Minutes - Sep 15, 2014 - CSM Senate Meeting

Date: Monday, September 15th, 2014
Time: 2:30pm - 4:00pm
Location: CSM Dean's Office Conference Room

Members in attendance:

- Catalin Zara, Mathematics, Chair
- Chandra Yelleswarapu, Physics, Secretary
- Ping Chen, Engineering
- Wei Ding, Computer Science
- Michelle Foster, Chemistry
- Robert Stevenson, Biology
- Manickam Sugumaran, Biology
- Juanita Urban-Rich, School for the Environment

Others in attendance:

- Andrew Grosovsky, Dean, CSM
- Marietta Schwartz, Associate Dean, CSM
- Eric Grinberg, Chair, Mathematics Department

Meeting was called to order at 2:35 pm.

1. Introduction of new members
   New representatives for AY 2014-2015:
   - Wei Ding (CS), replacing Bob Wilson
   - Ping Chen (Engineering), representative for the newly created Department of Engineering.

2. Elections.
      Catalin Zara has been unanimously re-elected as the Chairman of the CSM Senate for AY 2014-2015.

      Chandra Yelleswarapu has been unanimously re-elected as the Secretary of the CSM Senate for AY 2014-2015.
3. Approval of the May 12, 2014 meeting minutes.
   A motion to approve the May 12, 2014 meeting minutes was seconded and approved unanimously.

4. Announcements

   - The 15 cross listed UPCD courses are still pending as their One Forms are yet to be received from the department.
   - The AAC had an additional meeting in May 2014 to discuss proposals regarding undergraduate CSM courses. All the courses, except EEOS 488, were approved. The AAC requested some clarifications about EEOS 488 and the department's response is pending. All other proposals were approved by the Provost's Office.
   - The Faculty Council approved the EEOS 603, 604, 607, 645, 799 and 899 courses. EEOS 688 has been sent to the Graduate Studies Committee of the Faculty Council.
   - The Scholarship Committee selected 2 students for Litton scholarships and 4 students for Brann scholarships for the year 2014-15. The nominations were sent to the Dean.

5. New business

5a. College Personnel Committee 2014-2015
   Chandra Yelleswarapu recused himself from the discussion and vote. The Dean's nominations for the 2014-2015 CPC have been unanimously ratified.

5b. Revision of ENGIN/MATH 211L, Change in pre-requisites.

   **Motion:** To pre-approve the changes in pre-requisites for ENGIN/MATH 211L.
   
   **Rationale:** Currently ENGIN 104 is a pre-requisite and MATH 242 is a co-requisite for ENGIN/MATH 211L. The co-requisite of MATH 242 is now replaced by a pre-requisite of MATH 141. Basic multivariable calculus concepts needed in ENGIN/MATH 211L will be covered as needed. We are dropping Engin 104 as a prerequisite to allow transfer students with adequate math background to enroll in this course. Engin 104 has no specific contents required for advancement into subsequent Engin 211.

   A motion to pre-approve proposed changes in pre-requisites of ENGIN/MATH 211L was seconded and unanimously approved by the Senate. The proposal will be sent to the Academic Affairs Committee.

5c. Addition of EEOS 109 - Cultural Geography.

   **Motion:** To pre-approve the addition of EEOS 109 - Cultural Geography.

   **Rationale:** Cultural geography is a sub-discipline of Geography that studies how places produce diversity as well as the spatial variation of cultures, human activities, and communities. It is based on the notion that place, or location, is the foundation of cultural differences on global, national, and regional levels. Basic geographical perspectives, principles, and tools will be taught to so that students will understand why cultural differences occur where with the goal of better understanding the world's many cultural differences. Students will learn how cultural geographers perceive culture and other human activities as both responses to and causes of changes in natural and social environments.
A motion to pre-approve the addition of EEOS 109 was seconded and unanimously approved by the Senate. The proposal will be sent to the Academic Affairs Committee. After the approval by the Dean's office, it will be sent to distribution committees.

Approval of new graduate MATH courses. The following courses are to be part of the requirements for the proposed PhD in Computational Science as indicated in the "Proposal to Establish an Interdisciplinary Program in Computational Science" within the College of Science and Mathematics.

Items 5d01-5d11 were considered together. The Senate considered the concerns that the Mathematics Department is proposing graduate level courses without having a graduate program at this time. These courses are offered in support of a newly proposed Ph.D. program and the Mathematics Department has the competency to offer courses at that level. The Senate mandated the Chair to address further concerns from the GSC and to make minor presentation changes, should such changes be requested.

