Minutes of the meeting held on 12 December 2016, at 2:00 p.m. in the Rutherford Bell Room.

PRESENT: Associate Dean Tamara Western (Acting Chair), Director Nicole Allard, Professors Huy Bui, Melania Cristescu, Amy Blum, Anthony Mittermaier, Michael Langer, Michel Lapointe, Axel Hundemer, Andrew Cumming, Ana Nijnik, A.E. Williams-Joes, Anthony Ross Otto; Ms. Kathy Roulet, Ms. Natalie Waters, Ms. Jacqueline Chan

REGRETS: Dean Bruce Lennox; Professors Timothy Merlis, Thomas Duchaine, Michael Hendricks, Jeanne Paquette, Greg Marczynski, Barbara Hales, Caroline Palmer; Ms. Jasmine Leung, Mr. Gary Tom, Ms. Christina Kim, Ms. Therese Koch; Mr. Daniel da Costa, Ms. Elisabeth Sulmont

DOCUMENTS: AC-16-5, AC-16-28 to AC-16-49

Associate Dean Western welcomed everyone to the third Academic Committee meeting of the year, and called the meeting to order at 2:00 p.m.

(1) ADOPTION OF AGENDA

Associate Dean Western moved, seconded by Director Allard, that the Agenda be adopted.

The motion carried.

(2) MINUTES OF 22 NOVEMBER 2016

Associate Dean Western moved, seconded by Director Allard, that the Minutes be approved.

The motion carried.

(3) BUSINESS ARISING FROM THE MINUTES

MINOR IN NANOTECHNOLOGY

Associate Dean Western informed the committee that the Associate Dean in the Faculty of Engineering has agreed to undertake a mapping exercise to ensure that B.Sc. students who would want to enrol in this Minor are able to complete it. This was in response to Dean Lennox’s request that roadmaps be drawn up representing several scenarios in which students electing to pursue this Minor were able to complete it. She said she would bring the results of this exercise to the next Academic Committee meeting.

(4) BIOLOGY

BIOL 219 Introduction to Physical Biology of the Cell

New Course

4 credits

Professor Cristescu explained that this course was important for students in the interdisciplinary programs who need a basic grounding in cell and molecular biology, but have limited credit space and, as such, take fewer higher level courses in Biology than a student following a single biological or biomedical program.
In response to members’ questions, Associate Dean Western explained that BIOL 219 is meant to replace the essential aspects of BIOL 200 and BIOL 201 and that the creation of this course was done in consultation with the appropriate Biology professors who agree that BIOL 219 is a sufficient replacement for BIOL 200 and BIOL 201. Associate Dean Western also said that BIOL 219 will be restricted to only students in joint programs.

Associate Dean Western **moved**, seconded by Professor Cristescu, that the new course be approved.

**The motion carried.**

(5) **PHYSICS**

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<th>PHYS 329</th>
<th>Statistical Physics with Biophysical Applications</th>
<th>AC-16-30</th>
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<tr>
<td>New Course</td>
<td>3 credits</td>
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Professor Cumming explained that statistical physics is currently booming in biophysical sciences and that, as such, the Department of Physics proposes the creation of a new statistical physics course introducing classical concepts of statistical physics next to most modern examples of biophysics, where they naturally apply. He said that compared to a traditional statistical mechanics course, the focus is much more on kinetics rather than thermodynamics, with a much stronger "soft" component. While this is a physics course, it is naturally interdisciplinary, and will become an integral part of most of the current biophysics streams created in many departments (physics, chemistry and biology).

Associate Dean Western **moved**, seconded by Professor Cumming, that the new course be approved.

**The motion carried.**

(6) **BIOLOGY**

**Major in Biology - Quantitative Biology Option**

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Professor Cristescu explained that this revision combines two types of changes. She said the first is the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among multidisciplinary life-science programs. This includes that BIOL 200 and 201 are replaced with the more interdisciplinary BIOL 219, that BIOL 301 has been made a required course for both streams, that PHYS 333 is replaced with the more interdisciplinary PHYS 329. She also said that MATH 324 has been moved into the required list and that, as the prerequisites have been changed for the complementary course, COMP 251, its prerequisites MATH 235 and MATH 240 have been added to the complementary courses.

Associate Dean Western **moved**, seconded by Professor Cumming, that the program revision be approved.

**The motion carried.**

**Honours in Biology - Quantitative Biology Option**

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Professor Cristescu explained that this revision combines two types of changes. She said the first is the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among
multidisciplinary life-science programs. This includes that BIOL 200 and 201 are replaced with the more interdisciplinary BIOL 219, that BIOL 301 has been made a required course for both streams, that PHYS 333 is replaced with the more interdisciplinary PHYS 329. She also said that MATH 324 has been moved into the required list and that, as the prerequisites have been changed for the complementary course, COMP 251, its prerequisites MATH 235 and MATH 240 have been added to the complementary courses.

Associate Dean Western moved, seconded by Professor Cumming, that the program revision be approved.

The motion carried.

