CCGB Meeting Agenda, April 17, 2009

1. Approval of minutes
2. Undergraduate announcements
3. Motion about the terminal math course substitution
4. Consideration of ENGRC 350 as liberal studies in the LA category

CCGB Minutes, March 27, 2009

Ex-Officio: K. Dimiduk, L. Schneider, F. Shumway
Other: B. Howland, M. Hutson, N. Peterson, C. Pakkala

Approval of Minutes: The minutes of the 3/6/09 CCGB Meeting were approved as written.

Undergraduate Announcements: D. Gries said that the changes to good standing and affiliation criteria take effect with the incoming classes; the current students are grandfathered in.

F. Shumway said that there will be changes to Math 2940; the Math Department is cutting a number of lectures. She requested that people let her know which lecture times work best for their departments.

Discussion of criteria for math and science substitutions: D. Gries and L. Lee presented Proposed Guidelines for Approving Terminal Math Courses from the Math and Science Committee of the CCGB. They proposed that the following rules be used by the CCGB to approve the terminal math course: 1. That the terminal 3-4 credit math course be numbered at the 3000 level or above. If the course is NOT offered by the Math Department, the Major must present evidence that it is rigorous and advanced. 2. Once a terminal math course is approved by the CCGB for a Major, any other Major may allow it without again seeking CCGB approval. 3. Existing approved substitutions remain approved. 4. The CCGB may approve a terminal math course with a 2/3 vote even if Point 1 is not satisfied.

The proposed rules for the terminal physics course are the same as for the terminal math course, EXCEPT that there is an additional point: A necessary requirement for a 3-4 credit science course to be used as a substitute for the terminal physics course is that it be numbered at the 2000 level or above AND arguments must be made that it is an advanced course. An introductory course with no college-level prerequisites will not be approved as a substitute.

L. Pollack said that Point #4 does away with point 1. So, for #3 under the rationale in Gries’ proposal, Math 2930 and 2940 are already approved. Not all 3000 level courses would satisfy her prerequisite. Point #4 could be the resolution. A. Ruina said that it seems that the reason for #1 is that the PRECHLE (PRErequisite CHain LENgth) was too restrictive. It would be a friendly amendment to have an OR statement in the proposal to say that certain classes can be included as well as PRECHLE courses. We should be inclusive. D. Gries said that he didn’t think that the PRECHLE had anything to do with rigor. S. Baker said that he likes the suggestion of level of rigor in 2000 courses; not a statement that rigor is expected. A statement about a level of rigor equivalent to or above would be good.

M. Louge wondered whether we focused too much on detail and forgot the big picture. The underlying issue is whether we remain committed to provided breadth in our curriculum, which is what the CCGB was created to uphold. Modern engineers should have sufficient breadth to be in a position to change their career focus as technology and opportunities evolve. The natural tendency of College majors is to replace courses of general interest with prerequisite courses for their own curriculum, a trend that is not in the long-term best interest of students. Instead this tendency amounts to the "balkanization" of Col-
lege majors. L. Lee said that in CS they are interested in the students having probability, and she thinks that every Engineering student should take that. If deciding that every student should have it, that would not be balkanization. M. Louge stated that, because the last physics course is meant to insure breadth in fundamental knowledge, no major should be allowed to replace it by a course covering material normally taught within the same major. Instead, it could be replaced by a fundamental course from another unrelated science field. For example, CS should not be allowed to replace the last physics course by an introduction to discrete math. However, in the spirit of breadth, ME should be allowed to do so, if it asked, or to substitute biology. D. Gries said that students may not need the last physics course, but they may need biology or statistics. Engineering has broadened so much that different fields have different bases; there is no way around that. We want to allow more flexibility for our students.

L. Pollack stated that if we allow a major to substitute for the terminal math or science course, it allows majors to move into the 2-2 semester. We need to re-evaluate whether the common curriculum needs to be there or not, but there are more pressing issues in the college. A. Ruina asked whether the Common Curriculum is broad enough to serve all engineers. Once the CCGB approves a course for all majors, it addresses half of the balkanization issue. The second half of balkanization is students having the choice of a major and when they get that choice. This seems the deeper issue. We need to rationalize the rules before making a decision. Approving a terminal math course substitution for a major (and thus all majors) AND allowing a substitution for a terminal physics course for all majors are the most important issues.

E. Fisher suggested that it would be worthwhile to develop verbiage to think about for course substitutions. She questioned the positive reason for course substitutions.

S. Baker said that when the Engineering faculty members were surveyed, they came up with a philosophy of college: that Engineering students need a common basis/language. We do have a set of boundary conditions and a set of physical sciences departments for whom the basis is clear, but other departments are better served with discrete math. Departments were given a fixed four-year budget of courses, and the only way to make substantial changes to the curriculum would be to take at least a full semester of courses from the majors. This is an insurmountable boundary condition. What our customers value is our focus on rigor. Students need to have the rigor for whatever course best prepares them for the rest of their curriculum. We need people who can solve problems at a high level. In order to get to the level of depth and breadth in a field, you need to know how to get there.

E. Fisher said that the faculty has approved the right of majors to allow substitutions for the terminal math and physics courses; it was a close vote. A. Ruina said that he feels this is an incremental step and doesn’t allow for pre-requisites by one department. There should not be individual substitutions by individual departments.

M. Louge said that it is a question of depth vs. breadth. We need to determine which of them our students deserve. The principle of breadth is under stress. The wording in the legislation should be clarified.

L. Pollack stated that she has no problem with substitutions for math; she does have a problem with math being substituted for science. She would be strongly opposed to having an economics course in the common curriculum. We need to be very careful about this. D. Gries said that a major can choose not to use a substitution. The issue of substitutions should rarely arrive at the table.
S. Baker said that he would be happy if #1 said that goal is that a math course had similar or higher rigor to Math 2940. A. Ruina suggested that the word advanced be used to replace rigor.

E. Fisher said that D. Gries will bring back another version of this and hopefully it will help guide discussions. A. Ruina said that he feels that L. Pollack and D. Gries should work on this together and bring it back to the CCGB.

The meeting adjourned at 8:58 a.m.