5d01. Addition of MATH 620 - Combinatorial Analysis.
Motion: To approve addition of MATH 620 - Combinatorial Analysis.
Rationale: This course provides a foundation for discrete structures and techniques that are salient throughout computational science, providing not only a unifying theme, but also a collection of highly applicable concepts and methods.

5d02. Addition of MATH 625 - Numerical Analysis I.
Motion: To approve addition of MATH 625 - Numerical Analysis I.
Rationale: This course introduces the essential ideas and computational techniques that modern scientists or engineers will need in order to carry out their work. In most scientific modeling projects, investigators have to deal with very large systems of linear equations, understanding of which requires powerful computers, and a firm understanding of the vast number of existing pertinent algorithms.

5d03. Addition of MATH 626 - Numerical Analysis II.
Motion: To approve addition of MATH 647 - Probability Models.
Rationale: This course introduces the essential ideas and computational techniques that modern scientists or engineers will need in order to carry out their work. In most scientific modeling projects investigators have to deal with very large systems nonlinear equations, understanding of which requires powerful computers, and a firm understanding of the vast number of existing pertinent algorithms.

5d04. Addition of MATH 640 - Computational Algebraic Topology
Motion: To approve addition of MATH 640 - Computational Algebraic Topology.
Rationale: Algebraic topology has given rise to cutting-edge methods of data analysis that are of much current interest. Implementing these in the context of high-performance computation can provide students with powerful analytic tools of wide applicability in the biological and physical sciences and beyond.

5d05. Addition of MATH 642 - Probabilistic Simulation.
Motion: To approve addition of MATH 642 - Probabilistic Simulation.
Rationale: This course introduces the essential ideas and computational techniques that the modern scientists or engineers will need in order to carry out their work. In most scientific
modeling projects investigators have to generate data and probabilistic tools for understanding stochastic models.

5d06. **Addition of MATH 647 - Probability Models.**

**Motion:** To approve addition of MATH 647 - Probability Models.

**Rationale:** Probability modeling has important applications in computer science, engineering, economics, and biology and has been used for market research, optimization problems, machine learning, and biomodeling. Many other universities offer this course on a regular basis too.

5d07. **Addition of MATH 648 - Statistical Learning.**

**Motion:** To approve addition of MATH 648 - Statistical Learning.

**Rationale:** Statistical Learning is a fundamental tool of computational data analysis with applications across the sciences.

5d08. **Addition of MATH 673 - Structure and Dynamics of Complex Networks I: Structural Properties**

**Motion:** To approve addition of MATH 673 - Structure and Dynamics of Complex Networks I: Structural Properties.

**Rationale:** This course on complex networks is intended for graduate students in the Computational Sciences PhD program with backgrounds in mathematics, physics, biology, computer science or engineering who wish to learn about the major ideas and techniques developed in, and the results recently discovered in, one of the most important interdisciplinary research fields.

5d09. **Addition of MATH 674 - Structure and Dynamics of Complex Networks II: Dynamical Processes**

**Motion:** To approve addition of MMATH 674 - Structure and Dynamics of Complex Networks II: Dynamical Processes.

**Rationale:** This course on complex networks is intended for graduate students in the Computational Sciences PhD program with backgrounds in mathematics, physics, biology, computer science and engineering who wish to learn about the major ideas and techniques developed in, and the results recently discovered in, one of the most important interdisciplinary research fields.

5d10. **Addition of MATH 677 - Symbolic Computation**

**Motion:** To approve addition of MATH 677 - Symbolic Computation.

**Rationale:** Symbolic computation is an essential part of scientific computation. Topics such as large integer multiplication and sparse matrix and polynomial operations are necessary for many practical applications of mathematics.

5d11. **Addition of MATH 680 - Introduction to Computational Algebraic Geometry.**

**Motion:** To approve addition of MATH 680 - Introduction to Computational Algebraic Geometry.

**Rationale:** This course introduces computational aspects of algebraic geometry - an active and growing field with applications to robotics, computer aided design, automatic theorem proving, invariant theory, projective geometry, computer vision, and more.

A motion to approve the new Math graduate courses (620, 625, 626, 640, 642, 647, 648, 673, 674, 677, 680) was seconded and approved unanimously.
6. Dean's announcements
   Dean Grosovsky discussed about the increasing popularity of the Freshmen Success Program. The program is in its 6th year now and about 800 students have gone through the program so far. The students have higher GPA and the graduation rate is at 60%, above the campus-wide rate of 40%. Currently about 300 students are enrolled into this program.

   Extramural funding is up by 30% in the last 7 years, constantly increasing every year. A quarter of the university's external funding is from CSM.

7. Other business
   The was no other business.

8. Adjourn
   A motion to adjourn was seconded and approved unanimously. The meeting was adjourned at 3:45 pm.