

College of Science and Mathematics Senate Meeting

Monday, April 10, 2023

2:30 PM – 4:00 PM

Virtual Meeting Using Zoom

<https://umassboston.zoom.us/j/99008155577>

Meeting ID: 990 0815 5577

Passcode: CSMSenate

Agenda:

1. Approval of the March 20, 2023, meetings minutes
2. Announcements
3. New business

a ***Motion to approve tabled item - graduate course description change of BIOL - 646 - Disease Ecology***

Catalog description: This graduate seminar (along with the optional lab BIOL 647) will focus on current ecological theory in disease ecology. Ecological and evolutionary topics discussed in class will partially represent student interests and may include core microbiome analysis, evolution of symbiosis, comparative germ-free and gnotobiotic studies, historical contingency and co-infection in symbiont establishment, host development and colonization resistance, immunomics, or host immunity vs environmental determinants of symbiotic communities. This seminar will be taught alongside the optional data analysis lab BIOL 647. Students can sign up for either course separately or both together.

Originator comments: Changed from Seminar to Lecture, because a mistake was made and this is actually a lecture course for 3 credits.

Department Chair comments: We are correcting an error in the original proposal, which listed this as a seminar course. It should be listed as a lecture course, consistent with other graduate courses in the Biology Dept.

*Requested change is “superficial” so won’t go through Academic Affairs Committee.

b ***Motion to approve tabled item: changes to Biology PhD – Environmental Biology Track***

Previous PhD requirements included one course that all students took (3 credits), 9 additional credits selected from a subset of environmental biology (EB) graduate courses, 12 credits of elective courses plus 4 Current Literature courses (Total = 28 credits). We have changed those requirements to three core courses (7 credits) that all students take plus 21 elective credits selected from all 600-level biology graduate courses (Total = 28 credits). Four of the elective credits should be from 1-credit Current Literature courses, similar to our previous requirements. Major changes and their justifications are listed below.

1) Altered the core courses required for a PhD. The committee felt strongly that in addition to the previous core requirement of Biol 650 Scientific Communication, all Environmental Biology PhD students should be well versed in contemporary biostatistical techniques and experimental design. Experience with the fundamental statistical techniques (experimental design and statistics) used by ecologists and evolutionary biologists will make it easier to cover advanced topics in other graduate courses and better prepare our students to be successful in their fields. To achieve those skills we have added two other courses to the core, Biol 607 Biostatistics and Experimental Design, and Biol 617 Biostatistics and Experimental Design Laboratory.

2) Removed the 9 credits of additional core courses required from a select subgroup of EB graduate courses. Instead, 21 credits will be elective with 4 of those selected among the Current Literature courses. The committee felt that given the diverse research of the EB faculty and student backgrounds, our students would be better served by allowing them (along with their Advisor and dissertation committee) the flexibility to choose among the remaining 600-level graduate courses offered in Biology. This allows the students and their committees to tailor a set of courses that best meets the needs of a particular student based on their backgrounds and their research interests. This change also reduces the common problem that core courses are no longer taught because a faculty member is no longer teaching the course or has retired, and allows new courses added to the suite of 600-level courses to be used to fulfill PhD requirements.

3) We revised the original list of research topics to reflect new faculty hires and retirements.

PhD program and 4-year plan are attached to this agenda.

Academic Affairs Committee comments: The AAC approved the revision, after discussion about the sustainability of implementing the new requirements so that students' progress in the degree would not be delayed. We recommend that, prior to the CSM Senate consideration of the proposal, the department/program submit additional information to include the planned frequency of offering BIOL 607/617, as well as a list of instructors who can be assigned to teach those courses.

c ***Motion to approve new undergraduate course BIOL 376 – Virology (3 credits)***

Catalog description: Viruses are everywhere and are the most abundant inhabitants of the biosphere. In this course, students learn what makes viruses biologically successful, how viruses adapt to dynamic environments, and how viruses respond to host defenses such as immunity and the microbiome. This course provides a foundation for virology with a focus on medically important viruses. Students explore the following concepts: virus classification, the infectious cycle, viral genomes and coding strategies, viral discovery, virus structure and function, host responses to infection, and virus transmission. The course emphasizes hands-on, experiential learning, including gaining experience in tools for viral discovery and epidemiological outbreak investigation. By taking this course, students

advance their skills and understanding of virology, molecular biology, bioinformatics, emerging infectious disease, and global health.

Pre-Requisite or Co-Requisite: BIOL (210 or 212) and (252 or 254)

Syllabus and Rationale are attached to this agenda.

AAC comments: The CSM AAC unanimously approved the proposal to add the new course BIOL 376 - Virology.

4. Dean's office
5. Other Business
 - a Senate members for 2023-24 academic year
6. Adjourn