Joint Major in Biology & Mathematics AC-16-33

Professor Cristescu explained that this revision combines two types of changes. She said the first is the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among multidisciplinary life-science programs. This includes that BIOL 200 and 201 are replaced with the more interdisciplinary BIOL 219, that BIOL 395 has been added, and that BIOL 301 has been moved from the complementary course list to the required course list. Secondly, Professor Cristescu said the program title has been corrected to read Joint Major in Biology and Mathematics as that is more appropriate.

Associate Dean Western moved, seconded by Professor Hundemer, that the program revision be approved.

The motion carried.

(7) CHEMISTRY

Major in Chemistry - Biophysical Chemistry Option (New) AC-16-34

Honours in Chemistry - Biophysical Chemistry Option (New) AC-16-35

Professor Mittermaier said that, in order to fully capitalize on the large and ongoing investments in biophysical research and education made by many of the Departments in the Faculty of Science, the departments of Chemistry, Biology, Physics, Physiology, Math, and Computer Science have developed an integrated Biophysics undergraduate teaching and recruitment strategy. He further explained that, as part of this initiative, the Department of Chemistry is proposing a new Biophysical Chemistry Option for its Majors program. He said that the admissions standards are identical to those of the Regular Chemistry Major program. Finally, Professor Mittermaier said that Chemistry Department recently reviewed its programs and retired the BSc Liberal Program – Chemistry – Physical, which was underutilized but that all other programs in the Chemistry Department were found to have healthy enrollment.

Associate Dean Western moved, seconded by Director Allard, that the two new program options be approved.

The motion carried.

(8) COMPUTER SCIENCE

Joint Major in Computer Science & Biology AC-16-36

Joint Honours in Computer Science & Biology AC-16-37
Professor Langer said that this revision combines three types of changes. First, he said that the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among multidisciplinary life-science programs. This includes that, BIOL 200 and 201 are replaced with the more interdisciplinary BIOL 219, that COMP 499 is replaced by the similar, interdisciplinary BIOL 395, and that students are now given the choice between MATH 324 that is currently in the program and MATH 315 that is part of the common Bio-physical core. This affords students increased flexibility. Second, Professor Langer said that MATH 240 has recently become a co-requisite for COMP 251. He said MATH 240 is currently in the Complementary course list for this Joint Major CS/Bio program, but COMP 251 is in the Required list. The co-requisite change means that MATH 240 would effectively become a Required course. He said the Department therefore proposed to move MATH 240 from the Complementary list into the Required list. Lastly, Professor Langer said that BIOL 316 and BIOL 495 are removed from the complementary courses as both are likely to be discontinued in the near future. Finally, Professor Langer pointed out that the program title is corrected to read Joint Major and Joint Honours, as is more appropriate.

Associate Dean Western moved, seconded by Professor Langer, that the program revisions be approved.

The motion carried.

(9) PHYSICS

Major in Physics - Biological Physics Option (New) AC-16-38
Honours in Physics - Biological Physics Option (New) AC-16-39

Professor Cumming said that the Physics Department has recently hired several biological physicists, and there is a growing interest, among both students and faculty, in a program that prepares students of physics with the specific training required work in this exciting and rapidly expanding area. He said that, through conversations among students and professors, there is anecdotal evidence that we are currently losing many gifted students to similar biophysics/biological physics based programs at other universities in Canada. He therefore said that, using existing courses, we can create a Biological Physics Option that will give excellent preparation for this field, while still allowing continuation in other areas of physics. Finally, Professor Cumming said that the admission requirements are the same as the existing Major Physics program and that the Department of Physics has recently conducted a review of programs and is satisfied that there are no programs that need to be revised or retired due to low enrollment.

Associate Dean Western moved, seconded by Professor Cumming, that the two new program options be approved.

The motion carried.

(10) PHYSIOLOGY

Joint Major in Physiology & Mathematics AC-16-40

Professor Nijnik said that this revision combines four types of changes. First, she said that the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among multidisciplinary life-science programs. This includes that BIOL 200 and BIOL 201/BIOC 212 are replaced with the more interdisciplinary BIOL 219, the addition of interdisciplinary seminar course BIOL 395, and the addition of introductory programing courses as suggested as part of the Bio-Physical
Sciences core. Second, she said that, due to the significant neurophysiology content of both PHGY 311 and PHGY 314, students now are only required to take one of these two courses (moved to complementary list). Third, Professor Nijnik said that MATH 317 has been added as a new required course to give students greater background for upper level courses. Finally, Professor Nijnik said that the program title is corrected to read Joint Major, as is more appropriate.

Associate Dean Western moved, seconded by Professor Nijnik, that the program revision be approved.

The motion carried.

Joint Major in Physiology & Physics

Professor Nijnik said that this revision combines four types of changes. First, she said that the harmonization of the program organization with the new Bio-physical umbrella in order to better highlight the relationships and commonalities among multidisciplinary life-science programs. This includes that BIOL 200 and BIOL 201/BIOC 212 are replaced with the more interdisciplinary BIOL 219, that PHYS 333 is replaced with the more interdisciplinary PHYS 329, and the addition of interdisciplinary seminar course BIOL 395. She said that, due to the significant neurophysiology content of both PHGY 311 and PHGY 314, students now are only required to take one of these two courses (moved to complementary list). Finally, Professor Nijnik said that the program title is corrected to read Joint Major, as is more appropriate.

