CCGB Meeting Agenda, March 6, 2009

1. Approval of minutes
2. Undergraduate announcements
3. Description of current arrangement for engineering involvement in the teaching of the math sequence (Ruina)
4. Further discussion of criteria for evaluating math and science substitutions proposed by majors (Pollack, Gries).
5. Possibly: initial discussion of a resolution supporting engineering involvement in the teaching of the math sequence (TBA).

CCGB Minutes, February 20, 2009

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

Approval of Minutes: Approval of the minutes of the 2/6/09 CCGB Meeting has been postponed until the next CCGB Meeting.

Undergraduate Announcements: D. Gries said that he called Paul Chirik about TAs in chemistry. P. Chirik said they are not getting rid of TAs. However, because of the budget cuts there will be changes in Chemistry, but he doesn’t want to say anything until the changes have been formally announced. We’ll wait and see. Most of our students take CHEM 2090 in the fall and not in the spring, and Chemistry has trouble balancing the TAs.

D. Gries said that he emailed Peter Lepage twice, and he said that they are forming a committee to investigate small section math. CCGB will need a representative on that committee. A. Ruina said that teaching math in Engineering seems to be a big issue and people in the Math Department care about it. There is a possibility that the ARTS College might want to reclaim math from engineering, so it might be important for the CCGB to weigh in on this. M. Louge said that the consensus of the MAE/TAM transition committee is that the teaching of math be the combined responsibility of TAM and MAE. D. Gries said that the workshop recitation section should continue—it is an important part of Math 1910. Engineering pays a lot for small section math courses. A. Ruina said that small section math AND math 2930 and 2940 need to be addressed; they have different histories, money flow and politics. E. Fisher said that the staffing of small sections AND keeping small section math in Engineering are both important. A straw vote taken was unanimous to develop a proposal. She and L. Pollack will work on developing a committee.

B. East stated that a group of universities in France are putting together a master’s degree in nuclear science. They will teach courses in English. This will be announced in the Sundial. E. Fisher said that Bing Cady and David Hammer might be interested in this.

Discussion of a proposal from the Math and Science Committee on criteria for evaluating math and science substitutions proposed by majors: L. Pollack stated that the Math and Science Committee includes her, A. Ruina, J. Cisne, K. Dimiduk, and M. Duncan. She presented the proposed guidelines for math and science substitutions from the committee.

The guidelines were proposed because past substitutions illustrated ambiguity. The charge to the committee was to draft a set of criteria or principles to be used when approving or disapproving requests from departments for substitutions for Physics 2214, Math 2930 or Math 2940.
Rules to interpret: CCGB can approve substitutions of an advanced science course or a fifth math course of equal rigor and at least 3 credits for terminal physics course, Physics 2214. CCGB can approve term math courses for a major. Current requirement is Math 1910, 1920, 2930 or 2940.

Three resolutions were proposed.

Resolution 1: A science course can be substituted for Physics 2214 if it has two college level science pre-requisites for it. A math course can be substituted for Physics 2214 if it has three college level math pre-requisites for it. A course may be substituted for the terminal math course if it has two college-level math prerequisites -- i.e. the same number of math prerequisites as Math 293 and Math 294.

Resolution 2: Substitutions will be allowable for all majors (although majors may restrict the use of substitutions in their major).

Resolution 3: All existing substitutions are exempt from the new guidelines.

A. Ruina stated that there are two issues for the CCGB: Making sure that all engineers have a math and science core background. The core courses should be independent of the major requirements.

D. Gries said that rigor is a matter of mathematical proof. A student can take a course in sociology and not find anything rigorous in it. We don’t want to base a motion on a bad definition of rigor. K. Dimiduk said that a reason for this proposal was to prevent students who enter Cornell with all AP courses from getting out of science courses at Cornell. This was a reason for the pre-requisites in the acceptable courses. L. Pollack said that any proposed substitutions have to come to a discussion by the CCGB.

L. Pollack stated that the Engineering Handbook doesn’t need to change. Students will not see these criteria, but the CCGB needs to decide what is acceptable. Majors will be making requests for substitutions. This won’t get people to totally re-evaluate what they’re doing but will perhaps make them more thoughtful about what courses they propose. A. Ruina said that the function of the CCGB is to decide the basic core of science and math for students graduating from Engineering at Cornell. This definition should have nothing to do with what a major does. It shouldn’t matter to the CCGB what the students intend to do in the future; the core is important. There are 3 important things: preservation of the core for all, preservation of flexibility, and having clear, simple rules.

E. Fisher said that if we adopt these criteria we likely won’t be approving many substitutions because few courses will meet the criteria. L. Pollack said that a number of courses that can be used as substitutes for the fourth math course. The intent is for students to take gradually more advanced courses. R. Bland said that the wording on math substitutions would embrace a huge number of engineering courses. Maybe a sentence should be added to the proposal about the breadth and scope of a course.

E. Fisher stated that discussion of this proposal will be put on the agenda for next time. L. Pollack thanked members of the committee for their hard work.

The meeting adjourned at 9:00 a.m.