CCGB Meeting Agenda, February 16, 2007

1. Approval of Minutes
2. Undergraduate Announcements
3. Game Design Minor: Change in Courses
4. Responsibilities of the CCGB regarding the motions passed by the Engineering Faculty last Tuesday
5. Advisor-approved Electives

CCGB Minutes, February 2, 2007

Ex-Officio: B. East, F. Shumway, M. Spencer
Other: C. Pakkala

Approval of Minutes: The minutes of the 1/26/07 CCGB Meeting were approved as written.

Undergraduate Announcements: F. Shumway stated that Advising is starting to gear up for Early Intervention. J. Bartsh said that he checked the final exam schedule and noticed that three science exams are scheduled right in a row. M. Duncan responded that the exam times have been optimized so that students aren’t burdened with back-to-back exams.

M. Spencer said that the Admissions Office has received over 5900 applications for admission; last year the total was 5800. It might be interesting to see if we hit 6000 for the first time. The quality of the students is phenomenal. L. Pollack asked if the applications are typically done online. M. Spencer replied that about 80% of the applications are done online. A. Zehnder said that students must apply to more colleges than they used to. L. Pollack said that it is easier for students to apply online because they complete a common application.

A. Zehnder asked the CCGB members when they will be ready to discuss the advisor-approved electives. The issue should be discussed with colleagues. M. Duncan stated that CBE had discussed the electives and is very much opposed to changing them. A. Zehnder said that the CCGB would try to discuss the electives next week.

Discussion by Shef Baker on the Curriculum Task Force Proposals: S. Baker stated that the Curriculum Task Force document is a brief summary of the initial interpretation of data. E. Fisher asked if the main topics would be motions. She feels that there hasn’t been time to discuss and assimilate the information. This will be short notice for voting. D. Gries said that if faculty don’t want to vote, we’ll put this off. There is a sense that we should move forward with them. A. Zehnder said that there are a number of motions not to implement but to further pursue them and figure them out. S. Baker said that a number of them require groups of people to get together and figure them out. E. Fisher stated that she generally tries to have any motions a week in advance for people to discuss them. She is not sure how much of a problem this might be.

Integrating Math Into Core Science Courses. S. Baker stated that it is his sense that physics courses don’t apply math at the pre- and co-requisites for the courses. The math courses keep getting updated and the physics courses are lagging behind. The physicists know the math in their courses, but math instructors don’t know how to integrate physics into their courses. We want the physics and sciences courses to use math. L. Pollack stated that she re-examined the physics syllabi last semester when the Math 190 issue was being discussed, and she thought about re-evaluating the softness of the pre-requisites. She is not sure how to integrate math into physics in a better way; she thinks AEP is already doing it. A student could conceivably take Physics 213 without prior knowledge of Math 192 (a pre-requisite), but they would struggle with Physics 217. Students taking honors courses should have stronger math preparation. Math 192 is listed as a pre-requisite for both Physics 213 and 217.

A. Zehnder said that when Math 293 and 294 changes were done, it was in consultation with Physics about pre-requisites. The CCGB asked Physics to have clear prerequisites. Prerequisites are always difficult because people teach different classes. S. Baker stated that if you look at engineering education, it is clear that integrating math
into courses makes people better in both math and science. The Curriculum Committee thought about the ways of integrating science into math and vice versa in the easiest way. Physics 213 requires Math 192 but doesn’t use it at the level that it is taught in that physics course.

L. Pollack said that Physics 214 is waves, and if students don’t have Math 293 before waves, that is a problem. Students can kind of slide through some physics courses before Physics 214, but they need Math 293 (diff. equations) for Physics 214. She sat down with the Math Liaison Committee last year to discuss this. B. East stated that we need to figure out better how to mesh the courses and figure out how to use math in the courses.

L. Pollack said that AEP can enforce the pre-requisites. S. Baker responded that the Curriculum Committee was assuming that the pre-requisites have been reinforced. L. Pollack said that the course materials in AEP have responded to the level of the math the students currently have. But she needs to go to the other AEP faculty to try and persuade them to enforce the pre-requisites. S. Baker wondered why pre-requisites and co-requisites even exist if they are not reinforced. L. Pollack said that she can meet with the Physics Liaison Subcommittee and say that they need to be reinforced. If she can assure physics colleagues that students will be up to par in math, some focus in the courses can shift.

