

ECE Curriculum Committee Meeting Minutes for October 22, 2009

Members present: Tanguil Basar, Stephen Bishop, Donna Brown, Todd Coleman, Lynford Goddard, Douglas Jones, Erhan Kudeki, Stephen Levinson, Steven Lumetta, Sean Meyn, Michael Oelze, Nitin Vaidya

Guests: Greg Timp

1. The Minutes of the October 15, 2009 meeting were approved with minor corrections.
2. Greg Timp joined the Committee to answer any questions regarding his proposed ECE 471: Systems Biology for Engineers course. He said it presents a systems, input/output oriented description of how cells work, including cell metabolism and various forms of chemical signaling such as protein-protein interaction and their control mechanisms. He stated that many other leading schools around the country are starting to introduce similar material into their electrical engineering curricula. He has over four hundred pages of supplemental course notes that enable students to learn the material from this unique perspective.

Greg was asked whether either a control systems course or a microbiology course should be listed as prerequisites. Greg noted that a slight majority of his students are from non-engineering majors such as Animal Science and Biophysics, that it is an important goal of the course to introduce systems engineering concepts to such students, and that such prerequisites might limit the audience. He said he teaches just enough biochemistry and cellular biology and control systems concepts as needed to illuminate the concepts, and that he has found the Chemistry 102 and Math 285 (Differential Equations) prerequisites sufficient in practice. He mentioned a sophomore EE student who successfully completed the course as confirmation that these prerequisites are sufficient and that motivated undergraduates can easily complete the course.

Greg and the Chair noted the enthusiastic support of the Bioengineering department. Greg felt that several other faculty in the College, such as Peter Wang, could easily teach the course, but he said that he intends to teach it for a few more years as he develops the course notes. Steve Lumetta asked whether biology-oriented departments in other Colleges might object to an ECE incursion; Greg said an important purpose is to serve students from these departments as well, and that he has been in contact with faculty there to promote their interest and support.

Several members of the Committee suggested that he might consider offering a four-hour option with extra work for graduate students, which might make it more attractive for them. Others suggested just making it four credit hours for all students, or giving all students the option; the Committee authorized Greg to decide as he best sees fit.

ECE 471: Systems Biology for Engineers, was approved pending minor changes in the documentation.

3. The Curriculum Committee approved the ECE 109 new course proposal.
4. The Committee adjourned at 1:53 PM.