Agenda - Feb 23, 2015 - CSM Senate Meeting

Date: Monday, February 23rd, 2015
Time: 2:30pm - 4:00pm
Location: CSM Dean's Office Conference Room

Agenda:

1. Approval of the November 17, 2014 meeting minutes.
2. Announcements
3. New business
   3a. Revision of EEOS 121 - Intro to EEOS Lab. Changes in course description and requirements.
       **Motion:** To pre-approve the revision of EEOS 121 - Intro to EEOS Lab: change in description and requirements.
       **Rationale:** We request a change in the course description to reflect the fact that we no longer have a lab session on GPS/GIS. In addition, we need to make it clear to students before they enroll that they will need to bring a laptop computer (with Excel and MSWord software) to each and every lab in order to work with the data collected in each lab. This 1-credit lab course is required for all EEOS majors.

   3b. Addition of EEOS 313 - Oceans and Human Health.
       **Motion:** To pre-approve the addition of EEOS 313 - Oceans and Human Health.
       **Rationale:** This course adds to the interdisciplinary undergraduate offerings in the EEOS department, and directly addresses our aim to provide a firm basis of interdisciplinary training for our undergraduate students. It strengthens the 300-level offerings in the Marine Sciences track of the Environmental, Earth and Ocean Sciences undergraduate degree. Finally, the course was developed to meet an entirely new, emerging discipline in the environmental sciences - the interactions between ocean health and human health. These interactions can best be addressed from an interdisciplinary perspective (combination of social and natural sciences). The primary goal of the course is to introduce students to the myriad of current issues that make up the emerging field of Oceans and Human Health, and to provide them with the necessary background knowledge needed to understand these issues.

   3c. Addition of EEOS 325 - Introduction to Biological Oceanography.
       **Motion:** To pre-approve the addition of EEOS 325 - Introduction to Biological Oceanography.
       **Rationale:** This course will add to the marine science concentration and provide the basis for higher level courses in marine science. Within the School for the Environment, we are developing a marine science track. Biological Oceanography provides fundamental knowledge for students wishing to pursue careers in marine science. Inherent in biological oceanography is an interdisciplinary thinking that forces students to incorporate knowledge from biology, chemistry and physics. Interdisciplinary thinking is central the School for the Environment, as such this course will provide that training in the natural sciences. This course will be an upper level elective for undergraduate students in the school for the environment..

       **Motion:** To pre-approve the addition of EEOS 422 - Introduction to Zooplankton Ecology.
       **Rationale:** A graduate course on zooplankton ecology is on the books. This would make an undergraduate course that would be offered in conjunction with the graduate course.
3e. **Addition of MATH 420 - Introduction to Combinatorics.**  
**Motion:** To pre-approve the addition of MATH 420 - Introduction to Combinatorics.  
**Rationale:** This course provides a foundation for discrete structures and techniques, providing a unifying theme and a collection of applicable concepts and methods.

3f. **Addition of MATH 448 - An Introduction to Statistical Learning.**  
**Motion:** To pre-approve the addition of MATH 448 - An Introduction to Statistical Learning.  
**Rationale:** Statistical Learning is a fundamental tool of computational data analysis with applications across the sciences.

3g. **Addition of MTT 570 - Foundations of Arithmetic for K-8 Teachers.**  
**Motion:** To approve the addition of MTT 570 - Foundations of Arithmetic for K-8 Teachers.  
**Rationale:** This course is designed to provide preservice and inservice teachers the opportunity to study and learn the foundations of elementary arithmetic, and how these concepts provide the core of algebra and higher level mathematics. Studies over the last two decades have suggested that while many teachers may have a specific type of mathematical knowledge, they often lack what can be described as a deep understanding of fundamental mathematics - a deep recognition and appreciation of basic mathematical ideas. In fact, a study by Adler and Davis (2006) suggested that teachers often compress and abbreviate mathematical knowledge. This situation is particularly problematic within the context of teaching practice, since helping students unpack mathematical knowledge can provide critical entry points through which students gain understanding, and therefore is necessary for teaching.

3h. **Addition of CHEM 654 - Biological Chemistry.**  
**Motion:** To approve the addition of CHEM 654 - Biological Chemistry.  
**Rationale:** Chem 654 will extend the scope and course offerings of the Chemistry Graduate Program. Understanding the chemical concepts of life processes became essential for all scientist regardless of their specialization. Many of our current graduate students never took biochemistry or their knowledge is outdated which does not serve them well in interdisciplinary collaborations. This proposed course is intended to fill this gap covering the fundamentals, as well as, advanced concepts of the topic. It complements the core courses in the recently added Biological Chemistry track of the graduate curriculum.

3i. **Addition of the Computational Sciences Graduate Program (CSCI), with tracks in Data analytics, Bioinformatics, and Computational Physics.**  
**Motion:** To approve the addition of the Computational Sciences Graduate Program (CSCI), with tracks in Data analytics, Bioinformatics, and Computational Physics.  
**Rationale:** The proposed program is intended to coordinate and promote computationally-based research, to foster computational science education and to provide for the expansion of computational resources and support at UMB. It is intended that faculty and graduate students involved in computational science-related projects in different departments at UMB will participate in the CSCI program.

The program will build on the existing strong scientific collaborations that already exist among the faculty that belong to several departments of the college. CSCI is intended to provide a forum for the multidisciplinary exchange of ideas among researchers, educators and students. Regularly scheduled seminars and symposia will be offered to highlight advances in computational science. The CSCI program will act to develop and facilitate the formulation of projects in computationally based research and education, working with scientists from multiple different departments and centers within UMB.

The program will enhance UMass Boston's national and international reputation through building on strong, already existing programs with very positive local, national, and international
reputations.

4. Other business.
5. Adjourn.