course at McGill, the Faculty of Law is a very specialized Faculty, and even though it may work in one faculty, it may not work in another faculty.

11) **OTHER BUSINESS**

There being no further business, Prof. Forest **moved**, seconded by Prof. Denis, that the meeting be adjourned at 4:20 p.m.

The motion carried.