**AEW-style Workshops in Math 191-192.** S. Baker stated that many math instructors don’t have physics or engineering backgrounds, but we know what type of math we need. We need to integrate engineering into mathematics. We want to test an AEW-style workshop in Math 191-192 as a pilot, to see how effective it is and how much it costs. B. East asked how it would be different from our current AEWs. The proposal presumes that AEWs are remedial. If there will be interactive, small group things, she wondered who will teach the small group things. D. Gries stated that some faculty don’t understand what AEWs are; some feel they are remedial. S. Baker affirmed that our faculty think AEWs are remedial. B. East stated that almost a third of our students take AEWs. She wondered if the students in the new course would work on engineering problems as opposed to math problems. S. Baker replied that it would.

D. Gries said that currently AEWs have a facilitator in the course, but a faculty member is not involved. With the new course a faculty member would be involved in developing the engineering problems. S. Baker said that our students are on average very good at abstract math, but it is tough for them to apply it to the physical world. The faculty comments/objections were primarily that AEWs are remedial and that we shouldn’t force the students to take remedial classes because they’re better than that. Once students see how to apply math problem to solve engineering problem, it should enhance their math learning and engineering capabilities. Students are better with the integration of engineering into math.

C. Seyler said that it will be tough to try to get faculty on board with the implementation, and a lack of resources will be a problem. Also, classroom space is limited. S. Baker stated that the AEWs require a different class setup, with many small groups scattered about. He discussed replacing half of the workshops in Math 191 and 192 with this. Decisions need to be made regarding the implementation process. B. East suggested that this course be piloted with 100 kids over a 2-year period to see how it goes. S. Baker agreed that it could be done that we because we’re currently not locked into anything. A. Zehnder said that we would need to make it clear that this would replace a recitation section. F. Shumway stated that she frequently hears from students that when they do poorly on an exam it was because they understood the concepts but not how to solve a problem. This new AEW would be helpful for the students.

**Content of M/S/C Core Courses.** S. Baker stated that the content of the math/science/computing core courses is important because we want students to have tools that they can take away and use in later classes. Having Chemistry 207 taught in both the fall and spring semesters would require approval from the Chemistry Department. Those students who took CHEM 207 as preparation for MSE 301 did better than those who took CHEM 211. Those who took CHEM 211 didn’t have the background for MSE 301. This is the type of problem to which we’re responding. The interpretation is that there is too much information in CHEM 211 and students didn’t learn the skills they needed. The proposal doesn’t address CBE (they don’t use CHEM 211). We could keep CHEM 211 in the college, but departments could require certain chemistry courses. If we were going to offer a 1-semester overview of chemistry, it would not be CHEM 211.

**The Computing Core:** S. Baker stated that faculty were in favor of requiring students to take a 1-credit course using Matlab followed by a 4-credit course using Java OR students would take a 4-credit course using Matlab fol-
allowed by a 1-credit course on the object-oriented part of Java. There was less support for the 1-credit course due to implementation concerns.

L. Pollack stated that grouping this requirement together with the Math 191 and 192 changes will have many more students taking AEWs. Students will have a collection of 1-credit courses. She wondered what they will do with these course hours and whether they will count for anything. M. Duncan said that they shouldn’t count toward graduation. They are like the ENGR 150s. L. Pollack expressed her concern about adding more course hours and having them add up over time.

B. East stated that this would be a new requirement, a new addition and be S/U. D. Gries said that we’re thinking this should be a self-paced course because many students may come in with programming and want to find out about Matlab. Passing the test in the course would require mastery; a student couldn’t squeak by with C- on the prelim. The grades wouldn’t be curved. S. Baker stated that the faculty are enthusiastic about a greater focus on programming. We need to decide if this is worth the 1-credit cost.

S. Baker said that some of the proposals were rejected by the faculty, needed further investigation or didn’t require action. The Purpose of the M/S/C Core was to establish a “mission statement” for core courses. The Math Core proposed changes were rejected by the faculty, who prefer that the situation remain unchanged. The Science Core proposal was accepted, with the recommendation that CHEM 211 be eliminated but a fourth science course remain flexible.

Incorporating Statistics into the majors was widely supported, but the issue requires more discussion. Incorporating computing into Math 293/294 was supported, but the issue was referred to the Math Liaison Subcommittee so they can develop a proposal. Approximately half of the faculty were in favor of incorporating biology into every major, but it was determined that the issue requires more discussion.

The faculty rejected both the ENGRE and ENGRF courses, so these issues will be tabled for the moment. The faculty supported flexibility of students being able to choose their engineering major up to the start of their third semester, but they also agreed that ChemE should have an exception to the rule based on their curriculum, so the status quo will remain. The faculty are in favor of investigating ways to bring more study abroad possibilities to our students, but there is no need to vote on this issue. The faculty are in favor of students being able to take more courses that are non-technical but still related to their individual goals, but they did not want to set up a committee to determine how to increase flexibility within the curriculum. The CCGB will examine the issue of advisor-approved electives.

The meeting adjourned at 9:03 a.m.