Associate Dean Western moved, seconded by Professor Nijnik, that the program revision be approved.

The motion carried.

(11) CHEMISTRY

CHEM 603 Fundamentals of Spectroscopy
Title, Description, Prerequisites
5 credits

Professor Blum said that students are very interested in a course on the fundamentals of spectroscopy, but that the very narrow focus on just vibrational spectroscopy does not reflect where the field and interest have moved over time. She therefore explained that the Department would like to broaden the focus a bit while retaining the aspects of the course that worked well.

Associate Dean Western moved, seconded by Professor Blum, that the course revision be approved.

The motion carried.

(12) GEOGRAPHY

GEOG 425 Southeast Asia Urban Field Studies
New Course
3 credits

Professor Lapointe said that a 3-credit field studies course is required to graduate with a major in Geography. He said that, to date, all geography field studies courses held
overseas or outside of Montreal (e.g. Panama, Barbados, etc.) focus on physical geography rather than human, and more specifically, urban geography. He added that Urban Studies is currently the most popular major in the Geography Department and while the department currently offers an urban field studies course (GEOG 494) that fulfills the field studies course requirement, it is based in Montreal. He explained that the proposed course seeks to offer the department's first opportunity for students to do an overseas field course with an urban focus. The proposed course would have space for about 12 students, and would last for 2 weeks, one week in Singapore and one week in Malaysia. He said that GEOG 494 is currently offered twice per year (once in the fall taught by Professor Kevin Manaugh and once in the summer taught by Professor Sarah Moser). He said that GEOG 425 Southeast Asia Field Studies would be offered every other May, alternating with the GEOG 494 Urban Field Studies summer course in Montreal. GEOG 425 would fulfill the field course requirement for Geography majors and is open to both Urban Studies majors and minors. Professor Lapointe said that prerequisites include GEOG 217 and GEOG 325 and that Geography majors who are not majoring in Urban Studies may take this course if they have completed the prerequisites. Finally, Professor Lapointe said that additional fees will be reviewed by the Fee Advisory Committee (FAC) on Dec. 14, 2016.

In response to Director Allard’s question as to whether minimum grades for prerequisite courses are allowed to be required, Associate Dean Western confirmed that they are.

Associate Dean Western moved, seconded by Professor Lapointe, that the new course be approved.

The motion carried.

GEOG 504   Advanced Economic Geography AC-16-44

Professor Lapointe said that the existing course name (Industrial Restructuring: Geographic Implications) reflects the main theme of economic geography back in the 1980s. He said that the discipline has changed significantly since then and the new, more simple title of 'Advanced Economic Geography' reflects the fact that we have moved on to other things than 'industrial restructuring'. He said the course will deal with more contemporary topics, debates and concepts in economic geography such as evolutionary economic geography, innovation and technological change, global production networks and geographies of inequality.

Associate Dean Western moved, seconded by Professor Lapointe, that the course revision be approved.

The motion carried.

Major in Geography AC-16-45

Professor Lapointe said that this Major has not been substantially changed since its creation over 20 years ago even though, in the last 10 years, many relevant new courses have been created, in Geography and other units, that cover highly relevant and program related topics in Sustainability Science, Earth System Science and human environment interactions at various scales. He said the changes to this program have 2 objectives: first, to broaden the program foci by adding to the program 15 credits in 2 new complementary blocks, including a selection of geography courses focusing on human-environment interactions as well as courses offered in other partner units on Sustainability, Earth System, Environment Sciences and second, to allow increased flexibility in student's training interests, by reducing the number of required core courses from 22 to 13 credits
and increasing complementary credits from 36 to 45. Finally he noted that the total credits in the Major are unchanged.

Associate Dean Western moved, seconded by Professor Palmer, that the program revision be approved.

The motion carried.

(13) EARTH & PLANETARY SCIENCE

Major in Earth and Planetary Sciences (Retirement) AC-16-46
Honours in Earth Sciences (Retirement) AC-16-47

Professor Williams-Jones said that a revision of this both programs were approved in 2015, and the two versions now appear in the calendar. He added that since the last cohort admitted to this program is now in its graduating year, it is timely to formally retire both of these programs.

Associate Dean Western moved, seconded by Professor Williams-Jones, that the program retirements be approved.

The motion carried.

(14) McGILL SCHOOL OF ENVIRONMENT

B.Sc. Program Changes
Major in Environment – Earth Sciences & Economics Domain AC-16-48

Ms. Kathy Roulet said that these are minor revisions to bring course sets up to date.

Associate Dean Western moved, seconded by Ms. Kathy Roulet, that the program revision be approved.

The motion carried.

B.A. Program Changes (For Information)
Faculty Program in Environment – Economics & the Earth’s Environment Domain AC-16-49

Ms. Kathy Roulet said that these are minor revisions to bring course sets up to date.

(15) SUS ACTIVIES

There were no SUS activities reported.

(16) OTHER BUSINESS

There being no further business, the meeting adjourned at 2:45 p.m.